



Sustainability & Energy Statement

Land North of Milksey Lane, Graveley, Hitchin, SG4 7LA

Gade Homes

Report No: PA-ES-GH-GY-25-01

Report Date: January 2025

CONTENTS

1. ASSESSMENT INFORMATION	2
2. EXECUTIVE SUMMARY	3
3. INTRODUCTION.....	5
4. PLANNING POLICY	6
4.1 National Planning Policy Framework (NPPF) 2023	6
4.2 Local Planning Policy	7
5. ENERGY STRATEGY APPROACH	9
5.1 Energy and Carbon Assessment Methodology	9
6. BASELINE CO₂ EMISSIONS.....	10
6.1 Sample SAP Assessment Units	10
6.2 Total Baseline	11
7. PASSIVE DESIGN AND ENERGY EFFICIENT MEASURES (BE LEAN)	12
7.1 Passive design.....	12
7.2 Building Fabric	12
7.3 Energy Efficient Systems	13
7.3.1 Heating and Hot Water	13
7.3.2 Ventilation	13
7.3.3 Cooling.....	13
7.3.4 Lighting	13
7.3.5 Energy Metering and Monitoring	13
7.4 Residential Fabric Energy Efficiency (FEE)	14
7.5 Total CO ₂ Savings: Be Lean	14
8. SUPPLY ENERGY EFFICIENTLY (BE CLEAN)	15
9. RENEWABLES OR LZC TECHNOLOGY (BE GREEN)	16
9.1 Air Source Heat Pumps (ASHP)	16
9.2 Building Services Energy Efficiency Measures	17
10. TOTAL CO₂ SAVINGS: BE GREEN.....	18
11. SUSTAINABLE DESIGN AND CONSTRUCTION: MATERIALS AND WASTE	19
12. WATER SAVING MEASURES	21
13. CONCLUSIONS	22
13.1 Total CO ₂ Savings.....	22
14. APPENDICES.....	24
14.1 Appendix A: Alternative Renewable Energy Options	25
14.2 Appendix B: Daikin Altherma Technical Datasheet	27
14.3 Appendix C: Sample SAP Output Sheets (Be Lean)	28
14.4 Appendix D: Sample SAP Output Sheets (Be Green).....	29

LIST OF TABLES

TABLE 1: ENERGY STRATEGY CARBON EMISSIONS SUMMARY	3
TABLE 2: RESIDENTIAL FEE PERFORMANCE	3
TABLE 3: REPRESENTATIVE SAMPLE SAP DWELLINGS	10
TABLE 4: TOTAL BASELINE CO₂ EMISSIONS	11
TABLE 5: PROPOSED FABRIC SPECIFICATION	12
TABLE 6: RESIDENTIAL FEE PERFORMANCE	14
TABLE 7: TOTAL 'BE LEAN' CO₂ EMISSIONS	14
TABLE 8: SUMMARY OF BUILDING SERVICES	17
TABLE 9: TOTAL 'BE GREEN' CO₂ EMISSIONS	18
TABLE 10: SPECIFICATION OF FLOW RATES AND VOLUMES FOR WATER USING APPLIANCES.	21
TABLE 11: WATER CALCULATIONS	21
TABLE 12: SUMMARY OF PROPOSED ENERGY STRATEGY	22
TABLE 13: ENERGY STRATEGY CARBON EMISSIONS SUMMARY	22
TABLE 14: RESIDENTIAL FEE PERFORMANCE	22

LIST OF FIGURES

FIGURE 1: SITE PLAN	5
FIGURE 2: EXAMPLE DIAGRAM OF ASHP SYSTEM	16
FIGURE 3: MITSUBISHI ECODAN TECHNICAL DATASHEET	27

1. ASSESSMENT INFORMATION

Project Name	Graveley
Project Address	Land North of Milksey Lane, Graveley, Hitchin, SG4 7LA
Client/Architect	Gade Homes
Client's Address	Amersham House, Mill Street, Berkhamsted, Hertfordshire, HP4 2DT
Architect	FINC Architects
Architect's Address	Parallel House, 32 London Road, Guildford, GU1 2AB
Project Description	Erection of 24 dwellings, new access from High Street, associated parking, drainage, amenity space and landscaping.

	Author	Date	Email Address
Produced by	MH	30/01/24	mike.hassett@abbey-consultants.com
Reviewed by			

Issue Number	Author	Date	Reason
01	MH	30/01/24	Initial Issue
02			
03			
04			

This document has been prepared for Gade Homes only and solely for the purposes expressly defined herein. We owe no duty of care to any third parties in respect of its content. Therefore, unless expressly agreed by us in signed writing, we hereby exclude all liability to third parties, including liability for negligence, save only for liabilities that cannot be so excluded by operation of applicable law. The consequences of climate change and the effects of future changes in climatic conditions cannot be accurately predicted. This report has been based solely on the specific design assumptions and criteria stated herein.

2. EXECUTIVE SUMMARY

This Sustainability and Energy Statement has been prepared by Abbey Consultants (Southern) Ltd, a specialist environmental and energy consultancy, on behalf of Gade Homes (“the applicant”), to accompany their planning application for the provision of 24 new dwellings on Land North of Milksey Lane, Graveley, Hitchin, SG4 7LA (“the application site”).

The proposed strategy has been based around the relevant objectives of the North Hertfordshire Local Plan 2011-2031 (adopted November 2022). This report considers sustainability and energy, with an assessment of the predicted CO₂ demand for the proposed development. In the formulation of this strategy, much consideration has been given to minimising the carbon emissions of the proposed development, and to ensure the development is constructed to rigorous sustainability standards.

In keeping with the requirements of North Hertfordshire District Council, and Building Regulations Part L 2021, this report comprises of the following:

- A Building Regulation baseline energy assessment for the proposed development.
- Will minimise energy demand and subsequent CO₂ emissions through the specification of low U-values, low air permeability and low thermal bridging to reduce heat loss.
- A calculation of CO₂ savings that are to be achieved as a result of energy efficiency measures.
- An appraisal of the potential options for on-site renewables or low and zero carbon technologies.
- An outline specification of the proposed water efficiency measures to limit the internal water usage of each dwelling to less than 110 litres per person per day.

The development will reduce regulated CO₂ emissions by integrating a range of passive and active design and energy efficiency measures throughout the building. These measures include improving building fabric standards beyond the requirements of Part L of the Building Regulations. These measures enable the proposed scheme to go beyond and Target Fabric Energy Efficiency (TFEE) minimum standards via energy efficiency measures alone.

Following the fabric and energy efficiency improvements, the ‘Be Green’ stage of the energy hierarchy details that individual air source heat pumps will be installed to houses.

This will provide a low carbon energy solution to meet the space heating and hot water demands of the dwellings.

All of the measures detailed herein combine to see an estimated saving of 19.29 tonnes of CO₂ per year compared to the Building Regulations Part L 2021 baseline. This represents 65% CO₂ emissions improvement beyond Part L 2021 requirements.

A summary of the overall reduction in CO₂ emissions after each stage of the energy hierarchy is summarised in the table below.

Table 1: Energy Strategy Carbon Emissions Summary

Stage of Energy Hierarchy	Regulated CO ₂ Emissions (tonnes/year)
Total Baseline	29.70
Total After ‘Be Lean’	25.41
Total After ‘Be Green’	10.41
Total Saving	19.29
Total Improvement	65%

Finally, the fabric specification detailed within this energy strategy ensures that the average Dwelling Fabric Energy Efficiency improves upon the average Target Fabric Energy Efficiency (as defined by Building Regulations Part L1 2021) by 7%. This is detailed within the table below.

Table 2: Residential FEE Performance

Element	Target Fabric Energy Efficiency (TFEE) kWh/m ² /year	Dwelling Fabric Energy Efficiency (DFEE) kWh/m ² /year	Improvement (%)
Residential Total	39.28	36.68	7%

Sustainability and Energy Summary

The strategy achieves and meets the following requirements:

- Maximises the energy efficiency performance of the building fabric, in accordance with the energy hierarchy.
- The fabric energy efficiency (DFEE) achieves a 7% reduction over the minimum standards defined by Building Regulations Part L1 2021 (TFEE).
- The carbon dioxide emissions of the houses are further minimised at the 'Be Green' stage of the energy hierarchy by deploying air source heat pump technology to provide the dwellings with heating and hot water.
- Reduces a total estimated 19.29 tonnes of CO₂ compared to the Part L 2021 baseline. This equates to a 65% saving.
- Complies with all of the main compliance criteria required by Part L 2021 of the Building Regulations.
- Details a specification of water efficiency measures which will limit the water consumption of the dwellings to no more than 110 litres/person/day.

3. INTRODUCTION

This document has been prepared by Abbey Consultants (Southern) Ltd, a specialist environmental and energy consultancy on behalf of Gade Homes.

The following report establishes a baseline assessment of the energy demands and associated CO₂ emissions for the development. The energy hierarchy approach of Be Lean, Be Clean and Be Green is then followed to ensure the maximum viable reductions in energy and regulated CO₂ emissions is achieved.

The proposed development is described as:

Erection of 24 dwellings, new access from High Street, associated parking, drainage, amenity space and landscaping.

The report takes into consideration the layout, use and requirements for the development to recommend a strategy that integrates the most suitable technologies available that are commercially viable, whilst also adhering to the requirements of Building Regulations and the relevant planning policies.

Figure 1, across the page, presents the proposed site layout.

Figure 1: Site Plan



4. PLANNING POLICY

4.1 NATIONAL PLANNING POLICY FRAMEWORK (NPPF) 2023

The NPPF sets out the Government's planning policies for England and how these are expected to be applied. It sets out the Government's requirements for the planning system only to the extent that it is relevant, proportionate and necessary to do so. It provides a framework within which local people and their accountable councils can produce their own distinctive local and neighbourhood plans, which reflect the needs and priorities of their communities.

Chapter 14 Meeting the challenge of climate change, flooding and coastal change

The following paragraphs set out the Government's position in response to reducing carbon emissions:

Paragraph 159. New development should be planned for in ways that:

- a. avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the planning of green infrastructure; and
- b. can help to reduce greenhouse gas emissions, such as through its location, orientation and design. Any local requirements for the sustainability of buildings should reflect the Government's policy for national technical standards.

Paragraph 160. To help increase the use and supply of renewable and low carbon energy and heat, plans should:

- a. provide a positive strategy for energy from these sources, that maximises the potential for suitable development, while ensuring that adverse impacts are addressed satisfactorily (including cumulative landscape and visual impacts);
- b. consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure their development; and
- c. identify opportunities for development to draw its energy supply from decentralised, renewable, or low carbon energy supply systems and for co-locating potential heat customers and suppliers.

Paragraph 161. Local planning authorities should support community-led initiatives for renewable and low carbon energy, including developments outside areas identified in local plans or other strategic policies that are being taken forward through neighbourhood planning.

Paragraph 162. In determining planning applications, local planning authorities should expect new development to:

- a. comply with adopted Local Plan policies on local requirements for decentralised energy supply unless it can be demonstrated by the applicant, having regard to the type of development involved and its design, that this is not feasible or viable; and
- b. take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption.

Paragraph 163. When determining planning applications for renewable and low carbon development, local planning authorities should:

- a. not require applicants to demonstrate the overall need for renewable or low carbon energy, and recognise that even small-scale projects provide a valuable contribution to cutting greenhouse gas emissions;
- b. approve the application if its impacts are (or can be made) acceptable. Once suitable areas for renewable and low carbon energy have been identified in plans, local planning authorities should expect subsequent applications for commercial scale projects outside these areas to demonstrate that the proposed location meets the criteria used in identifying suitable areas, and
- c. in the case of applications for the repowering and life-extension of existing renewable sites, give significant weight to the benefits of utilising an established site, and approve the proposal if its impacts are or can be made acceptable.

Paragraph 164. In determining planning applications, local planning authorities should give significant weight to the need to support energy efficiency and low carbon heating improvements to existing buildings, both domestic and non-domestic (including through installation of heat pumps and solar panels where these do not already benefit from permitted development rights). Where the proposals would affect conservation areas, listed buildings or other relevant designated heritage assets, local planning authorities should also apply the policies set out in chapter 16 of this Framework

4.2 LOCAL PLANNING POLICY

North Herts Council

North Hertfordshire Local Plan 2011-2031

Adopted November 2022

Policy D1

Sustainable Design

Planning permission will be granted provided that development proposals:

- a) Respond positively to the site's local context.
- b) Take all reasonable opportunities, consistent with the nature and scale of the scheme, to:
 - i. create or enhance public realm.
 - ii. optimise the potential of the site by incorporating Sustainable Drainage Systems (SuDS);
 - iii. reduce energy consumption and waste;
 - iv. retain existing vegetation and propose appropriate new planting;
 - v. maximise accessibility, legibility and physical and social connectivity both internally and with neighbouring areas;
 - vi. future proof for changes in technology and lifestyle;
 - vii. design-out opportunities for crime and anti-social behaviour; and
 - viii. minimise the visual impact of street furniture and parking provision;
- c) Have regard to the Design SPD, and any other relevant guidance;
- d) Within Letchworth Garden City have regard to the Letchworth Garden City Design Principles contained in Appendix 5; and
- e) For residential schemes, meet or exceed the nationally described space standards and optional water efficiency standards.

Policy SP9

Design and Sustainability

The Council considers good design to be a key aspect of sustainable development. We will:

- a) Support new development where it is well designed and located and responds positively to its local context.
- b) Require Strategic Masterplans to be produced for Strategic Housing Sites and other significant development. Significant development generally comprises residential development of 100 dwellings or more. Exceptionally, developments under 100 dwellings will be considered significant if there are site specific

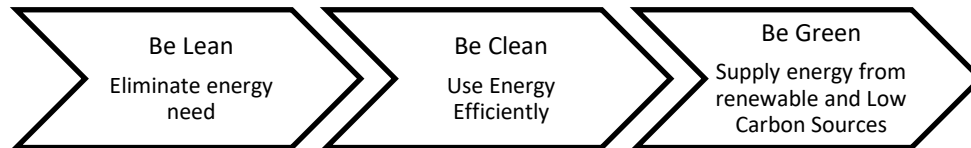
complexities and sensitivities that require a masterplan-led approach. In some circumstances a Strategic Masterplan may also be required to consider the cumulative impact of more than one site to support a co-ordinated and integrated approach to place-making and design.

- c) Require Strategic Masterplans and planning applications for Strategic Housing Sites and significant development to (as applicable):
 - i. create buildings, spaces and streets which positively reflect and respond to the local landscape, townscape and historic character
 - ii. create integrated, accessible and sustainable transport systems with walking, cycling and public transport designed to be the most attractive forms of transport and effectively linking into the surrounding areas;
 - iii. provide a clear structure and hierarchy of pedestrian friendly streets and well-connected footpaths and cycleways integrate with the wider built and natural environment and communities.
 - iv. plan for integrated and mixed-use communities with walkable locally accessible community, employment and retail facilities;
 - v. positively integrate with adjacent rural and urban communities and positively contribute to their character and the way the area functions, including addressing cumulative, cross boundary planning and infrastructure matters;
 - vi. create and accessible multi-functional green infrastructure network that provides:
 - a key structuring and functional place-making feature supporting healthy lifestyles, sport, play and recreation linking into the wider Green Infrastructure Network; and
 - a high-quality integrated network to support ecological connectivity, biodiversity net gain, climate adaptation and mitigation linking into the wider Ecological Network
 - vii. ensure the effective use of sustainable urban drainage and sustainable water management;
 - viii. ensure a hierarchy of linked, high quality and attractive public spaces and public realm that is safe, attractive and supports social interaction for all age groups; and
 - ix. design to last with a clear stewardship, management and maintenance strategy
- d) Ensure Strategic Masterplans are informed by a technical and design evidence base and include the following for Strategic Housing Sites and where applicable for other significant development:

- i. site specific vision and place-making principles
 - ii. Masterplan setting out the quantum, scale, type, mix and distribution of land uses, housing and community facilities;
 - iii. Green Infrastructure Framework identifying the scale, distribution, type and design of green spaces, biodiversity net gain, strategic drainage and on and off-site linkages:
 - iv. Movement Framework setting out the key access points, strategic highways, street hierarchy and footways and cycleways (on and off site)
 - v. Urban Design Framework and design principles identifying how the site responds to local character and context and key structuring elements and layout principles (including heights and densities)
 - vi. Sustainability & Energy Framework identifying site-wide and building scale opportunities for low and zero carbon
 - vii. Illustrative Masterplan Layout
 - viii. Infrastructure Delivery, Phasing & Management Strategy
- e) Encourage the submission of Strategic Masterplans for the Council's consideration and agreement before the submission of a planning application. We will also confirm the scope and contents of individual Strategic Masterplans with applicants in pre-application discussions. Planning applications must be accompanied by a Strategic Masterplan. Where applications have already been submitted to the Council a Strategic Masterplan should be agreed with the Council prior to or as part of the grant of planning permission. Adherence to the Strategic Masterplan will be secured through planning conditions and/or legal agreement.
- f) Assess proposals against detailed policy requirements set out in this Plan and have regard to the Design SPD; and g)
- g) Adopt the Government's additional technical standards for the size of new homes, water efficiency and, in specified circumstances, accessibility.

5. ENERGY STRATEGY APPROACH

The proposed energy strategy follows the established and widely accepted Energy Hierarchy of eliminate energy need (Be Lean), Use energy efficiently (Be Clean) and supply energy from renewable and low carbon sources (Be Green) to enable the maximum viable reductions in regulated and total CO₂ emissions over the baseline.



The proposed energy supply solutions aim to match energy profiles of the development ensuring effective use. The proposed solutions consider viability and flexibility of the scheme from both a technical and economic point of view by identifying best combination of energy efficiency measures as well as decentralised and renewable energy supply solutions.

Using these principles, Gade Homes will deliver the following objectives:

- Comply with the relevant regulatory requirements.
- To reduce energy and CO₂ demand through fabric and energy efficiency measures.
- To propose to reduce energy consumption and carbon dioxide emissions further through the use of on-site renewable or low and zero carbon technologies (LZC).

5.1 ENERGY AND CARBON ASSESSMENT METHODOLOGY

Elmhurst Energy software, which uses the Standard Assessment Procedure (SAP) 10.2 methodology to assess compliance with Part L1 2021, has been used to evaluate an initial CO₂ performance of representative residential dwellings. To assess energy performance of the entire residential development, an energy and carbon assessment model has been produced, which extrapolates the results of the SAP analysis using the floor area weighted average method detailed within Part L1 2021 to predict the energy consumption and CO₂ performance of the residential development.

Although the produced data detailed within this report provides estimations of possible energy and carbon performance of the development, it is not intended to be used as a detailed design tool.

6. BASELINE CO₂ EMISSIONS

In order to assess the energy demand and CO₂ performance of the proposed energy strategy, a baseline needs to be established. This section sets out the approach taken to calculating the baseline CO₂ emissions for the development.

The total baseline CO₂ emissions for the proposed development is defined as regulated CO₂ emissions, which is covered by Building Regulations Part L. Regulated CO₂ emissions are calculated from the CO₂ emissions associated with space heating, hot water, and fixed electrical demands (for lights, fans and pumps).

Unregulated CO₂ emissions are those that are associated with appliances. Unregulated CO₂ emissions are not covered by Part L and are therefore not included as part of the assessment detailed within this energy strategy.

CO₂ Conversion Factors have been applied in accordance with the requirements of Building Regulations Part L 2021. These were detailed in the previous section of this report.

6.1 SAMPLE SAP ASSESSMENT UNITS

The baseline CO₂ emissions for the proposed development are based on the Part L1 2021 Target Emission Rate (TER) performance of representative dwellings. The baseline CO₂ performance has been determined by carrying out SAP 10.2 modelling to establish the TERs of sample dwellings. The TER sets a minimum allowable standard for the energy performance of a building and is defined by the annual CO₂ emissions of a notional building of the same type, size and shape to the proposed building. The specification of the notional building used to calculate the TER is defined within Building Regulations Part L1 2021. The representative dwellings presented in the following table were used to carry out the SAP assessment.

Table 3: Representative Sample SAP Dwellings

Sample SAP Type Reference	No. of Units
DET (112-6)	1
DET (123-1)	2
DET (150-3)	4
DET (197-5)	3
GF MAIS	1
SEMI (132-8)	6
SEMI (81-4)	2
TER (91-6)	3
TER (94-6)	1
TF MAIS	1
TOTAL:	24

The TER worksheets of the dwellings can be found in the appendices. The TER results of the SAP assessments from the dwellings have been extrapolated using a weighted average method to predict the baseline.

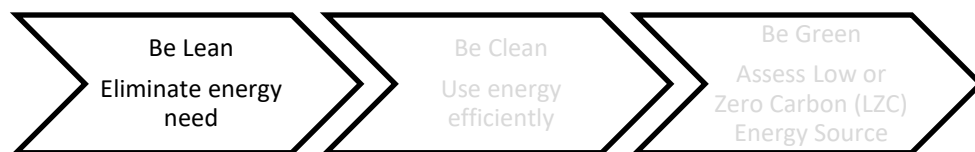
6.2 TOTAL BASELINE

The total baseline CO₂ emissions for the development are summarised below.

Table 4: Total Baseline CO₂ emissions

Stage of Energy Hierarchy	Regulated CO ₂ Emissions (tonnes/year)
Part L1 2021 Baseline	29.70

7. PASSIVE DESIGN AND ENERGY EFFICIENT MEASURES (BE LEAN)



In accordance with the Energy Hierarchy, the energy demands of the development should be reduced as much as practically viable, prior to considering low carbon or renewable measures.

A range of measures to reduce CO₂ emissions and increase resilience to climate change are proposed in the building design including good building fabric standards as well as energy efficient M&E systems and lighting.

7.1 PASSIVE DESIGN

The development will incorporate a range of passive design measures and energy efficient building fabric that will reduce the demand for space heating, ventilation, and artificial lighting.

Passive design utilises daylight, solar energy and shading to illuminate, heat and shade where necessary and ventilate/cool the buildings, thus requiring less (mechanical) energy to achieve the performance standards for the health and wellbeing of the occupants.

Natural ventilation has been considered but is judged to be inappropriate due to the high energy efficiency requirements and the CO₂ reduction target. Therefore, decentralised mechanical ventilation has been specified as a more suitable approach to extract air from the dwellings.

The ventilation strategy will be reviewed again and developed as the design progresses to ensure compliance with all the relevant regulations and standards. Should certain elevations be affected by noise/security issues restricting the opening of windows, enhanced mechanical ventilation will be introduced to reduce the risk of overheating. It is assumed, in this scenario, that all windows can still be opened (albeit intermittently) for purge ventilation.

The proposed glazed areas have been designed to maximise daylight and optimise solar gains. This is enhanced by the linear southeast facing front elevations of the dwellings. The glazing specification has been reviewed to ensure that they provide a balance between solar control and solar gain.

7.2 BUILDING FABRIC

To reduce demand for space heating, emphasis has been placed on providing a very high standard of fabric efficiency and reducing heat loss through the building envelope. Approved Document Part L1 2021 sets out the limiting fabric parameters for each of the building elements. Each stated value represents the area-weighted average U-value. The following table details the proposed U-values to be used in the described exposed element within the fabric of the development.

Table 5: Proposed Fabric Specification

Element	Part L1 2021 Minimum Fabric Requirements	Proposed Specification
Ground Floor	0.18 W/m ² K	0.12 W/m ² K
External Walls	0.26 W/m ² K	0.18 W/m ² K
Party Wall	0.20 W/m ² K	0.00 W/m ² K
Roof – insulated at ceiling	0.16 W/m ² K	0.10 W/m ² K
Roof – flat	0.16 W/m ² K	0.15 W/m ² K
Windows	1.60 W/m ² K	U Value = 1.40 W/m ² K G Value = 0.45 BFRC Certificate Assumed
Roof Lights	1.60 W/m ² K	U Value = 1.40 W/m ² K G Value = 0.63 Frame Factor = 0.70
Front Doors	1.60 W/m ² K	1.40 W/m ² K
Air Permeability	8.0m ³ /h/m ² @50Pa	4.65m ³ /h/m ² @50Pa

Where applicable, approved recognised construction details for all wall junctions will be specified to minimise the effects of non-repeating thermal bridging and reduce heat loss further. By specifying and ensuring that approved construction details are designed into the build, CO₂ emissions can be greatly reduced. It is also proposed that the openings will have Hi-Therm lintels installed to maximise thermal efficiency.

7.3 ENERGY EFFICIENT SYSTEMS

Energy efficiency can be significantly reduced by using energy efficient M&E systems. The recommended indicative energy efficiency measures for the proposed development are provided below and have been included within the energy and carbon modelling.

7.3.1. HEATING AND HOT WATER

The space heating requirement of the proposed development will be significantly reduced by the proposed fabric, air tightness and ventilation measures.

It is proposed that the dwelling will have their space heating and hot water supplied through highly efficient individual air source heat pumps. Highly insulated hot water cylinders will be installed in conjunction with the ASHPs as part of the heating system of each dwelling.

It is proposed that the dwellings will have their heating and hot water supplied through highly efficient individual air source heat pumps. However, as this technology is considered a low and zero carbon technology, it can only be considered at the 'Be Green' stage of this energy hierarchy. Therefore, for the purpose of reporting the 'Be Lean' figures, gas combination boilers have been assumed at the 'Be Lean' stage. This is consistent with the heating that is assumed in the notional building which is used to calculate the TER.

7.3.2. VENTILATION

To further minimise heat loss through the building envelope, air leakage will be made a priority. The airtightness of the dwellings will be set to a level of $4.65\text{m}^3/\text{h}/\text{m}^2$ and will utilise continuously running decentralised extract fans (System 3) to ensure the airtightness of the dwellings can be kept low, without compromising on the necessity for good ventilation. A more detailed ventilation strategy will be developed during detailed design with the aim to specify the most appropriate ventilation systems and achieve a pleasant indoor environment.

7.3.3. COOLING

it is considered that cooling requirements during the hot summer months will be met via openable windows/balcony doors and mechanical ventilation with enhanced ventilation rates (where applicable).

7.3.4. LIGHTING

The proposed windows aim to maximise daylight to minimise the need for artificial lighting. The electricity consumption associated with lighting will be further reduced by effectively controlling the lighting systems by:

- Using energy efficient lamps and luminaires. Low energy lamps and LED's are proposed throughout.
- Having appropriately commissioned lighting systems.

7.3.5. ENERGY METERING AND MONITORING

Electric sub-metering will be installed in line with CIBSE TM39 to monitor and target energy use within the development. Each individual dwelling will have their own meter and it is likely that energy suppliers may insist on smart metering throughout.

7.4 RESIDENTIAL FABRIC ENERGY EFFICIENCY (FEE)

The Target Fabric Energy Efficiency rate is the minimum energy performance requirement, as stipulated by Building Regulations Part L1 2021, for all new residential dwellings. It is expressed as the amount of energy demand in units of kilowatt-hours per square metre of floor area per year. This performance metric is influenced by the fabric only, which is why it can be reported at this stage of the energy hierarchy.

The energy strategy has reduced energy demand through fabric and energy efficiency measures. The demand has been shown to have been reduced by an average of 87% when compared with Building Regulations Part L1 2021. This is detailed in the table below.

Table 6: Residential FEE Performance

Element	Target Fabric Energy Efficiency (TFEE) kWh/m ² /year	Dwelling Fabric Energy Efficiency (DFEE) kWh/m ² /year	Improvement (%)
Total Average	39.28	36.68	7%

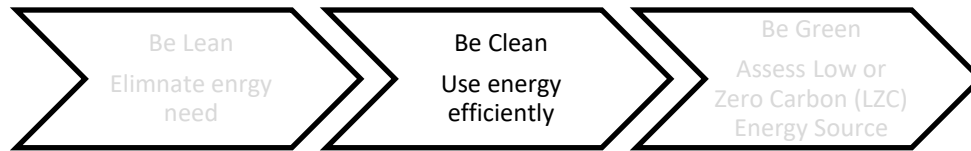
7.5 TOTAL CO₂ SAVINGS: BE LEAN

The total 'Be Lean' CO₂ emissions for the development are summarised below and compared against the baseline figure.

Table 7: Total 'Be Lean' CO₂ Emissions

Stage of Energy Hierarchy	Regulated CO ₂ Emissions (tonnes/year)
Total Baseline	29.70
Total After 'Be Lean'	25.41
Total Saving	4.29
Total Improvement	14%

8. SUPPLY ENERGY EFFICIENTLY (BE CLEAN)



Combined Heat and Power (CHP)

Decentralised energy refers to energy that is generated off the main grid. This may include micro-renewables, heating and cooling. It can also refer to energy from waste plants, combined heat and power, district heating and cooling, as well as geothermal, biomass or solar energy. Decentralised Energy schemes can serve a single building or a whole community, even being built out across entire cities.

The heat source for the communal heating system should be selected in accordance with the following heating hierarchy:

1. Connect to local or existing planned heat networks
 - a. Use zero-emission or local secondary heat sources (in conjunction with heat pump, if required)
 - b. Use low-emission combined heat and power (CHP) (only where there is a case for CHP to enable the delivery of an area-wide heat network)
 - c. Use ultra-low NOx gas boilers
2. CHP and ultra-low NOx gas boiler communal or district heating systems should be designed to ensure that they meet the relevant planning policy requirements.
3. Where a heat network is planned but not yet in existence the development should be designed for connection at a later date.

There are many benefits of decentralised heat generation and Combined Heat and Power (CHP) in terms of cost and CO₂ emissions savings. However, technology such as this is more significant for larger developments, ideally complimented with some non-residential use of heat and electricity. The proposed development size of 24 dwellings is at the lower end of what the industry tends to view as viable for such systems. The development is for residential only and this will result in 'peaky' thermal demands with little anchor load to

enable efficient operation of gas fired CHP. This option also risks the potential to increase costs to residents.

The site is neither sufficiently dense nor large enough to warrant investment from 3rd party managing agents or Energy Supply Companies (ESCos). The proposed development would need to be run by an independent agent/company and there would be very little if any interest among existing ESCos in servicing such a small-scale system. Even if it was possible, the cost of managing fuel procurement, customer billing, operation and maintenance would lead to disproportionately and unnecessary high service charges to residents compared to the provision of heat from individual heating sources.

Based on the anticipated timescale of the proposed development and the predicted trajectory of the national electricity grid decarbonisation, the development of a district heat network powered by fossil fuels is also not considered to be the most carbon efficient approach.

The incorporation of a gas fired combined heat and power (CHP) network will lock the development into relatively carbon intensive gas-fired heating and hot water technology and will not facilitate the transition to less carbon intensive solutions.

9. RENEWABLES OR LZC TECHNOLOGY (BE GREEN)



The following low and zero carbon technologies have been considered for this scheme:

- Air Source Heat Pump (ASHP)
- Domestic Hot Water Heat Pumps
- Photovoltaic Panels (PV)
- Ground Source Heat Pump (GSHP)
- Wind Turbines
- Biomass Boiler
- Solar Thermal

The assessment has shown that air source heat pumps are considered to be the most suitable renewable/low carbon energy solution for this development.

All other renewable energy technology options are summarised in the appendices and have been deemed as not appropriate for this development.

9.1 AIR SOURCE HEAT PUMPS (ASHP)

Air at any temperature above absolute zero contains some energy. An air source heat pump transfers some of this energy as heat from one place to another, for example, between the outside and inside of a building. This can provide space heating and hot water. A system can be designed to transfer heat in either direction, to heat or cool the interior of the building in winter and summer respectively. For simplicity, the description below focuses on use for interior heating.

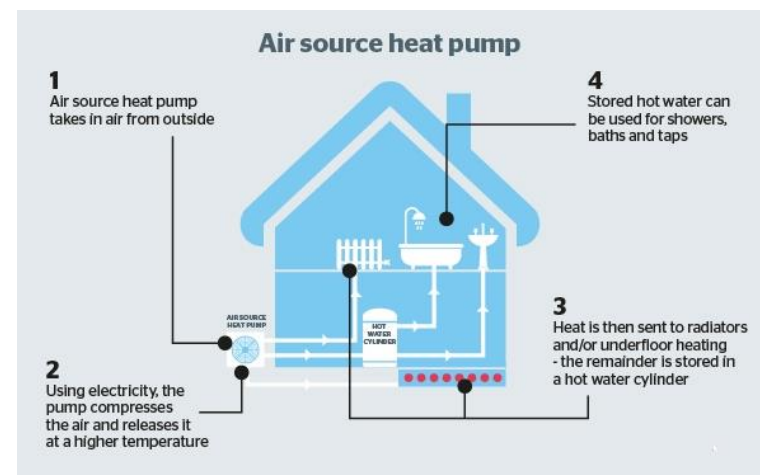
The technology is similar to a refrigerator/freezer or air conditioning unit. The different effect is due to the physical location of the different system components. Just as the pipes on the back of a refrigerator become warm as the interior cools, so an ASHP warms the inside of a building whilst cooling the outside air.

The main components of an ASHP are:

- An outdoor heat exchanger coil, which extracts heat from ambient air.
- An indoor heat exchanger coil, which transfers the heat into hot air ducts, an indoor heating system such as water-filled radiators or underfloor circuits and a domestic hot water tank.

The figure below demonstrates the typical operation of an ASHP system used to supply space heating and hot water to a property.

Figure 2: Example diagram of ASHP System



Some of the key advantages of ASHPs are listed below:

- ASHPs save carbon emissions. Unlike burning oil, gas, LPG or biomass, a heat pump produces no carbon emissions on-site (and no carbon emissions at all, if a renewable energy source is used to power them).
- They save space. There are no fuel storage requirements.
- They require less maintenance than combustion based heating systems.
- Heat pumps can provide cooling in summer, as well as heating in winter.
- There is no combustion involved and no direct emission of harmful gases.

The use of individual Air Source Heat Pumps (ASHP) is proposed for this development to efficiently supply the houses with space heating and hot water. The ASHP are to be discreetly located within the boundary of each plot. Highly insulated hot water cylinders will be installed in conjunction with the ASHPs as part of the heating system of each dwelling.

ASHPs will require electricity to operate, however this electricity can be supplied by renewable sources. This will future proof the home against the decarbonisation of the electricity grid.

The full design of this system will be further developed during the detailed design stage.

9.2 BUILDING SERVICES ENERGY EFFICIENCY MEASURES

The building services and systems to be employed within the dwellings are summarised in the following table.

Table 8: Summary of Building Services

Building Service Element	Specification
Heating & Hot Water:	Air Source Heat Pumps Mitsubishi Ecodan range assumed (appropriate model to be selected based on size of each property)
Heating Hot Water Controls:	Time and Temperature Zone Control No Delayed Start Stat
Cylinder: Heat Loss:	150 – 250 litre cylinders (dependent on property size) 1.1 – 1.8 kWh/24 Hr
Ventilation:	System 3 fans Decentralised MEV – Greenwood Unity CV2.1
Waste Water Heat Recovery:	None
Showers:	Flow rate = 8 litres per minute

10. TOTAL CO₂ SAVINGS: BE GREEN

The total 'Be Green' CO₂ emissions for the development are summarised below and compared against the previous stages of the energy hierarchy.

Table 9: Total 'Be Green' CO₂ Emissions

Stage of Energy Hierarchy	Regulated CO ₂ Emissions (tonnes/year)
Total Baseline	29.70
Total After 'Be Lean'	25.41
Total After 'Be Green'	10.41
Total Saving	19.29
Total Improvement	65%

11. SUSTAINABLE DESIGN AND CONSTRUCTION: MATERIALS AND WASTE

The selection of materials is determined by a number of factors, such as architectural context, design rationale, carbon embodiment and maintenance requirements. The proposed development will concentrate on sustainable design, with selected materials in line with local vernacular and landscape character.

The BRE Green Guide to Specification is a simple guide for design professionals. The guide provides environmental impact, cost and replacement interval information for a wide range of commonly used building specifications over a notional 60-year building life. The construction specification will prioritise materials within ratings A+, A or B. Preference will be given to the use of local materials & suppliers where viable to reduce the transport distances and to support the local economy.

Wherever feasible, there will be a commitment to using materials that are also from renewable sources and recycled e.g., secondary aggregates. The use of recycled materials (e.g., crushed concrete from waste used for hard-standing or recycled fibreglass insulation) has zero embodied energy impact, other than that expended in their processing or transport.

Timber would be sourced, where practical, certified by FSC, PEFC or an equivalent approved certification body and all site timber used within the construction process would be recycled.

All insulation materials will have a zero-ozone depleting potential.

Construction Waste will be managed during both the construction and operational phases according to the following waste hierarchy:

Step 1: Eliminate waste

Construction practice and design should reduce waste wherever possible through measures including:

- Efficient procurement avoiding over-supply and excessive packaging; and
- Eliminating waste at the design stage.

Step 2: Reuse waste materials

Reuse waste materials, ideally in its current location, avoiding the energy costs associated with transport and recycling.

Step 3: Recycle/compost waste materials

Recover materials through recycling and substitute for primary materials. Compost organic material to produce rich soils that replace fertilisers, ideally in a closed system to avoid the emissions released by organic material in landfill.

Step 4: Recover energy

If it cannot be reused or recycled, use waste instead of fossil fuels in energy generation to recover embodied energy.

Step 5: Disposal to landfill

Usually the last resort. Disposal to landfill wastes materials and embodied energy.

Construction operations generate waste materials as a result of general handling losses and surpluses. These wastes can be reduced through appropriate selection of the construction method, good site management practices and spotting opportunities to avoid creating unnecessary waste.

Targets will be set to promote resource efficiency in accordance with guidance from WRAP, Envirowise, BRE and DEFRA.

During the construction phase, the principal contractor, will be required to implement the Site Waste Management Plan (SWMP) which will detail responsibilities for resource management, what types of waste will be generated, how the waste will be managed (e.g. reduced, reused or recycled), which contractors will be used and how the quantity of waste generated by the project will be measured. It will also cover handling and storage of materials to avoid damage, efficient purchasing arrangements to minimise over ordering and segregation of construction waste to maximise potential for reuse/recycling.

The development will be constructed using industry leading procedures for the on-site segregation of waste products and will look to segregate waste under following categories:

- Mixed Waste
- Light mixed and compactible

- Inert
- Timber
- Plasterboard
- Mixed Metals
- Hazardous
- Other

A designated area will be identified for waste management for each phase and clear signage will be provided to ensure correct segregation of waste.

Waste will be minimised using the following techniques:

- Managing materials efficiently.
- Consideration taken for build dimensions to avoid cut bricks, offcuts plasterboard etc.
- Mass balancing exercise will be undertaken to retain as much material on site as possible therefore minimising waste to landfill.
- Site layout and programme reviewed to maximise the reuse of site won materials.
- Any demolition concrete waste will be crushed and re-used on site for hardcore.
- Suppliers will be responsible for their own removal of packaging.
- Details a specification to limit the water consumption of the dwellings to 110 litres/person/day.

12. WATER SAVING MEASURES

Household water reduction measures will include the following where applicable:

- Water efficient taps.
- Water efficient cisterns.
- Low output showers.
- Flow restrictors to manage water pressures to achieve optimum levels.
- Water meters to all premises with guidance on water consumption and savings.

The following specification (or similar) will be adopted on the development to ensure that the water efficiency of the dwelling will achieve a maximum consumption of 110 litres per person per day. This is in line with the requirements of Policy D1 of the North Hertfordshire Local Plan 2011-2031 (adopted November 2022).

Table 10: Specification of flow rates and volumes for water using appliances.

Water using Appliance	Comment
WC Cisterns	Dual Flush to be limited to maximum of 6/3
Baths	Capacity no greater than 190 litres
Basin taps	Flow rates to be no greater than 3 litres/minute at 3 bar
Kitchen taps	Flow rates to be no greater than 6 litres/minute at 3 bar
Shower	Flow rates to be no greater than 8 litres/minute
Water softener	Not to be installed
Washing Machine	Water usage to be limited to 8.17 Litres per KG
Dishwasher	Water Usage to be limited to 1.25 litres per place setting

Table 11: Water Calculations

Water Calculations					
Installation Type	Unit	Capacity/ Flow Rate	Use Factor	Fixed use (l/p/day)	Total Use (l/p/day)
WC Single Flush	Volume (l)	0.00	4.42	0.00	0.00
WC Dual Flush	Full Flush (l)	6.00	1.46	0.00	8.76
	Pt Flush (l)	3.00	2.96	0.00	8.88
WC's (Multiple)	Volume (l)	0.00	4.42	0.00	0.00
Taps Exc. Kitchen	Flow Rate (l/min)	3.00	1.58	1.58	6.32
Bath (shower present)	(l/min)	190.00	0.11	0.00	20.90
Shower (bath present)	(l/min)	8.00	4.37	0.00	34.96
Bath Only	(l)	0.00	0.50	0.00	0.00
Shower Only	(l/min)	0.00	5.60	0.00	0.00
Kitchen Taps	(l/min)	6.00	0.44	10.36	13.00
Washing Machines	(l/kg dry)	8.17	2.10	0.00	17.16
Dishwashers	(l/place)	1.25	3.60	0.00	4.50
Waste Disposal	(l/min)	0.00	3.08	0.00	0.00
Water Softener	(l/min)	0.00	1.00	0.00	0.00
Total Calculated Water Use (l/p/day)					114.5
Grey/Rain Water Reused (l)					0.00
Normalisation Factor	(Factor)				0.91
Total Internal Consumption (l/p/day)					104.20
External Water Use Allowance (l)					5.00
Total Consumption Part G (l/p/day)					109.2

13. CONCLUSIONS

The energy strategy detailed within this energy statement has followed the accepted Energy Hierarchy of 'Be Lean', 'Be Clean' and 'Be Green'. The energy strategy proposed for the development has been summarised below.

Table 12: Summary of Proposed Energy Strategy

Element	Strategy
Passive	Optimised design to enable controlled solar gain and improved direct and indirect natural lighting
Fabric	Building fabric U values have been enhanced over and above those detailed with Part L1 2021
Heating	Air Source Heat Pumps
Hot Water	Air Source Heat Pumps and Hot Water Cylinders
Ventilation	Low design air permeability (DAP) Mechanical extract ventilation (system 3)
Lighting	Energy efficient LED Lighting where applicable
Renewables	Heat pump technology to be deployed as detailed above

13.1 TOTAL CO₂ SAVINGS

A summary of the overall reduction in CO₂ emissions after each stage of the energy hierarchy is summarised in the table below.

Table 13: Energy Strategy Carbon Emissions Summary

Stage of Energy Hierarchy	Regulated CO ₂ Emissions (tonnes/year)
Total Baseline	29.70
Total After 'Be Lean'	25.41
Total After 'Be Green'	10.41
Total Saving	19.29
Total Improvement	65%

The CO₂ emissions savings detailed above demonstrate that by following the measures outlined within this energy strategy, a 65% reduction will be achieved compared to the Building Regulations Part L 2021 baseline.

Finally, the fabric specification detailed within this energy strategy ensures that the average Dwelling Fabric Energy Efficiency improves upon the average Target Fabric Energy Efficiency (as defined by Building Regulations Part L1 2021) by 7%. This is detailed within the table below.

Table 14: Residential FEE Performance

Element	Target Fabric Energy Efficiency (TFEE) kWh/m ² /year	Dwelling Fabric Energy Efficiency (DFEE) kWh/m ² /year	Improvement (%)
Site Wide Average	39.28	36.68	7%

Sustainability and Energy Summary

The strategy achieves and meets the following requirements:

- Maximises the energy efficiency performance of the building fabric, in accordance with the energy hierarchy.
- The fabric energy efficiency (DFEE) achieves a 7% reduction over the minimum standards defined by Building Regulations Part L1 2021 (TFEE).
- The carbon dioxide emissions of the houses are further minimised at the 'Be Green' stage of the energy hierarchy by deploying air source heat pump technology to provide the dwellings with heating and hot water.
- Reduces a total estimated 19.29 tonnes of CO₂ compared to the Part L 2021 baseline. This equates to a 65% saving.
- Complies with all of the main compliance criteria required by Part L 2021 of the Building Regulations.
- Details a specification of water efficiency measures which will limit the water consumption of the dwellings to no more than 110 litres/person/day.

14. APPENDICES

The following pages detail:

- Appendix A: Alternative Renewable Energy Options
- Appendix B: Mitsubishi Ecodan Technical Datasheet
- Appendix C: Sample SAP Output Sheets (Be Lean)
- Appendix D: Sample SAP Output Sheets (Be Green)

14.1 APPENDIX A: ALTERNATIVE RENEWABLE ENERGY OPTIONS

The following alternative options to supply low carbon and renewable energy generation have been explored and discounted based on the following reasons:

Wind Turbines

Wind turbines come in a variety of sizes and shapes. Turbines of 1kW can be installed to single house and large-scale turbines of 1-2MW can be installed on a development to generate electricity to multiple dwellings and other buildings. In both instances the electricity generated can be used on site or exported to the grid. Vertical- or horizontal-axis turbines are available.

A roof-mounted 1kW micro wind system costs up to £3,000. A 2.5kW pole-mounted system costs between £9,900 and £19,000. A 6kW pole-mounted system costs between £21,000 and £30,000 (taken from the Energy Saving Trust, TBC by supplier)

- Local average wind speed is a determining factor. A minimum average wind speed of 6 m/s is required.
- Noise considerations can be an issue dependent on density and build-up of the surrounding area.
- Buildings in the immediate area can disrupt wind speed and reduce performance of the system.
- Planning permission will be required along with suitable space to site the turbine, whether ground installed, or roof mounted.

Wind turbines have been discounted due to concerns over reliable wind resources. The use of wind turbines is likely to present aesthetic as well as nuisance issues.

Biomass Boilers

Providing a heating system fuelled by plant-based materials such as wood, crops or food waste. Biomass boilers generate heat for space heating and domestic hot water through the combustion of biofuels, such as woodchip, wood pellets or potentially biofuel or bio diesel. Biomass is considered to be virtually zero carbon. They can be used on an individual scale or for multiple dwellings as part of a district-heating network. A back-up heat source should be provided as consistent delivery of fuel is necessary for continued operation.

Biomass is not considered an economically viable option for this development based on the following reasons:

- There are, however, concerns regarding a sustainable supply of biomass to the site.
- The capital installation cost would also be high which leads us to the conclusion that biomass would not be a commercially viable option for this development scheme.

Ground Source Heat Pumps (GSHP)

Ground Source Heat Pumps (GSHPs) operate on the same principle as an Air Source Heat Pump (ASHP) in that they extract heat from a source (in this instance the ground) and compress this energy to increase temperature for space heating and hot water. Pipework is installed into the ground, either through coils or in bore holes and piles, circulating a mix of water and antifreeze to extract energy from the ground, where the year-round temperature is relatively consistent (approx. 10°C at 4 metres depth). This leads to a reliable source of heat for the building.

Again, an electrically powered pump circulates the liquid and powers the compressor, however annual efficiencies for GSHPs tend to be higher than those of ASHPs.

Discounted on the grounds of costs and available space.

Solar Thermal

Solar Thermal generates domestic hot water from the sun's radiation. Glycol circulates within either flat plate or evacuated tube panels, absorbing heat from the sun, and transferring this energy to a water cylinder. A well designed solar thermal system will account for 50-60% of a dwelling's annual hot water demand. Sizing the system to meet a higher demand will lead to excess heat generation in the summer months and overheating of the system.

Although Solar Thermal is possible on this scheme, it will not meet the level of CO₂ emissions improvement required by the Local Authority.

Photovoltaic Panels (PV)

Photovoltaics panels (PV), capture the sun's energy and convert it into electricity. This could be a solution to reduce CO₂ emissions to satisfy building regulations, however, the efficient building fabric and use of heat pump technology ensures that compliance is met without the need for PV.

14.2 APPENDIX B: DAIKIN ALTHERMA TECHNICAL DATASHEET

Figure 3: Mitsubishi Ecodan Technical Datasheet

Ecodan R32 Monobloc Air Source Heat Pump

R32

Key Features:

- A+++ heating efficiency (Range A+++ to D)
- Ultra quiet noise levels
- Maintains full heating capacity at low temperatures
- Zero carbon solution
- MELCloud enabled

Key Benefits:

- Ultra low running cost
- Flexible product placement
- Confident and quick product selection
- Help to tackle the climate crisis
- Remote control, monitoring, maintenance and technical support



ecodan.co.uk

Heating Product Information

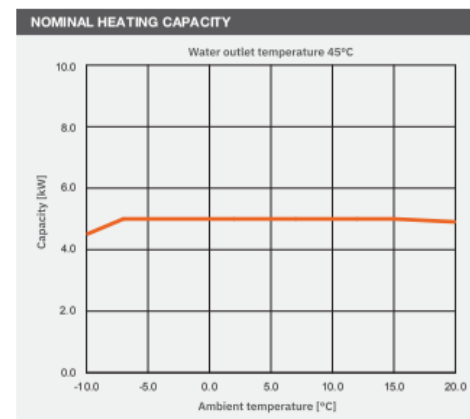
Ecodan R32
Monobloc Air Source Heat Pump

OUTDOOR UNIT		PUZ-WM50VHA(-BS)
HEAT PUMP SPACE HEATER - 55°C	HP Rating	A+++ (Range A+++ to D)
	η_{hp}	129%
	SCOP (MCS)	3.24
HEAT PUMP SPACE HEATER - 35°C	HP Rating	A+++ (Range A+++ to D)
	η_{hp}	93%
	SCOP (MCS)	4.62
HEAT PUMP COMBINATION HEATER - Large Profile ¹	HP Rating	A+ (Range A+ to F)
	η_{hp}	135%
HEATING ² (A-7/W35)	Capacity (kW)	5.0
	Power Input (kW)	1.67
	COP	3.00
OPERATING AMBIENT TEMPERATURE (°C DB)		-20 ~ +35
SOUND DATA ³	Pressure Level at 1m (dBA)	52
	Power Level (dB(A)) ⁴	61
WATER DATA	Pipework Size (mm)	22
	Flow Rate (l/min)	14
	Water Pressure Drop (kPa)	12.0
DIMENSIONS (mm)	Width	950
	Depth	330+30 ⁷
	Height	943
WEIGHT (kg)		71
ELECTRICAL DATA	Electrical Supply	220-240V, 50Hz
	Phase	Single
	Nominal Running Current (MAX) (A) ⁵	4.64 (13)
	Fuse Rating - MCS Class (A) ⁶	16
REFRIGERANT CHARGE (kg) / CO ₂ EQUIVALENT (t)	R32 (GWP675)	2.0 / 1.35

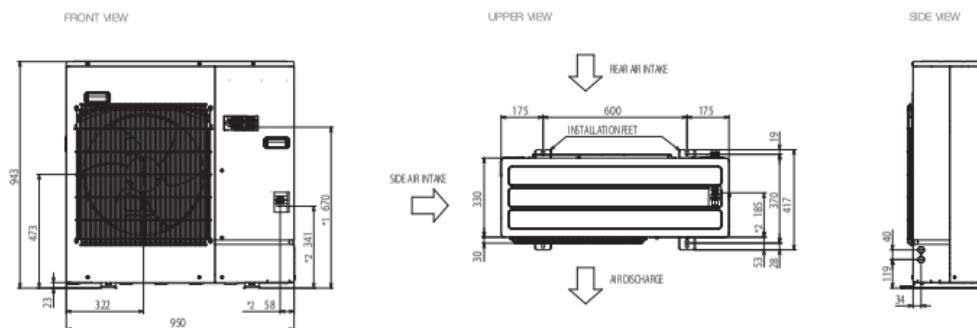
Notes:

- ¹ Combination with EPT20K Cylinder
- ² Under normal heating conditions at outdoor temp: 7°C DB / 8°C WB, outlet water temp 35°C, inlet water temp 30°C
- ³ Under normal heating conditions at outdoor temp: 7°C DB / 6°C WB, outlet water temp 55°C, inlet water temp 47°C as tested to BS EN14511.
- ⁴ Sound power level tested to BS EN12102.
- ⁵ Under normal heating conditions at outdoor temp: 7°C, outlet water temp: 35°C
- ⁶ MCS Class BS EN60696-2 & BS EN60947-2.
- ⁷ Gills.

η_{hp} is the seasonal space heating energy efficiency (SHEP) η_{whp} is the water heating energy efficiency



PUZ-WM50VHA(-BS) DIMENSIONS



14.3 APPENDIX C: SAMPLE SAP OUTPUT SHEETS (BE LEAN)

Summary for Input Data

Property Reference	DET (112-6)	Issued on Date	30/01/2025
Assessment Reference	DET (112-6)	Prop Type Ref	DET (112-6)
Property	DET (112-6)		

SAP Rating	86 B	DER	12.65	TER	10.90
Environmental	88 B	% DER < TER			-16.06
CO ₂ Emissions (t/year)	1.27	DFEE	38.58	TFEE	40.67
Compliance Check	See BREL	% DFEE < TFEE			5.14
% DPER < TPER	-24.10	DPER	70.66	TPER	56.94

Assessor Details	Mr. Matthew Fitzpatrick	Assessor ID	7601-0001
Client			

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
Which Floor	0	
2.0 Number of Storeys	2	
3.0 Date Built	2025	
3.0 Property Age Band	L	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements	Ground floor:	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	1st Storey:	30.67 m	56.30 m ²	2.50 m
		30.67 m	56.30 m ²	2.70 m

8.0 Living Area	15.15	m ²
-----------------	-------	----------------

9.0 External Walls	Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Gross Area(m ²)	Nett Area (m ²)	Shelter Res	Shelter	Openings	Area Calculation Type
	External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18	60.00	159.46	133.27	0.00	None	26.19	Enter Gross Area

9.2 Internal Walls	Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
	Stud Partitions	Plasterboard on timber frame	9.00	180.87
	Block Partitions	Dense block, plasterboard on dabs	75.00	62.95

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
	Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.10	9.00	56.30	56.30	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	56.30

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)
	Heatloss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	56.30

Summary for Input Data



11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	56.30

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Patio Doors	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Entrance Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front W	Windows	External Wall 1	North	9.83	0
Front D	Entrance Door	External Wall 1	North	2.14	0
Rear W	Windows	External Wall 1	South	6.85	0
Rear Patio Door	Patio Doors	External Wall 1	South	5.22	0
Rear D	Entrance Door	External Wall 1	South	2.14	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)	Non Gov Approved Schemes	18.35	0.05	0.05 HiTherm	No
E3 Sill	Non Gov Approved Schemes	16.31	0.02	0.02 RCD	No
E4 Jamb	Non Gov Approved Schemes	33.90	0.02	0.02 RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	30.67	0.05	0.05 RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	30.67	0.00	0.00 RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	30.67	0.05	0.05 RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	20.80	0.04	0.04 RCD	No

Description	To be calculated
-------------	---

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	500787
Duct Type	Rigid
Wet Rooms	5
SFP from Installer Commissioning Certificate	No

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.13	In Room Fan Kitchen	1
0.11	In Room Fan Other Wet Room	4
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other Wet Room	0
0.10	Through Wall Fan Kitchen	0
0.10	Through Wall Fan Other Wet Room	0

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

Summary for Input Data

Number of intermittent extract fans	0
Number of passive vents	0
Number of flueless gas fires	0

21.0 Fixed Cooling System

22.0 Pressure Testing	Yes	
Designed AP ₅₀	4.65	m ³ /(h.m ²) @ 50 Pa
Property Tested?	Yes	
Test Method	Blower Door	

22.0 Lighting	No				
No Fixed Lighting	No				
	Name	Efficacy	Power	Capacity	Count
	Lighting 1	75.00	10.00	750.00	25

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	17929	
Fuel Type	Mains gas	
SAP Code	0	
Model Name	LOGIC COMBI	
Manufacturer	Ideal Boilers	
Controls SAP Code	2110	
Delayed Start Stat	Yes	
Burner Control	Modulating	
HETAS approved System	No	
Flue Type	Balanced	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	45.00	
Boiler Interlock	Yes	
Combi boiler type	Standard Combi	

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	Main Heating 1
Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	No
Waste Water Heat Recovery Instantaneous System 2	No
Waste Water Heat Recovery Storage System	No

Summary for Input Data

Solar Panel	No
Water use <= 125 litres/person/day	Yes
Immersion Heater	Single
Summer Immersion	No
Cold Water Source	From mains
Bath Count	1
Supplementary Immersion	No
Immersion Only Heating Hot Water	No

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Bathroom	Combi boiler or unvented hot water system	8.00		No	Instantaneous System 1
En-suite	Combi boiler or unvented hot water system	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

	None	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Insulation Thickness Type	Other	
Insulation Thickness	15	
Cylinder Volume	210.00	L
Loss	1.61	kWh/day
Pipes insulation	Fully insulated primary pipework	
In Airing Cupboard	No	

31.0 Thermal Store

	None
Thermal Store Pipework	within a single casing

34.0 Small-scale Hydro

	None	
Electricity Generated	0.00	
Apportioned	0.00	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	DET (123-1)	Issued on Date	30/01/2025
Assessment Reference	DET (123-1)	Prop Type Ref	DET (123-1)
Property	DET (123-1)		

SAP Rating	86 B	DER	11.95	TER	10.28
Environmental	89 B	% DER < TER			-16.25
CO ₂ Emissions (t/year)	1.32	DFEE	36.53	TFEE	39.61
Compliance Check	See BREL	% DFEE < TFEE			7.77
% DPER < TPER	-24.29	DPER	66.84	TPER	53.78

Assessor Details	Mr. Matthew Fitzpatrick	Assessor ID	7601-0001
Client			

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
Which Floor	0	
2.0 Number of Storeys	2	
3.0 Date Built	2025	
3.0 Property Age Band	L	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	171.03	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements	Ground floor:	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	1st Storey:	34.19 m	62.22 m ²	2.50 m
		32.55 m	60.94 m ²	2.70 m

8.0 Living Area	16.56	m ²
-----------------	-------	----------------

9.0 External Walls	Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Gross Area(m ²)	Nett Area (m ²)	Shelter Res	Shelter	Openings	Area Calculation Type
	External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18	60.00	173.37	153.13	0.00	None	20.24	Enter Gross Area

9.2 Internal Walls	Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
	Stud Partitions	Plasterboard on timber frame	9.00	194.10
	Block Partitions	Dense block, plasterboard on dabs	75.00	43.45

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
	Cold Roof	External Plane	Plasterboard, insulated at ceiling level	0.10	9.00	60.94	60.94	None	0.00	Enter Gross Area	0.00
	Bay Roof	External Plane	Plasterboard, insulated at ceiling level	0.10	9.00	1.27	1.27	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	60.94

11.0 Heat Loss Floors

Summary for Input Data

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	0.12	None	0.00	75.00	62.22

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	60.94

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Patio Doors	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Entrance Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front W	Windows	External Wall 1	North	5.27	0
Front D	Entrance Door	External Wall 1	North	2.14	0
Rear W	Windows	External Wall 1	South	4.09	0
Rear Patio Door	Patio Doors	External Wall 1	South	5.22	0
Right Side W	Windows	External Wall 1	East	2.32	0
Left Side W	Windows	External Wall 1	West	1.21	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)	Non Gov Approved Schemes	14.34	0.05	0.05 HiTherm	No
E3 Sill	Non Gov Approved Schemes	13.32	0.02	0.02 RCD	No
E4 Jamb	Non Gov Approved Schemes	31.80	0.02	0.02 RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	34.19	0.05	0.05 RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	32.55	0.00	0.00 RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	11.07	0.05	0.05 RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	31.00	0.04	0.04 RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	24.67	0.04	0.04 RCD	No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	10.20	-0.09	-0.09 RCD	No
E24 Eaves (insulation at ceiling level - inverted)	Table K1 - Default	1.55	0.15	0.15	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
0.13	In Room Fan Kitchen	1
0.11	In Room Fan Other Wet Room	4
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other Wet Room	0
0.10	Through Wall Fan Kitchen	0
0.10	Through Wall Fan Other Wet Room	0

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys

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	No				
----------------------------------	---------------------------------	--	--	--	--

22.0 Pressure Testing	Yes				
Designed AP ₅₀	4.65	m³/(h.m²) @ 50 Pa			
Property Tested?	Yes				
Test Method	Blower Door				

22.0 Lighting	No				
No Fixed Lighting	No				

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	25

24.0 Main Heating 1	Database				
Percentage of Heat	100.00 %				
Database Ref. No.	17929				
Fuel Type	Mains gas				
SAP Code	0				
In Winter	89.00				
In Summer	87.30				
Model Name	LOGIC COMBI				
Manufacturer	Ideal Boilers				
System Type	Combi boiler				
Controls SAP Code	2110				
Delayed Start Stat	Yes				
Burner Control	Modulating				
HETAS approved System	No				
Flue Type	Balanced				
Fan Assisted Flue	Yes				
Is MHS Pumped	Pump in heated space				
Heating Pump Age	2013 or later				
Heat Emitter	Radiators				
Flow Temperature	Enter value				
Flow Temperature Value	45.00				
Boiler Interlock	Yes				
Combi boiler type	Standard Combi				

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
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
Bathroom	Combi boiler or unvented hot water system	8.00		No	Instantaneous System 1
En-suite	Combi boiler or unvented hot water system	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

	None	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Insulation Thickness Type	Other	
Insulation Thickness	15	
Cylinder Volume	210.00	L
Loss	1.61	kWh/day
Pipes insulation	Fully insulated primary pipework	
In Airing Cupboard	No	

31.0 Thermal Store

	None
Thermal Store Pipework	within a single casing

34.0 Small-scale Hydro

	None	
Electricity Generated	0.00	
Apportioned	0.00	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	DET (150-3)	Issued on Date	30/01/2025
Assessment Reference	DET (150-3)	Prop Type Ref	DET (150-3)
Property	DET (150-3)		

SAP Rating	86 B	DER	12.17	TER	10.22
Environmental	88 B	% DER < TER			-19.08
CO ₂ Emissions (t/year)	1.62	DFEE	42.21	TFEE	44.43
Compliance Check	See BREL	% DFEE < TFEE			5.00
% DPER < TPER	-26.30	DPER	67.71	TPER	53.61

Assessor Details	Mr. Matthew Fitzpatrick	Assessor ID	7601-0001
Client			

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
Which Floor	0	
2.0 Number of Storeys	2	
3.0 Date Built	2025	
3.0 Property Age Band	L	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements	Ground floor:	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	1st Storey:	42.60 m	76.33 m ²	2.50 m
		41.42 m	74.03 m ²	2.70 m

8.0 Living Area	19.96	m ²
-----------------	-------	----------------

9.0 External Walls	Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Gross Area(m ²)	Nett Area (m ²)	Shelter Res	Shelter	Openings	Area Calculation Type
	External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18	60.00	218.34	176.65	0.00	None	41.69	Enter Gross Area

9.2 Internal Walls	Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
	Stud Partitions	Plasterboard on timber frame	9.00	216.92
	Block Partitions	Dense block, plasterboard on dabs	75.00	57.77

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
	Cold Roof	External Plane	Plasterboard, insulated at ceiling level	0.10	9.00	74.03	74.03	None	0.00	Enter Gross Area	0.00
	Bay Roof	External Plane	Plasterboard, insulated at ceiling level	0.10	9.00	2.26	2.26	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	74.03

11.0 Heat Loss Floors

Summary for Input Data



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	0.12	None	0.00	75.00	76.33

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	74.03

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Patio Doors	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Entrance Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front W	Windows	External Wall 1	North	7.61	0
Front D	Entrance Door	External Wall 1	North	2.14	0
Rear W	Windows	External Wall 1	South	4.95	0
Rear Patio Door	Patio Doors	External Wall 1	South	5.22	0
L Side W	Windows	External Wall 1	West	5.63	0
Bay W RS	Windows	External Wall 1	North East	2.55	0
Bay W LS	Windows	External Wall 1	North West	2.55	0
Side Patio Door	Patio Doors	External Wall 1	West	6.30	0
R Side W	Windows	External Wall 1	East	4.73	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)	Non Gov Approved Schemes	28.35	0.05	0.05 HiTherm	No
E3 Sill	Non Gov Approved Schemes	27.33	0.02	0.02 RCD	No
E4 Jamb	Non Gov Approved Schemes	69.00	0.02	0.02 RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	42.60	0.05	0.05 RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	41.42	0.00	0.00 RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	14.80	0.04	0.04 RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	32.40	0.05	0.05 RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	36.00	0.04	0.04 RCD	No
E24 Eaves (insulation at ceiling level - inverted)	Table K1 - Default	4.61	0.15	0.15	No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	15.20	-0.09	-0.09 RCD	No

Description	To be calculated
-------------	---

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	500787
Duct Type	Rigid
Wet Rooms	5
SFP from Installer Commissioning Certificate	No

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.13	In Room Fan Kitchen	1
0.11	In Room Fan Other Wet Room	4
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other Wet Room	0
0.10	Through Wall Fan Kitchen	0
0.10	Through Wall Fan Other Wet Room	0

20.0 Fans, Open Fireplaces, Flues

Summary for Input Data

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

21.0 Fixed Cooling System	No				
----------------------------------	---------------------------------	--	--	--	--

22.0 Pressure Testing	Yes				
Designed AP ₅₀	4.65	m³/(h.m²) @ 50 Pa			
Property Tested?	Yes				
Test Method	Blower Door				

22.0 Lighting	No				
No Fixed Lighting	No				
	Name Lighting 1	Efficacy 75.00	Power 10.00	Capacity 750.00	Count 25

24.0 Main Heating 1	Database				
Percentage of Heat	100.00 %				
Database Ref. No.	17929				
Fuel Type	Mains gas				
SAP Code	0				
Model Name	LOGIC COMBI				
Manufacturer	Ideal Boilers				
Controls SAP Code	2110				
Delayed Start Stat	Yes				
Burner Control	Modulating				
HETAS approved System	No				
Flue Type	Balanced				
Fan Assisted Flue	Yes				
Is MHS Pumped	Pump in heated space				
Heating Pump Age	2013 or later				
Heat Emitter	Radiators				
Flow Temperature	Enter value				
Flow Temperature Value	45.00				
Boiler Interlock	Yes				
Combi boiler type	Standard Combi				

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				
-------------------------------	-----------------------------------	--	--	--	--

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
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
Bathroom	Combi boiler or unvented hot water system	8.00		No	Instantaneous System 1
En-suite	Combi boiler or unvented hot water system	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	None			
Cylinder Stat	Yes			
Cylinder In Heated Space	Yes			
Independent Time Control	Yes			
Insulation Type	Measured Loss			
Insulation Thickness Type	Other			
Insulation Thickness	15			
Cylinder Volume	210.00		L	
Loss	1.61		kWh/day	
Pipes insulation	Fully insulated primary pipework			
In Airing Cupboard	No			

31.0 Thermal Store

Thermal Store Pipework	None
	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	DET (197-5)	Issued on Date	30/01/2025
Assessment Reference	DET (197-5)	Prop Type Ref	DET (197-5)
Property	DET (197-5)		

SAP Rating	87 B	DER	11.15	TER	8.84
Environmental	88 B	% DER < TER			-26.13
CO ₂ Emissions (t/year)	1.95	DFEE	39.91	TFEE	42.41
Compliance Check	See BREL	% DFEE < TFEE			5.89
% DPER < TPER	-32.90	DPER	62.04	TPER	46.68

Assessor Details	Mr. Matthew Fitzpatrick	Assessor ID	7601-0001
Client			

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
Which Floor	0	
2.0 Number of Storeys	2	
3.0 Date Built	2025	
3.0 Property Age Band	L	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements	Ground floor:	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	1st Storey:	49.49 m	104.07 m ²	2.50 m
		42.39 m	93.03 m ²	2.70 m

8.0 Living Area	21.86	m ²
-----------------	-------	----------------

9.0 External Walls	Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Gross Area(m ²)	Nett Area (m ²)	Shelter Res	Shelter	Openings	Area Calculation Type
	External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18	60.00	238.19	201.39	0.00	None	36.80	Enter Gross Area

9.2 Internal Walls	Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
	Stud Partitions	Plasterboard on timber frame	9.00	273.00
	Block Partitions	Dense block, plasterboard on dabs	75.00	75.93

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
	Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.10	9.00	93.03	93.03	None	0.00	Enter Gross Area	0.00
	Bay Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.10	9.00	2.27	2.27	None	0.00	Enter Gross Area	0.00
	Flat Roof	External Flat Roof	Plasterboard, insulated flat roof	0.15	9.00	9.33	7.64	None	0.00	Enter Gross Area	1.69

10.2 Internal Ceilings	Description	Storey	Construction	Area (m ²)
	Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	93.03

Summary for Input Data

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	104.07

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	93.03

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Patio Doors	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Entrance Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.40
Roof Lights	Manufacturer	Roof Light	Double Low-E Soft 0.1			0.63		0.70	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front W	Windows	External Wall 1	North	7.56	0
Front D	Entrance Door	External Wall 1	North	2.14	0
Rear W	Windows	External Wall 1	South	5.87	0
Rear Patio Door	Patio Doors	External Wall 1	South	6.30	0
L Side W	Windows	External Wall 1	West	2.20	0
Bay W RS	Windows	External Wall 1	North East	3.15	0
Bay W LS	Windows	External Wall 1	North West	3.15	0
R Side W	Windows	External Wall 1	East	4.31	0
Rear D	Entrance Door	External Wall 1	South	2.12	0
Roof Light	Roof Lights	Flat Roof	South	1.69	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)	Non Gov Approved Schemes	24.30	0.05	0.05 HiTherm	No
E3 Sill	Non Gov Approved Schemes	22.27	0.02	0.02 RCD	No
E4 Jamb	Non Gov Approved Schemes	63.00	0.02	0.02 RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	49.49	0.05	0.05 RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	42.39	0.00	0.00 RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	22.92	0.04	0.04 RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	25.27	0.05	0.05 RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	43.70	0.04	0.04 RCD	No
E24 Eaves (insulation at ceiling level - inverted)	Table K1 - Default	7.93	0.15	0.15	No
E17 Corner (inverted - internal area greater than external area)	Non Gov Approved Schemes	22.90	-0.09	-0.09 RCD	No
E14 Flat roof	Table K1 - Default	8.93	0.16	0.16	No
R1 Head of roof window	Table K1 - Default	1.30	0.24	0.24	No
R2 Sill of roof window	Table K1 - Default	1.30	0.24	0.24	No
R3 Jamb of roof window	Table K1 - Default	2.60	0.24	0.24	No

Description	To be calculated
-------------	---

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	500787
Duct Type	Rigid
Wet Rooms	6
SFP from Installer Commissioning Certificate	No

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.13	In Room Fan Kitchen	1
0.11	In Room Fan Other Wet Room	5
0.00	In Duct Fan Kitchen	0

Summary for Input Data



0.00 In Duct Fan Other 0
 0.10 Wet Room
 Through Wall Fan 0
 Kitchen
 0.10 Through Wall Fan 0
 Other Wet Room

20.0 Fans, Open Fireplaces, Flues

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

21.0 Fixed Cooling System

22.0 Pressure Testing

Designed AP₅₀ m³/(h.m²) @ 50 Pa
 Property Tested?
 Test Method

22.0 Lighting

No Fixed Lighting

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	25

24.0 Main Heating 1

Percentage of Heat %
 Database Ref. No.
 Fuel Type
 SAP Code
 Model Name
 Manufacturer
 Controls SAP Code
 Delayed Start Stat
 Burner Control
 HETAS approved System
 Flue Type
 Fan Assisted Flue
 Is MHS Pumped
 Heating Pump Age
 Heat Emitter
 Flow Temperature
 Flow Temperature Value
 Boiler Interlock
 Combi boiler type

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								

Summary for Input Data

Heat source 2 None
Heat source 3 None
Heat source 4 None
Heat source 5 None

27.0 Secondary Heating

None

28.0 Water Heating

Water Heating

Main Heating 1

SAP Code

901

Flue Gas Heat Recovery System

No

Waste Water Heat Recovery Instantaneous System 1

No

Waste Water Heat Recovery Instantaneous System 2

No

Waste Water Heat Recovery Storage System

No

Solar Panel

No

Water use <= 125 litres/person/day

Yes

Immersion Heater

Single

Summer Immersion

No

Cold Water Source

From mains

Bath Count

1

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

Bathroom

Combi boiler or unvented hot water system

8.00

No

Instantaneous System 1

En-suite 1

Combi boiler or unvented hot water system

8.00

No

En-suite 2

Combi boiler or unvented hot water system

8.00

No

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

None

Cylinder Stat

Yes

Cylinder In Heated Space

Yes

Independent Time Control

Yes

Insulation Type

Measured Loss

Insulation Thickness Type

Other

Insulation Thickness

15

Cylinder Volume

210.00

L

Loss

1.61

kWh/day

Pipes insulation

Fully insulated primary pipework

In Airing Cupboard

No

31.0 Thermal Store

None

Thermal Store Pipework

within a single casing

34.0 Small-scale Hydro

None

Electricity Generated

0.00

Apportioned

0.00

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	GF MAIS		Issued on Date	30/01/2025
Assessment Reference	GF MAIS	Prop Type Ref	GF MAIS	
Property	GF MAIS			

SAP Rating	85 B	DER	14.91	TER	14.45
Environmental	90 B	% DER < TER			-3.18
CO ₂ Emissions (t/year)	0.69	DFEE	33.37	TFEE	37.12
Compliance Check	See BREL	% DFEE < TFEE			10.10
% DPER < TPER	-10.48	DPER	84.04	TPER	76.07

Assessor Details	Mr. Matthew Fitzpatrick	Assessor ID	7601-0001
Client			

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

Orientation	North
Property Tenture	ND
Transaction Type	6
Terrain Type	Suburban
1.0 Property Type	Maisonette, Semi-Detached
Position of Flat	Ground-floor flat
Which Floor	1
2.0 Number of Storeys	1
3.0 Date Built	2025
3.0 Property Age Band	L
4.0 Sheltered Sides	2
5.0 Sunlight/Shade	Average or unknown
6.0 Thermal Mass Parameter	Precise calculation
Thermal Mass	0.00
7.0 Electricity Tariff	Standard
Smart electricity meter fitted	Yes
Smart gas meter fitted	Yes

kJ/m²K

7.0 Measurements	Ground floor:	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	1st Storey:	19.32 m	50.62 m ²	2.50 m
		42.39 m	93.03 m ²	2.70 m

8.0 Living Area	19.53	m ²
-----------------	-------	----------------

9.0 External Walls	Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Gross Area(m ²)	Nett Area (m ²)	Shelter Res	Shelter	Openings	Area Calculation Type
	External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18	60.00	48.29	38.99	0.00	None	9.30	Enter Gross Area

9.1 Party Walls	Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Area (m ²)	Shelter Res	Shelter
	Party Wall 1	Filled Cavity with Edge Sealing	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	28.78	0.00	None

9.2 Internal Walls	Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
	Stud Partitions	Plasterboard on timber frame	9.00	93.94

10.1 Party Ceilings	Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
	Party Ceiling 1	Precast concrete planks floor, screed, carpeted	30.00	50.62

10.2 Internal Ceilings	Description	Storey	Construction	Area (m ²)
	Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	93.03

Summary for Input Data

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	50.62

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Patio Doors	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Entrance Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.40
Roof Lights	Manufacturer	Roof Light	Double Low-E Soft 0.1			0.63		0.70	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front W	Windows	External Wall 1	North	3.37	0
Front D	Entrance Door	External Wall 1	North	1.95	0
L Side W	Windows	External Wall 1	West	2.29	0
R Side W	Windows	External Wall 1	East	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)	Non Gov Approved Schemes	6.50	0.05	0.05 HiTherm	No
E3 Sill	Non Gov Approved Schemes	5.57	0.02	0.02 RCD	No
E4 Jamb	Non Gov Approved Schemes	17.10	0.02	0.02 RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	19.32	0.05	0.05 RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	5.00	0.04	0.04 RCD	No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	5.00	-0.09	-0.09 RCD	No
E7 Party floor between dwellings (in blocks of flats)	Non Gov Approved Schemes	19.32	0.04	0.04	No
E18 Party wall between dwellings	Non Gov Approved Schemes	5.00	0.04	0.04	No
E25 Staggered party wall between dwellings	Non Gov Approved Schemes	5.00	0.03	0.03	No
P1 Party wall - Ground floor	Non Gov Approved Schemes	11.51	0.04	0.04 RCD	No
P3 Party wall - Intermediate floor between dwellings (in blocks of flats)	Table K1 - Default	11.51	0.00	0.00	No

Description	To be calculated
-------------	---

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	500787
Duct Type	Rigid
Wet Rooms	2
SFP from Installer Commissioning Certificate	No

19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0

Summary for Input Data

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

21.0 Fixed Cooling System	No
----------------------------------	---------------------------------

22.0 Pressure Testing	Yes	
Designed AP ₅₀	4.65	m ³ /(h.m ²) @ 50 Pa
Property Tested?	Yes	
Test Method	Blower Door	

22.0 Lighting	No				
No Fixed Lighting	No				
	Name	Efficacy	Power	Capacity	Count
	Lighting 1	75.00	10.00	750.00	25

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	17929	
Fuel Type	Mains gas	
SAP Code	0	
Model Name	LOGIC COMBI	
Manufacturer	Ideal Boilers	
Controls SAP Code	2110	
Delayed Start Stat	Yes	
Burner Control	Modulating	
HETAS approved System	No	
Flue Type	Balanced	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	45.00	
Boiler Interlock	Yes	
Combi boiler type	Standard Combi	

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
-------------------------------	-----------------------------------

28.0 Water Heating	
Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No

Summary for Input Data

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
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
Bathroom	Combi boiler or unvented hot water system	8.00		No	Instantaneous System 1

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

	None	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Insulation Thickness Type	Other	
Insulation Thickness	15	
Cylinder Volume	210.00	L
Loss	1.61	kWh/day
Pipes insulation	Fully insulated primary pipework	
In Airing Cupboard	No	

31.0 Thermal Store

	None	
Thermal Store Pipework	within a single casing	

34.0 Small-scale Hydro

	None	
Electricity Generated	0.00	
Apportioned	0.00	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	SEMI (81-4)	Issued on Date	30/01/2025
Assessment Reference	SEMI (81-4)	Prop Type Ref	SEMI (81-4)
Property	SEMI (81-4)		

SAP Rating	85 B	DER	12.82	TER	11.49
Environmental	89 B	% DER < TER			-11.58
CO ₂ Emissions (t/year)	0.95	DFEE	32.63	TFEE	35.40
Compliance Check	See BREL	% DFEE < TFEE			7.83
% DPER < TPER	-20.02	DPER	72.08	TPER	60.06

Assessor Details	Mr. Matthew Fitzpatrick	Assessor ID	7601-0001
Client			

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Semi-Detached	
Which Floor	0	
2.0 Number of Storeys	2	
3.0 Date Built	2025	
3.0 Property Age Band	L	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements	Ground floor:	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	1st Storey:	18.16 m	40.68 m ²	2.50 m
		18.16 m	40.68 m ²	2.70 m

8.0 Living Area	13.64	m ²
-----------------	-------	----------------

9.0 External Walls	Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Gross Area(m ²)	Nett Area (m ²)	Shelter Res	Shelter	Openings	Area Calculation Type
	External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18	60.00	94.42	80.87	0.00	None	13.55	Enter Gross Area

9.1 Party Walls	Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Area (m ²)	Shelter Res	Shelter
	Party Wall 1	Filled Cavity with Edge Sealing	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	41.85	0.00	None

9.2 Internal Walls	Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
	Stud Partitions	Plasterboard on timber frame	9.00	165.97

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
	Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.10	9.00	40.68	40.68	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	40.68

Summary for Input Data

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	40.68

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	40.68

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Patio Doors	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Entrance Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front W	Windows	External Wall 1	North	3.87	0
Front D	Entrance Door	External Wall 1	North	2.14	0
Rear W	Windows	External Wall 1	South	3.18	0
Rear Patio Door	Patio Doors	External Wall 1	South	3.15	0
R Side W	Windows	External Wall 1	East	1.21	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)	Non Gov Approved Schemes	9.24	0.05	0.05 HiTherm	No
E3 Sill	Non Gov Approved Schemes	8.22	0.02	0.02 RCD	No
E4 Jamb	Non Gov Approved Schemes	25.20	0.02	0.02 RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	18.16	0.05	0.05 RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	18.16	0.00	0.00 RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	8.05	0.04	0.04 RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	10.11	0.05	0.05 RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	10.40	0.04	0.04 RCD	No
E18 Party wall between dwellings	Non Gov Approved Schemes	10.40	0.04	0.04 RCD	No
P1 Party wall - Ground floor	Non Gov Approved Schemes	8.05	0.04	0.04 RCD	No
P2 Party wall - Intermediate floor within a dwelling	Table K1 - Default	8.05	0.00	0.00	No
P4 Party wall - Roof (insulation at ceiling level)	Non Gov Approved Schemes	8.05	0.03	0.03 RCD	No

Description	To be calculated
-------------	---

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	500787
Duct Type	Rigid
Wet Rooms	3
SFP from Installer Commissioning Certificate	No

19.1 Mechanical extract ventilation - Decentralised

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

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	4.65	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	75.00	10.00	750.00	25

24.0 Main Heating 1

Percentage of Heat	100.00	%
Database Ref. No.	17929	
Fuel Type	Mains gas	
SAP Code	0	
Model Name	LOGIC COMBI	
Manufacturer	Ideal Boilers	
Controls SAP Code	2110	
Delayed Start Stat	Yes	
Burner Control	Modulating	
HETAS approved System	No	
Flue Type	Balanced	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	45.00	
Boiler Interlock	Yes	
Combi boiler type	Standard Combi	

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
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
Bathroom	Combi boiler or unvented hot water system	8.00		No	Instantaneous System 1

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	None				
Cylinder Stat	Yes				
Cylinder In Heated Space	Yes				
Independent Time Control	Yes				
Insulation Type	Measured Loss				
Insulation Thickness Type	Other				
Insulation Thickness	15				
Cylinder Volume	210.00			L	
Loss	1.61			kWh/day	
Pipes insulation	Fully insulated primary pipework				
In Airing Cupboard	No				

31.0 Thermal Store

Thermal Store Pipework	within a single casing
------------------------	------------------------

34.0 Small-scale Hydro

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

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data



Property Reference	SEMI (132-8)	Issued on Date	30/01/2025
Assessment Reference	SEMI (132-8)	Prop Type Ref	SEMI (132-8)
Property	SEMI (132-8)		

SAP Rating	87 B	DER	10.90	TER	8.95
Environmental	89 B	% DER < TER			-21.79
CO ₂ Emissions (t/year)	1.3	DFEE	33.10	TFEE	35.81
Compliance Check	See BREL	% DFEE < TFEE			7.57
% DPER < TPER	-30.67	DPER	61.09	TPER	46.75

Assessor Details	Mr. Matthew Fitzpatrick	Assessor ID	7601-0001
Client			

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

Orientation	North
Property Tenture	ND
Transaction Type	6
Terrain Type	Suburban
1.0 Property Type	House, Semi-Detached
Which Floor	0
2.0 Number of Storeys	2
3.0 Date Built	2025
3.0 Property Age Band	L
4.0 Sheltered Sides	2
5.0 Sunlight/Shade	Average or unknown
6.0 Thermal Mass Parameter	Precise calculation
Thermal Mass	0.00 kJ/m ² K
7.0 Electricity Tariff	Standard
Smart electricity meter fitted	Yes
Smart gas meter fitted	Yes

7.0 Measurements	Ground floor:	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	1st Storey:	24.96 m	70.18 m ²	2.50 m
		22.47 m	62.62 m ²	2.70 m

8.0 Living Area	13.59 m ²
-----------------	----------------------

9.0 External Walls	Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Gross Area(m ²)	Nett Area (m ²)	Shelter Res	Shelter	Openings	Area Calculation Type
	External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18	60.00	123.06	103.43	0.00	None	19.63	Enter Gross Area

9.1 Party Walls	Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Area (m ²)	Shelter Res	Shelter
	Party Wall 1	Filled Cavity with Edge Sealing	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	59.62	0.00	None

9.2 Internal Walls	Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
	Stud Partitions	Plasterboard on timber frame	9.00	153.47
	Block Partitions	Dense block, plasterboard on dabs	75.00	61.65

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
	Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.10	9.00	62.62	62.62	None	0.00	Enter Gross Area	0.00
	Sloping Roof	External Slope Roof	Plasterboard, insulated slope	0.15	9.00	8.60	7.28	None	0.00	Enter Gross Area	1.32

Summary for Input Data



10.2 Internal Ceilings

Description	Storey	Construction	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	62.62

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	0.12	None	0.00	75.00	70.18

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	62.62

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Patio Doors	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Entrance Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.40
Roof Lights	Manufacturer	Roof Light	Double Low-E Soft 0.1			0.63		0.70	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front W	Windows	External Wall 1	North	7.37	0
Front D	Entrance Door	External Wall 1	North	1.97	0
Rear W	Windows	External Wall 1	South	4.12	0
Rear Patio Door	Patio Doors	External Wall 1	South	5.04	0
R Side W	Windows	External Wall 1	East	1.12	0
Roof Light	Roof Lights	Sloping Roof	South	1.32	23

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)	Non Gov Approved Schemes	13.70	0.05	0.05 HiTherm	No
E3 Sill	Non Gov Approved Schemes	12.76	0.02	0.02 RCD	No
E4 Jamb	Non Gov Approved Schemes	30.60	0.02	0.02 RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	24.96	0.05	0.05 RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	22.47	0.00	0.00 RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	10.27	0.04	0.04 RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	12.20	0.05	0.05 RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	12.90	0.04	0.04 RCD	No
E18 Party wall between dwellings	Non Gov Approved Schemes	10.40	0.04	0.04 RCD	No
P1 Party wall - Ground floor	Non Gov Approved Schemes	12.76	0.04	0.04 RCD	No
P2 Party wall - Intermediate floor within a dwelling	Table K1 - Default	10.27	0.00	0.00	No
P4 Party wall - Roof (insulation at ceiling level)	Non Gov Approved Schemes	10.27	0.03	0.03 RCD	No
E24 Eaves (insulation at ceiling level - inverted)	Table K1 - Default	3.10	0.15	0.15	No
E11 Eaves (insulation at rafter level)	Non Gov Approved Schemes	3.10	0.02	0.02 RCD	No
E13 Gable (insulation at rafter level)	Non Gov Approved Schemes	2.55	0.04	0.04 RCD	No
E17 Corner (inverted - internal area greater than external area)	Non Gov Approved Schemes	2.50	-0.09	-0.09 RCD	No
P5 Party wall - Roof (insulation at rafter level)	Non Gov Approved Schemes	2.78	0.04	0.04	No
R1 Head of roof window	Table K1 - Default	1.34	0.24	0.24	No
R2 Sill of roof window	Table K1 - Default	1.34	0.24	0.24	No
R3 Jamb of roof window	Table K1 - Default	1.97	0.24	0.24	No

Description	To be calculated
-------------	------------------

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	500787
Duct Type	Rigid
Wet Rooms	5
SFP from Installer Commissioning Certificate	No

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
-----	---------------	-------

Summary for Input Data

0.13	In Room Fan	1
	Kitchen	
0.11	In Room Fan Other	4
	Wet Room	
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other	0
	Wet Room	
0.10	Through Wall Fan	0
	Kitchen	
0.10	Through Wall Fan	0
	Other Wet Room	

20.0 Fans, Open Fireplaces, Flues

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

21.0 Fixed Cooling System

22.0 Pressure Testing

Designed AP ₅₀	4.65	m ² /(h.m ²) @ 50 Pa
Property Tested?	Yes	
Test Method	Blower Door	

22.0 Lighting

No Fixed Lighting

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	25

24.0 Main Heating 1

Database	Database	
Percentage of Heat	100.00	%
Database Ref. No.	17929	
Fuel Type	Mains gas	
SAP Code	0	
Model Name	LOGIC COMBI	
Manufacturer	Ideal Boilers	
Controls SAP Code	2110	
Delayed Start Stat	Yes	
Burner Control	Modulating	
HETAS approved System	No	
Flue Type	Balanced	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	45.00	
Boiler Interlock	Yes	
Combi boiler type	Standard Combi	

25.0 Main Heating 2

26.0 Heat Networks

Summary for Input Data

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
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
Bathroom	Combi boiler or unvented hot water system	8.00		No	Instantaneous System 1
En-suite	Combi boiler or unvented hot water system	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

None	
Cylinder Stat	Yes
Cylinder In Heated Space	Yes
Independent Time Control	Yes
Insulation Type	Measured Loss
Insulation Thickness Type	Other
Insulation Thickness	15
Cylinder Volume	210.00
Loss	1.61
Pipes insulation	Fully insulated primary pipework
In Airing Cupboard	No

31.0 Thermal Store

Thermal Store Pipework	within a single casing

34.0 Small-scale Hydro

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

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

Property Reference	TER (91-6)		Issued on Date	30/01/2025
Assessment Reference	TER (91-6)	Prop Type Ref	TER (91-6)	
Property	TER (91-6)			

SAP Rating	86 B	DER	12.29	TER	10.80
Environmental	89 B	% DER < TER			-13.80
CO ₂ Emissions (t/year)	1.02	DFEE	32.23	TFEE	34.94
Compliance Check	See BREL	% DFEE < TFEE			7.75
% DPER < TPER	-22.62	DPER	69.09	TPER	56.34

Assessor Details	Mr. Matthew Fitzpatrick	Assessor ID	7601-0001
Client			

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, End-Terrace	
Which Floor	0	
2.0 Number of Storeys	2	
3.0 Date Built	2025	
3.0 Property Age Band	L	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	139.55	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements		Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	Ground floor:	19.18 m	45.83 m ²	2.50 m
	1st Storey:	19.18 m	45.83 m ²	2.70 m

8.0 Living Area	20.37	m ²
-----------------	-------	----------------

Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Gross Area(m ²)	Nett Area (m ²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18	60.00	99.72	84.66	0.00	None	15.06	Enter Gross 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	47.11	0.00	None

Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
Stud Partitions	Plasterboard on timber frame	9.00	186.89

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
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.10	9.00	45.83	45.83	None	0.00	Enter Gross Area	0.00

Description	Storey	Construction	Area (m ²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	45.83

Summary for Input Data



11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	45.83

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	45.83

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Patio Doors	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Entrance Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front W	Windows	External Wall 1	North	4.28	0
Front D	Entrance Door	External Wall 1	North	2.14	0
Rear W	Windows	External Wall 1	South	4.28	0
Rear Patio Door	Patio Doors	External Wall 1	South	3.15	0
R Side W	Windows	External Wall 1	East	1.21	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)	Non Gov Approved Schemes	10.49	0.05	0.05 HiTherm	No
E3 Sill	Non Gov Approved Schemes	9.47	0.02	0.02 RCD	No
E4 Jamb	Non Gov Approved Schemes	27.60	0.02	0.02 RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	19.18	0.05	0.05 RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	19.18	0.00	0.00 RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	9.06	0.04	0.04 RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	10.12	0.05	0.05 RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	10.40	0.04	0.04 RCD	No
E18 Party wall between dwellings	Non Gov Approved Schemes	10.40	0.04	0.04 RCD	No
P1 Party wall - Ground floor	Non Gov Approved Schemes	9.06	0.04	0.04 RCD	No
P2 Party wall - Intermediate floor within a dwelling	Table K1 - Default	9.06	0.00	0.00	No
P4 Party wall - Roof (insulation at ceiling level)	Non Gov Approved Schemes	9.06	0.03	0.03 RCD	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
0.13	In Room Fan Kitchen	1
0.11	In Room Fan Other Wet Room	2
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other Wet Room	0
0.10	Through Wall Fan Kitchen	0
0.10	Through Wall Fan Other Wet Room	0

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 AP₅₀ m³/(h.m²) @ 50 Pa

Property Tested?

Test Method

22.0 Lighting

No Fixed Lighting

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	25

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

Delayed Start Stat

Burner Control

HETAS approved System

Flue Type

Fan Assisted Flue

Is MHS Pumped

Heating Pump Age

Heat Emitter

Flow Temperature

Flow Temperature Value

Boiler Interlock

Combi boiler type

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									

Summary for Input Data

Heat source 5 None

27.0 Secondary Heating

None

28.0 Water Heating

Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	No
Waste Water Heat Recovery Instantaneous System 2	No
Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Immersion Heater	Single
Summer Immersion	No
Cold Water Source	From mains
Bath Count	1
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
Bathroom	Combi boiler or unvented hot water system	8.00		No	Instantaneous System 1

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

	None	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Insulation Thickness Type	Other	
Insulation Thickness	15	
Cylinder Volume	210.00	L
Loss	1.61	kWh/day
Pipes insulation	Fully insulated primary pipework	
In Airing Cupboard	No	

31.0 Thermal Store

	None
Thermal Store Pipework	within a single casing

34.0 Small-scale Hydro

	None	
Electricity Generated	0.00	
Apportioned	0.00	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	TER (94-6)		Issued on Date	30/01/2025
Assessment Reference	TER (94-6)	Prop Type Ref	TER (94-6)	
Property	TER (94-6)			

SAP Rating	86 B	DER	12.54	TER	10.91
Environmental	89 B	% DER < TER			-14.94
CO ₂ Emissions (t/year)	1.08	DFEE	33.44	TFEE	35.83
Compliance Check	See BREL	% DFEE < TFEE			6.67
% DPER < TPER	-23.54	DPER	70.48	TPER	57.05

Assessor Details	Mr. Matthew Fitzpatrick	Assessor ID	7601-0001
Client			

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Semi-Detached	
Which Floor	0	
2.0 Number of Storeys	2	
3.0 Date Built	2025	
3.0 Property Age Band	L	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements		Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	Ground floor:	19.47 m	47.31 m ²	2.50 m
	1st Storey:	19.47 m	47.31 m ²	2.70 m

8.0 Living Area	21.78	m ²
-----------------	-------	----------------

Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Gross Area(m ²)	Nett Area (m ²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18	60.00	101.24	86.79	0.00	None	14.45	Enter Gross Area

Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Area (m ²)	Shelter Res	Shelter
Party Wall 1	Filled Cavity with Edge Sealing	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	48.63	0.00	None

Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
Stud Partitions	Plasterboard on timber frame	9.00	186.71

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
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.10	9.00	47.31	47.31	None	0.00	Enter Gross Area	0.00

Description	Storey	Construction	Area (m ²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	47.31

Summary for Input Data

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	47.31

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	47.31

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Patio Doors	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Entrance Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front W	Windows	External Wall 1	North	4.28	0
Front D	Entrance Door	External Wall 1	North	2.14	0
Rear W	Windows	External Wall 1	South	4.68	0
Rear D	Entrance Door	External Wall 1	South	2.14	0
R Side W	Windows	External Wall 1	East	1.21	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)	Non Gov Approved Schemes	10.35	0.05	0.05 HiTherm	No
E3 Sill	Non Gov Approved Schemes	8.31	0.02	0.02 RCD	No
E4 Jamb	Non Gov Approved Schemes	27.60	0.02	0.02 RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	19.47	0.05	0.05 RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	19.47	0.00	0.00 RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	9.35	0.04	0.04 RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	10.12	0.05	0.05 RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	10.40	0.04	0.04 RCD	No
E18 Party wall between dwellings	Non Gov Approved Schemes	10.40	0.04	0.04 RCD	No
P1 Party wall - Ground floor	Non Gov Approved Schemes	9.35	0.04	0.04 RCD	No
P2 Party wall - Intermediate floor within a dwelling	Table K1 - Default	9.35	0.00	0.00	No
P4 Party wall - Roof (insulation at ceiling level)	Non Gov Approved Schemes	9.35	0.03	0.03 RCD	No

Description	To be calculated
-------------	---

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	500787
Duct Type	Rigid
Wet Rooms	3
SFP from Installer Commissioning Certificate	No

19.1 Mechanical extract ventilation - Decentralised

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

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

22.0 Lighting
No Fixed Lighting

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	25

24.0 Main Heating 1

Percentage of Heat	100.00	%
Database Ref. No.	17929	
Fuel Type	Mains gas	
SAP Code	0	
Model Name	LOGIC COMBI	
Manufacturer	Ideal Boilers	
Controls SAP Code	2110	
Delayed Start Stat	Yes	
Burner Control	Modulating	
HETAS approved System	No	
Flue Type	Balanced	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	45.00	
Boiler Interlock	Yes	
Combi boiler type	Standard Combi	

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
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
Bathroom	Combi boiler or unvented hot water system	8.00		No	Instantaneous System 1

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	None				
Cylinder Stat	Yes				
Cylinder In Heated Space	Yes				
Independent Time Control	Yes				
Insulation Type	Measured Loss				
Insulation Thickness Type	Other				
Insulation Thickness	15				
Cylinder Volume	210.00			L	
Loss	1.61			kWh/day	
Pipes insulation	Fully insulated primary pipework				
In Airing Cupboard	No				

31.0 Thermal Store

Thermal Store Pipework	within a single casing
------------------------	------------------------

34.0 Small-scale Hydro

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

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

Property Reference	TF MAIS		Issued on Date	30/01/2025
Assessment Reference	TF MAIS	Prop Type Ref	TF MAIS	
Property	TF MAIS			

SAP Rating	85 B	DER	14.23	TER	13.23
Environmental	89 B	% DER < TER			-7.56
CO ₂ Emissions (t/year)	0.83	DFEE	33.52	TFEE	36.64
Compliance Check	See BREL	% DFEE < TFEE			8.52
% DPER < TPER	-15.31	DPER	80.14	TPER	69.50

Assessor Details	Mr. Matthew Fitzpatrick	Assessor ID	7601-0001
Client			

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

Orientation	North
Property Tenture	ND
Transaction Type	6
Terrain Type	Suburban
1.0 Property Type	Maisonette, Semi-Detached
Position of Flat	Top-floor flat
Which Floor	2
2.0 Number of Storeys	2
3.0 Date Built	2025
3.0 Property Age Band	L
4.0 Sheltered Sides	2
5.0 Sunlight/Shade	Average or unknown
6.0 Thermal Mass Parameter	Precise calculation
Thermal Mass	0.00
7.0 Electricity Tariff	Standard
Smart electricity meter fitted	Yes
Smart gas meter fitted	Yes

kJ/m²K

7.0 Measurements	Ground floor:	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	1st Storey:	4.74 m	6.52 m ²	2.50 m
		21.45 m	56.57 m ²	2.70 m

8.0 Living Area	25.80	m ²
-----------------	-------	----------------

9.0 External Walls	Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Gross Area(m ²)	Nett Area (m ²)	Shelter Res	Shelter	Openings	Area Calculation Type
	External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18	60.00	69.78	60.64	0.00	None	9.14	Enter Gross Area

9.1 Party Walls	Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Area (m ²)	Shelter Res	Shelter
	Party Wall 1	Filled Cavity with Edge Sealing	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	48.96	0.00	None

9.2 Internal Walls	Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
	Stud Partitions	Plasterboard on timber frame	9.00	108.63

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	56.57	56.57	None	0.00	Enter Gross Area	0.00
	Low Level Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.10	9.00	2.64	2.64	None	0.00	Enter Gross Area	0.00

Summary for Input Data



10.2 Internal Ceilings

Description	Storey	Construction	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	3.88

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	0.12	None	0.00	75.00	6.52

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	52.69

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Patio Doors	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Entrance Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.40
Roof Lights	Manufacturer	Roof Light	Double Low-E Soft 0.1			0.63		0.70	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front W	Windows	External Wall 1	North	1.50	0
Front D	Entrance Door	External Wall 1	North	1.95	0
L Side W	Windows	External Wall 1	West	3.58	0
Rear W	Windows	External Wall 1	South	2.10	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)	Non Gov Approved Schemes	7.06	0.05	0.05 HiTherm	No
E3 Sill	Non Gov Approved Schemes	6.13	0.02	0.02 RCD	No
E4 Jamb	Non Gov Approved Schemes	18.00	0.02	0.02 RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	4.74	0.05	0.05 RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	10.40	0.04	0.04 RCD	No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	2.50	-0.09	-0.09 RCD	No
E7 Party floor between dwellings (in blocks of flats)	Non Gov Approved Schemes	21.45	0.04	0.04	No
E18 Party wall between dwellings	Non Gov Approved Schemes	5.20	0.04	0.04 RCD	No
E25 Staggered party wall between dwellings	Non Gov Approved Schemes	7.50	0.03	0.03 RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	13.91	0.05	0.05 RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	12.26	0.04	0.04 RCD	No
P1 Party wall - Ground floor	Non Gov Approved Schemes	9.94	0.04	0.04 RCD	No
P3 Party wall - Intermediate floor between dwellings (in blocks of flats)	Table K1 - Default	9.94	0.00	0.00	No
P2 Party wall - Intermediate floor within a dwelling	Table K1 - Default	21.45	0.00	0.00	No
P4 Party wall - Roof (insulation at ceiling level)	Non Gov Approved Schemes	9.35	0.03	0.03 RCD	No

Description	To be calculated
-------------	---

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	500787
Duct Type	Rigid
Wet Rooms	2
SFP from Installer Commissioning Certificate	No

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.13	In Room Fan Kitchen	1
0.11	In Room Fan Other Wet Room	1
0.00	In Duct Fan Kitchen	0

Summary for Input Data



0.00 In Duct Fan Other 0
 0.10 Wet Room
 Through Wall Fan 0
 Kitchen
 0.10 Through Wall Fan 0
 Other Wet Room

20.0 Fans, Open Fireplaces, Flues

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

21.0 Fixed Cooling System

22.0 Pressure Testing

Designed AP₅₀ m³/(h.m²) @ 50 Pa
 Property Tested?
 Test Method

22.0 Lighting

No Fixed Lighting

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	25

24.0 Main Heating 1

Percentage of Heat %
 Database Ref. No.
 Fuel Type
 SAP Code
 Model Name
 Manufacturer
 Controls SAP Code
 Delayed Start Stat
 Burner Control
 HETAS approved System
 Flue Type
 Fan Assisted Flue
 Is MHS Pumped
 Heating Pump Age
 Heat Emitter
 Flow Temperature
 Flow Temperature Value
 Boiler Interlock
 Combi boiler type

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								

Summary for Input Data

Heat source 2 None
Heat source 3 None
Heat source 4 None
Heat source 5 None

27.0 Secondary Heating

None

28.0 Water Heating

Water Heating Main Heating 1

SAP Code 901

Flue Gas Heat Recovery System No

Waste Water Heat Recovery Instantaneous System 1 No

Waste Water Heat Recovery Instantaneous System 2 No

Waste Water Heat Recovery Storage System No

Solar Panel No

Water use <= 125 litres/person/day Yes

Immersion Heater Single

Summer Immersion No

Cold Water Source From mains

Bath Count 1

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
Bathroom	Combi boiler or unvented hot water system	8.00		No	Instantaneous System 1

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

Cylinder Stat None

Cylinder In Heated Space Yes

Independent Time Control Yes

Insulation Type Measured Loss

Insulation Thickness Type Other

Insulation Thickness 15

Cylinder Volume 210.00 L

Loss 1.61 kWh/day

Pipes insulation Fully insulated primary pipework

In Airing Cupboard No

31.0 Thermal Store

Thermal Store Pipework None

within a single casing

34.0 Small-scale Hydro

Electricity Generated None

Apportioned 0.00

Connected to dwelling's electricity meter 0.00 kWh/Year

Electricity Generation Yes

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

14.4 APPENDIX D: SAMPLE SAP OUTPUT SHEETS (BE GREEN)

Summary for Input Data

Property Reference	DET (112-6)	Issued on Date	29/01/2025
Assessment Reference	DET (112-6)	Prop Type Ref	DET (112-6)
Property	DET (112-6)		

SAP Rating	83 B	DER	3.78	TER	10.70
Environmental	96 A	% DER < TER			64.67
CO ₂ Emissions (t/year)	0.38	DFEE	38.58	TFEE	40.67
Compliance Check	See BREL	% DFEE < TFEE			5.14
% DPER < TPER	29.54	DPER	39.35	TPER	55.85

Assessor Details	Mr. Matthew Fitzpatrick	Assessor ID	7601-0001
Client			

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
Which Floor	0	
2.0 Number of Storeys	2	
3.0 Date Built	2025	
3.0 Property Age Band	L	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	182.91	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements	Ground floor:	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	1st Storey:	30.67 m	56.30 m ²	2.50 m
		30.67 m	56.30 m ²	2.70 m

8.0 Living Area	15.15	m ²
-----------------	-------	----------------

9.0 External Walls	Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Gross Area(m ²)	Nett Area (m ²)	Shelter Res	Shelter	Openings	Area Calculation Type
	External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18	60.00	159.46	133.27	0.00	None	26.19	Enter Gross Area

9.2 Internal Walls	Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
	Stud Partitions	Plasterboard on timber frame	9.00	180.87
	Block Partitions	Dense block, plasterboard on dabs	75.00	62.95

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
	Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.10	9.00	56.30	56.30	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	56.30

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)
	Heatloss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	56.30

Summary for Input Data

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	56.30

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Patio Doors	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Entrance Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front W	Windows	External Wall 1	North	9.83	0
Front D	Entrance Door	External Wall 1	North	2.14	0
Rear W	Windows	External Wall 1	South	6.85	0
Rear Patio Door	Patio Doors	External Wall 1	South	5.22	0
Rear D	Entrance Door	External Wall 1	South	2.14	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)	Non Gov Approved Schemes	18.35	0.05	0.05 HiTherm	No
E3 Sill	Non Gov Approved Schemes	16.31	0.02	0.02 RCD	No
E4 Jamb	Non Gov Approved Schemes	33.90	0.02	0.02 RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	30.67	0.05	0.05 RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	30.67	0.00	0.00 RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	30.67	0.05	0.05 RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	20.80	0.04	0.04 RCD	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	500787
Duct Type	Rigid
Wet Rooms	5
SFP from Installer Commissioning Certificate	No

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.13	In Room Fan Kitchen	1
0.11	In Room Fan Other Wet Room	4
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other Wet Room	0
0.10	Through Wall Fan Kitchen	0
0.10	Through Wall Fan Other Wet Room	0

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

Summary for Input Data

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

22.0 Lighting	No				
No Fixed Lighting	No				
	Name	Efficacy	Power	Capacity	Count
	Lighting 1	75.00	10.00	750.00	25

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	104573	
Fuel Type	Electricity	
SAP Code	0	
In Winter	232.24	
In Summer	270.86	
Model Name	Ecodan 5.0 kW	
Manufacturer	Mitsubishi Electric Europe B.V.	
System Type	Heat Pump	
Controls SAP Code	2207	
Delayed Start Stat	Yes	
Burner Control	Modulating	
HETAS approved System	No	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators and Underfloor	
Underfloor Heating	Yes - Pipes in thin screed	
Flow Temperature	Enter value	
Flow Temperature Value	45.00	

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
-------------------------------	-----------------------------------

28.0 Water Heating	Main Heating 1
Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	No
Waste Water Heat Recovery Instantaneous System 2	No

Summary for Input Data

Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Immersion Heater	Single
Summer Immersion	No
Cold Water Source	From mains
Bath Count	1
Supplementary Immersion	No
Immersion Only Heating Hot Water	No

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Bathroom	Combi boiler or unvented hot water system	8.00		No	Instantaneous System 1
En-suite	Combi boiler or unvented hot water system	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Hot Water Cylinder				
Cylinder Stat	Yes				
Cylinder In Heated Space	Yes				
Independent Time Control	Yes				
Insulation Type	Measured Loss				
Insulation Thickness Type	Other				
Insulation Thickness	15				
Cylinder Volume	210.00			L	
Loss	1.53			kWh/day	
Pipes insulation	Fully insulated primary pipework				
In Airing Cupboard	No				

31.0 Thermal Store

Thermal Store Pipework	None
	within a single casing

34.0 Small-scale Hydro

Electricity Generated	None											
Apportioned	0.00											
Connected to dwelling's electricity meter	0.00											
Electricity Generation	Yes											
	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	DET (123-1)	Issued on Date	29/01/2025
Assessment Reference	DET (123-1)	Prop Type Ref	DET (123-1)
Property	DET (123-1)		

SAP Rating	84 B	DER	3.59	TER	10.09
Environmental	97 A	% DER < TER			64.42
CO ₂ Emissions (t/year)	0.4	DFEE	36.53	TFEE	39.61
Compliance Check	See BREL	% DFEE < TFEE			7.77
% DPER < TPER	29.15	DPER	37.37	TPER	52.74

Assessor Details	Mr. Matthew Fitzpatrick	Assessor ID	7601-0001
Client			

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
Which Floor	0	
2.0 Number of Storeys	2	
3.0 Date Built	2025	
3.0 Property Age Band	L	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	171.03	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements	Ground floor:	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	1st Storey:	34.19 m	62.22 m ²	2.50 m
		32.55 m	60.94 m ²	2.70 m

8.0 Living Area	16.56	m ²
-----------------	-------	----------------

9.0 External Walls	Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Gross Area(m ²)	Nett Area (m ²)	Shelter Res	Shelter	Openings	Area Calculation Type
	External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18	60.00	173.37	153.13	0.00	None	20.24	Enter Gross Area

9.2 Internal Walls	Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
	Stud Partitions	Plasterboard on timber frame	9.00	194.10
	Block Partitions	Dense block, plasterboard on dabs	75.00	43.45

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
	Cold Roof	External Plane	Plasterboard, insulated at ceiling level	0.10	9.00	60.94	60.94	None	0.00	Enter Gross Area	0.00
	Bay Roof	External Plane	Plasterboard, insulated at ceiling level	0.10	9.00	1.27	1.27	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	60.94

11.0 Heat Loss Floors

Summary for Input Data

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	0.12	None	0.00	75.00	62.22

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	60.94

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Patio Doors	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Entrance Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front W	Windows	External Wall 1	North	5.27	0
Front D	Entrance Door	External Wall 1	North	2.14	0
Rear W	Windows	External Wall 1	South	4.09	0
Rear Patio Door	Patio Doors	External Wall 1	South	5.22	0
Right Side W	Windows	External Wall 1	East	2.32	0
Left Side W	Windows	External Wall 1	West	1.21	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)	Non Gov Approved Schemes	14.34	0.05	0.05 HiTherm	No
E3 Sill	Non Gov Approved Schemes	13.32	0.02	0.02 RCD	No
E4 Jamb	Non Gov Approved Schemes	31.80	0.02	0.02 RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	34.19	0.05	0.05 RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	32.55	0.00	0.00 RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	11.07	0.05	0.05 RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	31.00	0.04	0.04 RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	24.67	0.04	0.04 RCD	No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	10.20	-0.09	-0.09 RCD	No
E24 Eaves (insulation at ceiling level - inverted)	Table K1 - Default	1.55	0.15	0.15	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
0.13	In Room Fan Kitchen	1
0.11	In Room Fan Other Wet Room	4
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other Wet Room	0
0.10	Through Wall Fan Kitchen	0
0.10	Through Wall Fan Other Wet Room	0

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys

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	No				
----------------------------------	---------------------------------	--	--	--	--

22.0 Pressure Testing	Yes				
Designed AP ₅₀	4.65	m³/(h.m²) @ 50 Pa			
Property Tested?	Yes				
Test Method	Blower Door				

22.0 Lighting	No				
No Fixed Lighting	No				

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	25

24.0 Main Heating 1	Database				
Percentage of Heat	100.00	%			
Database Ref. No.	104573				
Fuel Type	Electricity				
SAP Code	0				
In Winter	232.09				
In Summer	270.72				
Model Name	Ecodan 5.0 kW				
Manufacturer	Mitsubishi Electric Europe B.V.				
System Type	Heat Pump				
Controls SAP Code	2207				
Delayed Start Stat	Yes				
Burner Control	Modulating				
HETAS approved System	No				
Is MHS Pumped	Pump in heated space				
Heating Pump Age	2013 or later				
Heat Emitter	Radiators and Underfloor				
Underfloor Heating	Yes - Pipes in thin screed				
Flow Temperature	Enter value				
Flow Temperature Value	45.00				

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				
-------------------------------	-----------------------------------	--	--	--	--

28.0 Water Heating	Main Heating 1				
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
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
Bathroom	Combi boiler or unvented hot water system	8.00		No	Instantaneous System 1
En-suite	Combi boiler or unvented hot water system	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

Hot Water Cylinder		
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Insulation Thickness Type	Other	
Insulation Thickness	15	
Cylinder Volume	210.00	L
Loss	1.53	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	

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	DET (150-3)	Issued on Date	29/01/2025
Assessment Reference	DET (150-3)	Prop Type Ref	DET (150-3)
Property	DET (150-3)		

SAP Rating	82 B	DER	3.62	TER	10.12
Environmental	96 A	% DER < TER			64.23
CO ₂ Emissions (t/year)	0.5	DFEE	42.21	TFEE	44.43
Compliance Check	See BREL	% DFEE < TFEE			5.00
% DPER < TPER	28.71	DPER	37.82	TPER	53.05

Assessor Details	Mr. Matthew Fitzpatrick	Assessor ID	7601-0001
Client			

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
Which Floor	0	
2.0 Number of Storeys	2	
3.0 Date Built	2025	
3.0 Property Age Band	L	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	168.23	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements	Ground floor:	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	1st Storey:	42.60 m	76.33 m ²	2.50 m
		41.42 m	74.03 m ²	2.70 m

8.0 Living Area	19.96	m ²
-----------------	-------	----------------

9.0 External Walls	Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Gross Area(m ²)	Nett Area (m ²)	Shelter Res	Shelter	Openings	Area Calculation Type
	External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18	60.00	218.34	176.65	0.00	None	41.69	Enter Gross Area

9.2 Internal Walls	Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
	Stud Partitions	Plasterboard on timber frame	9.00	216.92
	Block Partitions	Dense block, plasterboard on dabs	75.00	57.77

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
	Cold Roof	External Plane	Plasterboard, insulated at ceiling level	0.10	9.00	74.03	74.03	None	0.00	Enter Gross Area	0.00
	Bay Roof	External Plane	Plasterboard, insulated at ceiling level	0.10	9.00	2.26	2.26	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	74.03

11.0 Heat Loss Floors

Summary for Input Data



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	0.12	None	0.00	75.00	76.33

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	74.03

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Patio Doors	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Entrance Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front W	Windows	External Wall 1	North	7.61	0
Front D	Entrance Door	External Wall 1	North	2.14	0
Rear W	Windows	External Wall 1	South	4.95	0
Rear Patio Door	Patio Doors	External Wall 1	South	5.22	0
L Side W	Windows	External Wall 1	West	5.63	0
Bay W RS	Windows	External Wall 1	North East	2.55	0
Bay W LS	Windows	External Wall 1	North West	2.55	0
Side Patio Door	Patio Doors	External Wall 1	West	6.30	0
R Side W	Windows	External Wall 1	East	4.73	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)	Non Gov Approved Schemes	28.35	0.05	0.05 HiTherm	No
E3 Sill	Non Gov Approved Schemes	27.33	0.02	0.02 RCD	No
E4 Jamb	Non Gov Approved Schemes	69.00	0.02	0.02 RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	42.60	0.05	0.05 RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	41.42	0.00	0.00 RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	14.80	0.04	0.04 RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	32.40	0.05	0.05 RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	36.00	0.04	0.04 RCD	No
E24 Eaves (insulation at ceiling level - inverted)	Table K1 - Default	4.61	0.15	0.15	No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	15.20	-0.09	-0.09 RCD	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	500787
Duct Type	Rigid
Wet Rooms	5
SFP from Installer Commissioning Certificate	No

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.13	In Room Fan Kitchen	1
0.11	In Room Fan Other Wet Room	4
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other Wet Room	0
0.10	Through Wall Fan Kitchen	0
0.10	Through Wall Fan Other Wet Room	0

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	4.65	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	75.00	10.00	750.00	25

24.0 Main Heating 1

Percentage of Heat	100.00	%
Database Ref. No.	104633	
Fuel Type	Electricity	
SAP Code	0	
In Winter	304.87	
In Summer	186.48	
Model Name	Ecordan 6.0 kW	
Manufacturer	Mitsubishi Electric Europe B.V.	
System Type	Heat Pump	
Controls SAP Code	2207	
Delayed Start Stat	Yes	
Burner Control	Modulating	
HETAS approved System	No	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators and Underfloor	
Underfloor Heating	Yes - Pipes in thin screed	
Flow Temperature	Enter value	
Flow Temperature Value	45.00	

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
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
Bathroom	Combi boiler or unvented hot water system	8.00		No	Instantaneous System 1
En-suite	Combi boiler or unvented hot water system	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Insulation Thickness Type	Other	
Insulation Thickness	15	
Cylinder Volume	250.00	L
Loss	1.80	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

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	DET (197-5)	Issued on Date	29/01/2025
Assessment Reference	DET (197-5)	Prop Type Ref	DET (197-5)
Property	DET (197-5)		

SAP Rating	83 B	DER	3.25	TER	8.75
Environmental	97 A	% DER < TER			62.86
CO ₂ Emissions (t/year)	0.59	DFEE	39.91	TFEE	42.41
Compliance Check	See BREL	% DFEE < TFEE			5.89
% DPER < TPER	26.66	DPER	33.88	TPER	46.19

Assessor Details	Mr. Matthew Fitzpatrick	Assessor ID	7601-0001
Client			

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
Which Floor	0	
2.0 Number of Storeys	2	
3.0 Date Built	2025	
3.0 Property Age Band	L	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	159.71	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements	Ground floor:	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	1st Storey:	49.49 m	104.07 m ²	2.50 m
		42.39 m	93.03 m ²	2.70 m

8.0 Living Area	21.86	m ²
-----------------	-------	----------------

9.0 External Walls	Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Gross Area(m ²)	Nett Area (m ²)	Shelter Res	Shelter	Openings	Area Calculation Type
	External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18	60.00	238.19	201.39	0.00	None	36.80	Enter Gross Area

9.2 Internal Walls	Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
	Stud Partitions	Plasterboard on timber frame	9.00	273.00
	Block Partitions	Dense block, plasterboard on dabs	75.00	75.93

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
	Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.10	9.00	93.03	93.03	None	0.00	Enter Gross Area	0.00
	Bay Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.10	9.00	2.27	2.27	None	0.00	Enter Gross Area	0.00
	Flat Roof	External Flat Roof	Plasterboard, insulated flat roof	0.15	9.00	9.33	7.64	None	0.00	Enter Gross Area	1.69

10.2 Internal Ceilings	Description	Storey	Construction	Area (m ²)
	Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	93.03

Summary for Input Data

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	104.07

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	93.03

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Patio Doors	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Entrance Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.40
Roof Lights	Manufacturer	Roof Light	Double Low-E Soft 0.1			0.63		0.70	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front W	Windows	External Wall 1	North	7.56	0
Front D	Entrance Door	External Wall 1	North	2.14	0
Rear W	Windows	External Wall 1	South	5.87	0
Rear Patio Door	Patio Doors	External Wall 1	South	6.30	0
L Side W	Windows	External Wall 1	West	2.20	0
Bay W RS	Windows	External Wall 1	North East	3.15	0
Bay W LS	Windows	External Wall 1	North West	3.15	0
R Side W	Windows	External Wall 1	East	4.31	0
Rear D	Entrance Door	External Wall 1	South	2.12	0
Roof Light	Roof Lights	Flat Roof	South	1.69	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)	Non Gov Approved Schemes	24.30	0.05	0.05 HiTherm	No
E3 Sill	Non Gov Approved Schemes	22.27	0.02	0.02 RCD	No
E4 Jamb	Non Gov Approved Schemes	63.00	0.02	0.02 RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	49.49	0.05	0.05 RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	42.39	0.00	0.00 RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	22.92	0.04	0.04 RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	25.27	0.05	0.05 RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	43.70	0.04	0.04 RCD	No
E24 Eaves (insulation at ceiling level - inverted)	Table K1 - Default	7.93	0.15	0.15	No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	22.90	-0.09	-0.09 RCD	No
E14 Flat roof	Table K1 - Default	8.93	0.16	0.16	No
R1 Head of roof window	Table K1 - Default	1.30	0.24	0.24	No
R2 Sill of roof window	Table K1 - Default	1.30	0.24	0.24	No
R3 Jamb of roof window	Table K1 - Default	2.60	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	500787
Duct Type	Rigid
Wet Rooms	6
SFP from Installer Commissioning Certificate	No

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.13	In Room Fan Kitchen	1
0.11	In Room Fan Other Wet Room	5

Summary for Input Data

0.00 In Duct Fan Kitchen 0
 0.00 In Duct Fan Other Wet Room 0
 0.10 Through Wall Fan Kitchen 0
 0.10 Through Wall Fan Other Wet Room 0

20.0 Fans, Open Fireplaces, Flues

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

21.0 Fixed Cooling System

22.0 Pressure Testing

Designed AP₅₀ m³/(h.m²) @ 50 Pa
 Property Tested?
 Test Method

22.0 Lighting

No Fixed Lighting

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	25

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
 Delayed Start Stat
 Burner Control
 HETAS approved System
 Is MHS Pumped
 Heating Pump Age
 Heat Emitter
 Underfloor Heating
 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
-------------	-----------	-------------	------------	--------------------	------	------------------	------------	-------------	-----------------

Summary for Input Data

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

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

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

Bathroom

Combi boiler or unvented hot water system

8.00

No

Instantaneous System 1

En-suite 1

Combi boiler or unvented hot water system

8.00

No

En-suite 2

Combi boiler or unvented hot water system

8.00

No

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

Hot Water Cylinder

Cylinder Stat

Yes

Cylinder In Heated Space

Yes

Independent Time Control

Yes

Insulation Type

Measured Loss

Insulation Thickness Type

Other

Insulation Thickness

15

Cylinder Volume

250.00

L

Loss

1.80

kWh/day

Pipes insulation

Fully insulated primary pipework

In Airing Cupboard

No

31.0 Thermal Store

None

Thermal Store Pipework

within a single casing

34.0 Small-scale Hydro

None

Electricity Generated

0.00

Apportioned

0.00

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	GF MAIS		Issued on Date	29/01/2025
Assessment Reference	GF MAIS	Prop Type Ref	GF MAIS	
Property	GF MAIS			

SAP Rating	86 B	DER	4.11	TER	13.84
Environmental	97 A	% DER < TER			70.30
CO ₂ Emissions (t/year)	0.19	DFEE	33.37	TFEE	37.12
Compliance Check	See BREL	% DFEE < TFEE			10.10
% DPER < TPER	40.63	DPER	43.23	TPER	72.82

Assessor Details	Mr. Matthew Fitzpatrick	Assessor ID	7601-0001
Client			

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

Orientation	North
Property Tenture	ND
Transaction Type	6
Terrain Type	Suburban
1.0 Property Type	Maisonette, Semi-Detached
Position of Flat	Ground-floor flat
Which Floor	1
2.0 Number of Storeys	1
3.0 Date Built	2025
3.0 Property Age Band	L
4.0 Sheltered Sides	2
5.0 Sunlight/Shade	Average or unknown
6.0 Thermal Mass Parameter	Precise calculation
Thermal Mass	205.84
7.0 Electricity Tariff	Standard
Smart electricity meter fitted	Yes
Smart gas meter fitted	Yes

kJ/m²K

7.0 Measurements	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	19.32 m	50.62 m²	2.50 m
1st Storey:	42.39 m	93.03 m²	2.70 m

8.0 Living Area	19.53	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
	External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18	60.00	48.29	38.99	0.00	None	9.30	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	28.78	0.00	None

9.2 Internal Walls	Description	Construction	Kappa (kJ/m²K)	Area (m²)
	Stud Partitions	Plasterboard on timber frame	9.00	93.94

10.1 Party Ceilings	Description	Construction	Kappa (kJ/m²K)	Area (m²)
	Party Ceiling 1	Precast concrete planks floor, screed, carpeted	30.00	50.62

10.2 Internal Ceilings	Description	Storey	Construction	Area (m²)
	Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	93.03

Summary for Input Data

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	50.62

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Patio Doors	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Entrance Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.40
Roof Lights	Manufacturer	Roof Light	Double Low-E Soft 0.1			0.63		0.70	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front W	Windows	External Wall 1	North	3.37	0
Front D	Entrance Door	External Wall 1	North	1.95	0
L Side W	Windows	External Wall 1	West	2.29	0
R Side W	Windows	External Wall 1	East	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)	Non Gov Approved Schemes	6.50	0.05	0.05 HiTherm	No
E3 Sill	Non Gov Approved Schemes	5.57	0.02	0.02 RCD	No
E4 Jamb	Non Gov Approved Schemes	17.10	0.02	0.02 RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	19.32	0.05	0.05 RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	5.00	0.04	0.04 RCD	No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	5.00	-0.09	-0.09 RCD	No
E7 Party floor between dwellings (in blocks of flats)	Non Gov Approved Schemes	19.32	0.04	0.04	No
E18 Party wall between dwellings	Non Gov Approved Schemes	5.00	0.04	0.04	No
E25 Staggered party wall between dwellings	Non Gov Approved Schemes	5.00	0.03	0.03	No
P1 Party wall - Ground floor	Non Gov Approved Schemes	11.51	0.04	0.04 RCD	No
P3 Party wall - Intermediate floor between dwellings (in blocks of flats)	Table K1 - Default	11.51	0.00	0.00	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	500787
Duct Type	Rigid
Wet Rooms	2
SFP from Installer Commissioning Certificate	No

19.1 Mechanical extract ventilation - Decentralised

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

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

22.0 Lighting
No Fixed Lighting

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	25

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

Delayed Start Stat

Burner Control

HETAS approved System

Is MHS Pumped

Heating Pump Age

Heat Emitter

Underfloor Heating

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

Summary for Input Data

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
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
Bathroom	Combi boiler or unvented hot water system	8.00		No	Instantaneous System 1

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	15	
Cylinder Volume	150.00	L
Loss	1.15	kWh/day
Pipes insulation	Fully insulated primary pipework	
In Airing Cupboard	No	

31.0 Thermal Store

Thermal Store Pipework	None
	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	SEMI (81-4)		Issued on Date	29/01/2025
Assessment Reference	SEMI (81-4)	Prop Type Ref	SEMI (81-4)	
Property	SEMI (81-4)			

SAP Rating	85 B	DER	3.66	TER	11.26
Environmental	97 A	% DER < TER			67.50
CO ₂ Emissions (t/year)	0.27	DFEE	32.63	TFEE	35.40
Compliance Check	See BREL	% DFEE < TFEE			7.83
% DPER < TPER	34.77	DPER	38.34	TPER	58.78

Assessor Details	Mr. Matthew Fitzpatrick	Assessor ID	7601-0001
Client			

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

Orientation	North
Property Tenture	ND
Transaction Type	6
Terrain Type	Suburban
1.0 Property Type	House, Semi-Detached
Which Floor	0
2.0 Number of Storeys	2
3.0 Date Built	2025
3.0 Property Age Band	L
4.0 Sheltered Sides	2
5.0 Sunlight/Shade	Average or unknown
6.0 Thermal Mass Parameter	Precise calculation
Thermal Mass	143.79 kJ/m ² K
7.0 Electricity Tariff	Standard
Smart electricity meter fitted	Yes
Smart gas meter fitted	Yes

7.0 Measurements	Ground floor:	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	1st Storey:	18.16 m	40.68 m ²	2.50 m
		18.16 m	40.68 m ²	2.70 m

8.0 Living Area	13.64 m ²
-----------------	----------------------

9.0 External Walls	Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Gross Area(m ²)	Nett Area (m ²)	Shelter Res	Shelter	Openings	Area Calculation Type
	External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18	60.00	94.42	80.87	0.00	None	13.55	Enter Gross Area

9.1 Party Walls	Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Area (m ²)	Shelter Res	Shelter
	Party Wall 1	Filled Cavity with Edge Sealing	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	41.85	0.00	None

9.2 Internal Walls	Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
	Stud Partitions	Plasterboard on timber frame	9.00	165.97

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
	Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.10	9.00	40.68	40.68	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	40.68

Summary for Input Data



11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	40.68

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	40.68

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Patio Doors	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Entrance Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front W	Windows	External Wall 1	North	3.87	0
Front D	Entrance Door	External Wall 1	North	2.14	0
Rear W	Windows	External Wall 1	South	3.18	0
Rear Patio Door	Patio Doors	External Wall 1	South	3.15	0
R Side W	Windows	External Wall 1	East	1.21	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)	Non Gov Approved Schemes	9.24	0.05	0.05 HiTherm	No
E3 Sill	Non Gov Approved Schemes	8.22	0.02	0.02 RCD	No
E4 Jamb	Non Gov Approved Schemes	25.20	0.02	0.02 RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	18.16	0.05	0.05 RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	18.16	0.00	0.00 RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	8.05	0.04	0.04 RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	10.11	0.05	0.05 RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	10.40	0.04	0.04 RCD	No
E18 Party wall between dwellings	Non Gov Approved Schemes	10.40	0.04	0.04 RCD	No
P1 Party wall - Ground floor	Non Gov Approved Schemes	8.05	0.04	0.04 RCD	No
P2 Party wall - Intermediate floor within a dwelling	Table K1 - Default	8.05	0.00	0.00	No
P4 Party wall - Roof (insulation at ceiling level)	Non Gov Approved Schemes	8.05	0.03	0.03 RCD	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
0.13	In Room Fan Kitchen	1
0.11	In Room Fan Other Wet Room	2
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other Wet Room	0
0.10	Through Wall Fan Kitchen	0
0.10	Through Wall Fan Other Wet Room	0

20.0 Fans, Open Fireplaces, Flues

Summary for Input Data

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

21.0 Fixed Cooling System	No				
----------------------------------	---------------------------------	--	--	--	--

22.0 Pressure Testing	Yes				
Designed AP ₅₀	4.65	m³/(h.m²) @ 50 Pa			
Property Tested?	Yes				
Test Method	Blower Door				

22.0 Lighting	No				
No Fixed Lighting	No				
	Name Lighting 1	Efficacy 75.00	Power 10.00	Capacity 750.00	Count 25

24.0 Main Heating 1	Database				
Percentage of Heat	100.00 %				
Database Ref. No.	104573				
Fuel Type	Electricity				
SAP Code	0				
In Winter	242.97				
In Summer	279.51				
Model Name	Ecodan 5.0 kW				
Manufacturer	Mitsubishi Electric Europe B.V.				
System Type	Heat Pump				
Controls SAP Code	2207				
Delayed Start Stat	Yes				
Burner Control	Modulating				
HETAS approved System	No				
Is MHS Pumped	Pump in heated space				
Heating Pump Age	2013 or later				
Heat Emitter	Radiators and Underfloor				
Underfloor Heating	Yes - Pipes in thin screed				
Flow Temperature	Enter value				
Flow Temperature Value	45.00				

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				
-------------------------------	-----------------------------------	--	--	--	--

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
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
Bathroom	Combi boiler or unvented hot water system	8.00		No	Instantaneous System 1

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	15	
Cylinder Volume	210.00	L
Loss	1.53	kWh/day
Pipes insulation	Fully insulated primary pipework	
In Airing Cupboard	No	

31.0 Thermal Store

Thermal Store Pipework	None
	within a single casing

34.0 Small-scale Hydro

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

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

Property Reference	SEMI (132-8)	Issued on Date	29/01/2025
Assessment Reference	SEMI (132-8)	Prop Type Ref	SEMI (132-8)
Property	SEMI (132-8)		

SAP Rating	85 B	DER	3.29	TER	8.78
Environmental	97 A	% DER < TER			62.53
CO ₂ Emissions (t/year)	0.39	DFEE	33.10	TFEE	35.81
Compliance Check	See BREL	% DFEE < TFEE			7.57
% DPER < TPER	25.30	DPER	34.23	TPER	45.82

Assessor Details	Mr. Matthew Fitzpatrick	Assessor ID	7601-0001
Client			

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

Orientation	North
Property Tenture	ND
Transaction Type	6
Terrain Type	Suburban
1.0 Property Type	House, Semi-Detached
Which Floor	0
2.0 Number of Storeys	2
3.0 Date Built	2025
3.0 Property Age Band	L
4.0 Sheltered Sides	2
5.0 Sunlight/Shade	Average or unknown
6.0 Thermal Mass Parameter	Precise calculation
Thermal Mass	158.04 kJ/m ² K
7.0 Electricity Tariff	Standard
Smart electricity meter fitted	Yes
Smart gas meter fitted	Yes

7.0 Measurements	Ground floor:	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	1st Storey:	24.96 m	70.18 m ²	2.50 m
		22.47 m	62.62 m ²	2.70 m

8.0 Living Area	13.59 m ²
-----------------	----------------------

9.0 External Walls	Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Gross Area(m ²)	Nett Area (m ²)	Shelter Res	Shelter	Openings	Area Calculation Type
	External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18	60.00	123.06	103.43	0.00	None	19.63	Enter Gross Area

9.1 Party Walls	Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Area (m ²)	Shelter Res	Shelter
	Party Wall 1	Filled Cavity with Edge Sealing	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	59.62	0.00	None

9.2 Internal Walls	Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
	Stud Partitions	Plasterboard on timber frame	9.00	153.47
	Block Partitions	Dense block, plasterboard on dabs	75.00	61.65

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
	Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.10	9.00	62.62	62.62	None	0.00	Enter Gross Area	0.00
	Sloping Roof	External Slope Roof	Plasterboard, insulated slope	0.15	9.00	8.60	7.28	None	0.00	Enter Gross Area	1.32

Summary for Input Data

10.2 Internal Ceilings

Description	Storey	Construction	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	62.62

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	0.12	None	0.00	75.00	70.18

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	62.62

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Patio Doors	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Entrance Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.40
Roof Lights	Manufacturer	Roof Light	Double Low-E Soft 0.1			0.63		0.70	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front W	Windows	External Wall 1	North	7.37	0
Front D	Entrance Door	External Wall 1	North	1.97	0
Rear W	Windows	External Wall 1	South	4.12	0
Rear Patio Door	Patio Doors	External Wall 1	South	5.04	0
R Side W	Windows	External Wall 1	East	1.12	0
Roof Light	Roof Lights	Sloping Roof	South	1.32	23

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)	Non Gov Approved Schemes	13.70	0.05	0.05 HiTherm	No
E3 Sill	Non Gov Approved Schemes	12.76	0.02	0.02 RCD	No
E4 Jamb	Non Gov Approved Schemes	30.60	0.02	0.02 RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	24.96	0.05	0.05 RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	22.47	0.00	0.00 RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	10.27	0.04	0.04 RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	12.20	0.05	0.05 RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	12.90	0.04	0.04 RCD	No
E18 Party wall between dwellings	Non Gov Approved Schemes	10.40	0.04	0.04 RCD	No
P1 Party wall - Ground floor	Non Gov Approved Schemes	12.76	0.04	0.04 RCD	No
P2 Party wall - Intermediate floor within a dwelling	Table K1 - Default	10.27	0.00	0.00	No
P4 Party wall - Roof (insulation at ceiling level)	Non Gov Approved Schemes	10.27	0.03	0.03 RCD	No
E24 Eaves (insulation at ceiling level - inverted)	Table K1 - Default	3.10	0.15	0.15	No
E11 Eaves (insulation at rafter level)	Non Gov Approved Schemes	3.10	0.02	0.02 RCD	No
E13 Gable (insulation at rafter level)	Non Gov Approved Schemes	2.55	0.04	0.04 RCD	No
E17 Corner (inverted - internal area greater than external area)	Non Gov Approved Schemes	2.50	-0.09	-0.09 RCD	No
P5 Party wall - Roof (insulation at rafter level)	Non Gov Approved Schemes	2.78	0.04	0.04	No
R1 Head of roof window	Table K1 - Default	1.34	0.24	0.24	No
R2 Sill of roof window	Table K1 - Default	1.34	0.24	0.24	No
R3 Jamb of roof window	Table K1 - Default	1.97	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	500787
Duct Type	Rigid
Wet Rooms	5
SFP from Installer Commissioning Certificate	No

Summary for Input Data

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.13	In Room Fan Kitchen	1
0.11	In Room Fan Other Wet Room	4
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other Wet Room	0
0.10	Through Wall Fan Kitchen	0
0.10	Through Wall Fan Other Wet Room	0

20.0 Fans, Open Fireplaces, Flues

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

21.0 Fixed Cooling System

22.0 Pressure Testing

	Yes	
Designed AP ₅₀	4.65	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	75.00	10.00	750.00	25	

24.0 Main Heating 1

	Database	
Percentage of Heat	100.00	%
Database Ref. No.	104573	
Fuel Type	Electricity	
SAP Code	0	
In Winter	232.12	
In Summer	270.75	
Model Name	Ecodan 5.0 kW	
Manufacturer	Mitsubishi Electric Europe B.V.	
System Type	Heat Pump	
Controls SAP Code	2207	
Delayed Start Stat	Yes	
Burner Control	Modulating	
HETAS approved System	No	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators and Underfloor	
Underfloor Heating	Yes - Pipes in thin screed	
Flow Temperature	Enter value	
Flow Temperature Value	45.00	

25.0 Main Heating 2

Summary for Input Data

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

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
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
Bathroom	Combi boiler or unvented hot water system	8.00		No	Instantaneous System 1
En-suite	Combi boiler or unvented hot water system	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Insulation Thickness Type	Other	
Insulation Thickness	15	
Cylinder Volume	210.00	L
Loss	1.53	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

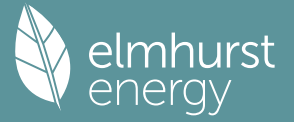
34.0 Small-scale Hydro

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

Summary for Input Data



None

Further measures to achieve even higher standards

None

Summary for Input Data

Property Reference	TER (91-6)	Issued on Date	29/01/2025
Assessment Reference	TER (91-6)	Prop Type Ref	TER (91-6)
Property	TER (91-6)		

SAP Rating	85 B	DER	3.55	TER	10.58
Environmental	97 A	% DER < TER			66.45
CO ₂ Emissions (t/year)	0.3	DFEE	32.23	TFEE	34.94
Compliance Check	See BREL	% DFEE < TFEE			7.75
% DPER < TPER	32.70	DPER	37.15	TPER	55.20

Assessor Details	Mr. Matthew Fitzpatrick	Assessor ID	7601-0001
Client			

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, End-Terrace	
Which Floor	0	
2.0 Number of Storeys	2	
3.0 Date Built	2025	
3.0 Property Age Band	L	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	139.55	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements	Ground floor:	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	1st Storey:	19.18 m	45.83 m ²	2.50 m
		19.18 m	45.83 m ²	2.70 m

8.0 Living Area	20.37	m ²
-----------------	-------	----------------

9.0 External Walls	Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Gross Area(m ²)	Nett Area (m ²)	Shelter Res	Shelter	Openings	Area Calculation Type
	External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18	60.00	99.72	84.66	0.00	None	15.06	Enter Gross Area

9.1 Party Walls	Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Area (m ²)	Shelter Res	Shelter
	Party Wall 1	Filled Cavity with Edge Sealing	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	47.11	0.00	None

9.2 Internal Walls	Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
	Stud Partitions	Plasterboard on timber frame	9.00	186.89

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
	Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.10	9.00	45.83	45.83	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	45.83

Summary for Input Data



11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	45.83

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	45.83

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Patio Doors	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Entrance Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front W	Windows	External Wall 1	North	4.28	0
Front D	Entrance Door	External Wall 1	North	2.14	0
Rear W	Windows	External Wall 1	South	4.28	0
Rear Patio Door	Patio Doors	External Wall 1	South	3.15	0
R Side W	Windows	External Wall 1	East	1.21	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)	Non Gov Approved Schemes	10.49	0.05	0.05 HiTherm	No
E3 Sill	Non Gov Approved Schemes	9.47	0.02	0.02 RCD	No
E4 Jamb	Non Gov Approved Schemes	27.60	0.02	0.02 RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	19.18	0.05	0.05 RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	19.18	0.00	0.00 RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	9.06	0.04	0.04 RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	10.12	0.05	0.05 RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	10.40	0.04	0.04 RCD	No
E18 Party wall between dwellings	Non Gov Approved Schemes	10.40	0.04	0.04 RCD	No
P1 Party wall - Ground floor	Non Gov Approved Schemes	9.06	0.04	0.04 RCD	No
P2 Party wall - Intermediate floor within a dwelling	Table K1 - Default	9.06	0.00	0.00	No
P4 Party wall - Roof (insulation at ceiling level)	Non Gov Approved Schemes	9.06	0.03	0.03 RCD	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	500787
Duct Type	Rigid
Wet Rooms	3
SFP from Installer Commissioning Certificate	No

19.1 Mechanical extract ventilation - Decentralised

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

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	4.65	m³/(h.m²) @ 50 Pa
Property Tested?	Yes	
Test Method	Blower Door	

22.0 Lighting

No Fixed Lighting	No				
	Name	Efficacy	Power	Capacity	Count
	Lighting 1	75.00	10.00	750.00	25

24.0 Main Heating 1

Percentage of Heat	100.00	%
Database Ref. No.	104573	
Fuel Type	Electricity	
SAP Code	0	
In Winter	240.35	
In Summer	277.85	
Model Name	Ecodan 5.0 kW	
Manufacturer	Mitsubishi Electric Europe B.V.	
System Type	Heat Pump	
Controls SAP Code	2207	
Delayed Start Stat	Yes	
Burner Control	Modulating	
HETAS approved System	No	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators and Underfloor	
Underfloor Heating	Yes - Pipes in thin screed	
Flow Temperature	Enter value	
Flow Temperature Value	45.00	

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
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
Bathroom	Combi boiler or unvented hot water system	8.00		No	Instantaneous System 1

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	15	
Cylinder Volume	210.00	L
Loss	1.53	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	kWh/Year
Apportioned	0.00	
Connected to dwelling's electricity meter	Yes	
Electricity Generation	Annual	

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

Property Reference	TER (94-6)		Issued on Date	29/01/2025
Assessment Reference	TER (94-6)	Prop Type Ref	TER (94-6)	
Property	TER (94-6)			

SAP Rating	84 B	DER	3.64	TER	10.68
Environmental	97 A	% DER < TER			65.92
CO ₂ Emissions (t/year)	0.31	DFEE	33.44	TFEE	35.83
Compliance Check	See BREL	% DFEE < TFEE			6.67
% DPER < TPER	31.87	DPER	38.05	TPER	55.85

Assessor Details	Mr. Matthew Fitzpatrick	Assessor ID	7601-0001
Client			

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

Orientation	North
Property Tenture	ND
Transaction Type	6
Terrain Type	Suburban
1.0 Property Type	House, Semi-Detached
Which Floor	0
2.0 Number of Storeys	2
3.0 Date Built	2025
3.0 Property Age Band	L
4.0 Sheltered Sides	2
5.0 Sunlight/Shade	Average or unknown
6.0 Thermal Mass Parameter	Precise calculation
Thermal Mass	138.57 kJ/m ² K
7.0 Electricity Tariff	Standard
Smart electricity meter fitted	Yes
Smart gas meter fitted	Yes

7.0 Measurements		Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	Ground floor:	19.47 m	47.31 m ²	2.50 m
	1st Storey:	19.47 m	47.31 m ²	2.70 m

8.0 Living Area	21.78 m ²
-----------------	----------------------

Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Gross Area(m ²)	Nett Area (m ²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18	60.00	101.24	86.79	0.00	None	14.45	Enter Gross Area

Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Area (m ²)	Shelter Res	Shelter
Party Wall 1	Filled Cavity with Edge Sealing	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	48.63	0.00	None

Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
Stud Partitions	Plasterboard on timber frame	9.00	186.71

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
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.10	9.00	47.31	47.31	None	0.00	Enter Gross Area	0.00

Description	Storey	Construction	Area (m ²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	47.31

Summary for Input Data

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	47.31

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	47.31

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Patio Doors	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Entrance Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front W	Windows	External Wall 1	North	4.28	0
Front D	Entrance Door	External Wall 1	North	2.14	0
Rear W	Windows	External Wall 1	South	4.68	0
Rear D	Entrance Door	External Wall 1	South	2.14	0
R Side W	Windows	External Wall 1	East	1.21	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)	Non Gov Approved Schemes	10.35	0.05	0.05 HiTherm	No
E3 Sill	Non Gov Approved Schemes	8.31	0.02	0.02 RCD	No
E4 Jamb	Non Gov Approved Schemes	27.60	0.02	0.02 RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	19.47	0.05	0.05 RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	19.47	0.00	0.00 RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	9.35	0.04	0.04 RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	10.12	0.05	0.05 RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	10.40	0.04	0.04 RCD	No
E18 Party wall between dwellings	Non Gov Approved Schemes	10.40	0.04	0.04 RCD	No
P1 Party wall - Ground floor	Non Gov Approved Schemes	9.35	0.04	0.04 RCD	No
P2 Party wall - Intermediate floor within a dwelling	Table K1 - Default	9.35	0.00	0.00	No
P4 Party wall - Roof (insulation at ceiling level)	Non Gov Approved Schemes	9.35	0.03	0.03 RCD	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	500787
Duct Type	Rigid
Wet Rooms	3
SFP from Installer Commissioning Certificate	No

19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

Summary for Input Data

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

21.0 Fixed Cooling System	No				
----------------------------------	---------------------------------	--	--	--	--

22.0 Pressure Testing	Yes				
Designed AP ₅₀	4.65	m³/(h.m²) @ 50 Pa			
Property Tested?	Yes				
Test Method	Blower Door				

22.0 Lighting	No				
No Fixed Lighting	No				
	Name Lighting 1	Efficacy 75.00	Power 10.00	Capacity 750.00	Count 25

24.0 Main Heating 1	Database				
Percentage of Heat	100.00 %				
Database Ref. No.	104573				
Fuel Type	Electricity				
SAP Code	0				
In Winter	239.99				
In Summer	277.62				
Model Name	Ecodan 5.0 kW				
Manufacturer	Mitsubishi Electric Europe B.V.				
System Type	Heat Pump				
Controls SAP Code	2207				
Delayed Start Stat	Yes				
Burner Control	Modulating				
HETAS approved System	No				
Is MHS Pumped	Pump in heated space				
Heating Pump Age	2013 or later				
Heat Emitter	Radiators and Underfloor				
Underfloor Heating	Yes - Pipes in thin screed				
Flow Temperature	Enter value				
Flow Temperature Value	45.00				

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				
-------------------------------	-----------------------------------	--	--	--	--

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
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
Bathroom	Combi boiler or unvented hot water system	8.00		No	Instantaneous System 1

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	15	
Cylinder Volume	210.00	L
Loss	1.53	kWh/day
Pipes insulation	Fully insulated primary pipework	
In Airing Cupboard	No	

31.0 Thermal Store

Thermal Store Pipework	None
	within a single casing

34.0 Small-scale Hydro

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

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

Property Reference	TF MAIS		Issued on Date	29/01/2025
Assessment Reference	TF MAIS	Prop Type Ref	TF MAIS	
Property	TF MAIS			

SAP Rating	85 B	DER	3.99	TER	12.74
Environmental	97 A	% DER < TER			68.68
CO ₂ Emissions (t/year)	0.23	DFEE	33.52	TFEE	36.64
Compliance Check	See BREL	% DFEE < TFEE			8.52
% DPER < TPER	37.28	DPER	41.97	TPER	66.91

Assessor Details	Mr. Matthew Fitzpatrick	Assessor ID	7601-0001
Client			

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

Orientation	North
Property Tenture	ND
Transaction Type	6
Terrain Type	Suburban
1.0 Property Type	Maisonette, Semi-Detached
Position of Flat	Top-floor flat
Which Floor	2
2.0 Number of Storeys	2
3.0 Date Built	2025
3.0 Property Age Band	L
4.0 Sheltered Sides	2
5.0 Sunlight/Shade	Average or unknown
6.0 Thermal Mass Parameter	Precise calculation
Thermal Mass	120.48
7.0 Electricity Tariff	Standard
Smart electricity meter fitted	Yes
Smart gas meter fitted	Yes

7.0 Measurements	Ground floor:	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	1st Storey:	4.74 m	6.52 m ²	2.50 m
		21.45 m	56.57 m ²	2.70 m

8.0 Living Area	25.80	m ²
-----------------	-------	----------------

9.0 External Walls	Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Gross Area(m ²)	Nett Area (m ²)	Shelter Res	Shelter	Openings	Area Calculation Type
	External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18	60.00	69.78	60.64	0.00	None	9.14	Enter Gross Area

9.1 Party Walls	Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Area (m ²)	Shelter Res	Shelter
	Party Wall 1	Filled Cavity with Edge Sealing	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	48.96	0.00	None

9.2 Internal Walls	Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
	Stud Partitions	Plasterboard on timber frame	9.00	108.63

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	56.57	56.57	None	0.00	Enter Gross Area	0.00
	Low Level Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.10	9.00	2.64	2.64	None	0.00	Enter Gross Area	0.00

Summary for Input Data

10.2 Internal Ceilings

Description	Storey	Construction	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	3.88

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	0.12	None	0.00	75.00	6.52

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	52.69

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Patio Doors	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45		1.00	1.40
Entrance Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.40
Roof Lights	Manufacturer	Roof Light	Double Low-E Soft 0.1			0.63		0.70	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front W	Windows	External Wall 1	North	1.50	0
Front D	Entrance Door	External Wall 1	North	1.95	0
L Side W	Windows	External Wall 1	West	3.58	0
Rear W	Windows	External Wall 1	South	2.10	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)	Non Gov Approved Schemes	7.06	0.05	0.05 HiTherm	No
E3 Sill	Non Gov Approved Schemes	6.13	0.02	0.02 RCD	No
E4 Jamb	Non Gov Approved Schemes	18.00	0.02	0.02 RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	4.74	0.05	0.05 RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	10.40	0.04	0.04 RCD	No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	2.50	-0.09	-0.09 RCD	No
E7 Party floor between dwellings (in blocks of flats)	Non Gov Approved Schemes	21.45	0.04	0.04	No
E18 Party wall between dwellings	Non Gov Approved Schemes	5.20	0.04	0.04 RCD	No
E25 Staggered party wall between dwellings	Non Gov Approved Schemes	7.50	0.03	0.03 RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	13.91	0.05	0.05 RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	12.26	0.04	0.04 RCD	No
P1 Party wall - Ground floor	Non Gov Approved Schemes	9.94	0.04	0.04 RCD	No
P3 Party wall - Intermediate floor between dwellings (in blocks of flats)	Table K1 - Default	9.94	0.00	0.00	No
P2 Party wall - Intermediate floor within a dwelling	Table K1 - Default	21.45	0.00	0.00	No
P4 Party wall - Roof (insulation at ceiling level)	Non Gov Approved Schemes	9.35	0.03	0.03 RCD	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	500787
Duct Type	Rigid
Wet Rooms	2
SFP from Installer Commissioning Certificate	No

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.13	In Room Fan Kitchen	1
0.11	In Room Fan Other Wet Room	1

Summary for Input Data

0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other Wet Room	0
0.10	Through Wall Fan Kitchen	0
0.10	Through Wall Fan Other Wet Room	0

20.0 Fans, Open Fireplaces, Flues

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

21.0 Fixed Cooling System

22.0 Pressure Testing

Designed AP ₅₀	4.65	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	75.00	10.00	750.00	25

24.0 Main Heating 1

Percentage of Heat	100.00	%
--------------------	-------------------------------------	---

Database Ref. No.	104573
-------------------	-------------------------------------

Fuel Type	Electricity
-----------	--

SAP Code	0
----------	--------------------------------

In Winter	243.75
-----------	-------------------------------------

In Summer	280.29
-----------	-------------------------------------

Model Name	Ecodan 5.0 kW
------------	--

Manufacturer	Mitsubishi Electric Europe B.V.
--------------	--

System Type	Heat Pump
-------------	--

Controls SAP Code	2207
-------------------	-----------------------------------

Delayed Start Stat	Yes
--------------------	----------------------------------

Burner Control	Modulating
----------------	---

HETAS approved System	No
-----------------------	---------------------------------

Is MHS Pumped	Pump in heated space
---------------	---

Heating Pump Age	2013 or later
------------------	--

Heat Emitter	Radiators and Underfloor
--------------	---

Underfloor Heating	Yes - Pipes in thin screed
--------------------	---

Flow Temperature	Enter value
------------------	--

Flow Temperature Value	45.00
------------------------	------------------------------------

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
-------------	-----------	-------------	------------	--------------------	------	------------------	------------	-------------	-----------------

Summary for Input Data

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

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

Supplementary Immersion

No

Immersion Only Heating Hot Water

No

28.1 Showers

Description

Shower Type

Flow Rate
[l/min]
8.00

Rated Power
[kW]

Connected

Connected To

Bathroom

Combi boiler or unvented hot water system

No

Instantaneous System 1

28.3 Waste Water Heat Recovery System

29.0 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

15

Cylinder Volume

150.00

L

Loss

1.15

kWh/day

Pipes insulation

Fully insulated primary pipework

In Airing Cupboard

No

31.0 Thermal Store

Thermal Store Pipework

None

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