



Energy Statement

Energy and Carbon Reduction

Land off Thurnscoe Bridge Lane

Reference Number: 009423

Date: November 2024

Issue: 2

thefesgroup.com



PLANNING



DESIGN



ON-CONSTRUCTION



EXISTING BUILDINGS

Project name: Land off Thurnscoe Bridge Lane

Ref: 009423

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Initial review by:

Secondary review by:



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Samuel Palmer

Summary of changes:

Rev A – amendments following client feedback

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Company Profile

Established in 2007 as a family firm, we set out to create a sustainable, resilient business, establishing a happy and positive working environment for both clients and colleagues. It was important for us to offer adaptable and growing solutions for the areas of the construction industry that would benefit from them the most.

Creating an environment that was a pleasure to work in for both colleagues and clients was, and remains, incredibly important to us. Building our future on the foundations of honest relationships, flexibility and efficiency means that we value every client's success as though it were our own.

We have grown to become a trusted construction compliance partner. We continue to grow, to offer packages of sustainability, environmental and acoustic services, with the long-term aim of making our clients' lives easier, so they can focus on the jobs that they enjoy.

Today, the business works with a wide spectrum of clients from household name plc firms, one-off builds and everything in between. Our client list includes many of the nation's major house builders and contractors, as well as universities and public sector organisations. The team also lends their know-how to many architectural practices, M&E consultants and planners.

Introduction

This report has been prepared by the FES Group on behalf of Avant Homes West Yorkshire to accompany the planning application for the proposed dwellings at Land off Thurnscoe Bridge Lane.

The development proposals will see the construction of 296 new dwellings, consisting of detached, semi-detached, and terraced dwellings.

This report reviews the proposed energy and carbon reduction strategy advanced by Avant Homes West Yorkshire within the context of local and national planning policy. The report in particular considers and evaluates the measures incorporated into the design of the development to reduce the predicted CO₂ consumption of the site over 2021 Building Regulations under SAP10.

The following documents were considered when formulating the report:

- National Planning Policy Framework 2021 – The NPPF strengthens the emphasis on sustainable development and encourages Local Authorities to adopt standards consistent with the Government’s zero carbon building policy and other nationally described standards.
- Building Regulations Part L 2021– Approved Document L 2021 Conservation of Fuel and Power in new dwellings sets minimum energy efficiency and fabric efficiency standards for all new domestic buildings.
- Barnsley Borough Pre-App Planning Consultation 2024/ENQ/00177

As such, the team would ask that any residential developments meet the government’s Future Homes Standard, which from 2025 will require CO2 emissions produced by new homes to be 75-80% lower than homes that are built to current standards. Homes will need to be zero carbon ready with no retrofit work required to benefit from the decarbonisation of the electricity grid and the electrification of heating.

As Future Homes Standard and the accompanying software (HEM) have yet to be released, the calculations used within this report have been calculated under the current Part L 2021 regulations under SAP 10. This is with the following assumptions:

- The Fabric Energy Efficiency (FEE) requirement will remain the same
- The Notional Dwelling with FHS will be calculated with a design air permeability figure of 4.00, system 3 ventilation (dMEV), and waste water heat recovery

Sustainable Design

The building fabric, the building services and the management of a building broadly determine the energy use of a building. In understanding this, design teams can take measures to advance sustainable design from the earliest stages of a development. However sustainability is not limited to issues concerning energy consumption. Material selection, the protection of local environments, addressing flood risk and the health and wellbeing of future occupants are all issues requiring consideration. Addressing all these issues in an integrated and intelligent manner will result in truly sustainable developments.

Material Selection

Significant amounts of energy and natural resources are consumed in the production, transportation and disposal of building materials. Two issues are of significant importance in the procurement of materials: the environmental impact of materials and the sourcing of materials. Avant Homes West Yorkshire is dedicated to taking pro-active measures to addressing these issues.

The developer will choose materials which have a lesser environmental impact. This will be implemented during the procurement process. Suppliers will be obliged to produce Environmental Management System certificates covering the sourcing and production of materials. Timber or timber composite products will be sourced from responsible sources. Suppliers will be obliged to provide full Chain of Custody Certificates right through the supply chain; from the initial timber yard, manufacturing process, transformation and distribution. Secure certificates must be produced by valid accrediting bodies – FSC, PEFC, CSA, SFI & MTCC.

| | BRE Green Guide Rating |
|--------------------|------------------------|
| External Wall | A+ |
| Ground Floor | B |
| Intermediate Floor | C |
| Roof | A+ |
| Internal Walls | A |
| Windows | A |

Table 1- Green Guide Rating of Specification

Flood Risk

The Flood and Water Management Act 2010, directs developers to avoid, reduce and delay the discharge of rainfall to public sewers and watercourses through the use of Sustainable Urban Drainage Systems (SUDS) with the aim of protecting watercourses and reducing the risk of localised flooding and pollution.

This obligation is taken seriously:

Where possible, impermeable surfaces are kept to a minimum, thus allowing for maximum infiltration (e.g. permeable paving)



Pollution during Construction

The contractor will be required, under the terms of their contract, to minimise dust, fumes, discharges and any other form of pollution on site, in line with best practice policies:

- The Control of Dust and Emissions from Construction & Demolition: Best Practice Guidance.

The sustainable management and monitoring of waste generated during the construction of a development is a major concern to local and national planners.

Furthermore the site will allow the successful segregation of waste on site in line with Best Practice policies. However the contractor will be obliged to adopt many of the principles of the waste hierarchy:

- Accurate specifications of materials and volumes.
- Recycling and re-use of waste on site.
- Arrange take back schemes with suppliers.
- Instruct a licensed waste contractor to segregate site waste for recycling.



Health and Wellbeing

In achieving ever stricter levels of energy efficiency, it is important that designers do not lose sight of the fact that they are building homes that people can live in and not just occupy. This is an integral part of sustainability, and a hugely important consideration if the population (and the market place) is to tolerate the sustainability agenda. While it is quite difficult to measure or even quantify health and wellbeing, the following measures are a sample of the efforts made by Avant Homes West Yorkshire to address this issue: The proposed properties will have sufficient living /dining space. While this is obviously a marketing consideration, it does fall within this category.

The principal living rooms have sufficient glazing to allow natural light to penetrate into the rooms. Numerous studies have shown this to be beneficial to the general health and happiness of occupants. Daylighting calculations can be undertaken to demonstrate that living rooms, dining rooms, kitchen and home offices receive adequate daylighting.

- The property will benefit from a garden or private space for recreation however this may not apply to flats. This will take the form of secure rear gardens to each property.
- The property has dedicated internal recycling facilities and accessible external storage in line with the local council waste and recycling collection scheme.

Water Efficiency

The average person consumes some 150 litres per day; this represents an annual increase of 1% since the 1930s. Despite the United Kingdom's wet and temperate climate, climate change will most probably result in an increase in the occurrence of drought orders and hosepipe bans. With this in mind, it is not difficult to appreciate that within the next few decades the UK (particularly the South East) will face regular water shortages.

In response to this water efficiency has gained equal billing, alongside energy efficiency. The following are the principle policy drivers.

- The Approved Document G (2015) restricts new build dwellings to a maximum consumption of 125 litres per person per day. The Water Efficiency Calculator of New Dwellings also includes an allowance for external water use.
- The Code for Sustainable Homes was first introduced in April 2007. While now disbanded, Included within the Code was mandatory water efficiency standards. Homes constructed to Code for Sustainable Homes Level 3 and 4 must achieve a maximum internal water consumption of 105 litres per person per day. Dwellings constructed to Code Levels 5 and 6 must achieve an internal water consumption of 80 litres per person per day.

- Part L 2021 and SAP10 will take account of Part G and water consumption in the calculation of the forecasted energy demand of a dwelling.



The below table details the recommended sanitary ware fittings to be adopted by Avant Homes West Yorkshire to meet with the requirement to achieve 125 Litres per person per day as required by Building Regulations Part G 2015.

| Installation Type | Unit of Measurement | Capacity/Flow Rate | Use Factor | Fixed Use | Litres Per Person Per Day |
|------------------------------|-------------------------------|--------------------|-------------|--------------|---------------------------|
| WC (Dual Flush) | Full Flush (litres) | 4 | 1.46 | 0.00 | 5.84 |
| | Part Flush (litres) | 2.6 | 2.96 | 0.00 | 7.70 |
| Taps (excluding kitchen tap) | Flow rate (litres/minute) | 6 | 1.58 | 1.58 | 11.06 |
| Baths (where shower present) | Capacity to overflow (litres) | 180 | 0.11 | 0.00 | 19.80 |
| Showers (where bath present) | Flow rate (litres/minute) | 9 | 4.37 | 0.00 | 39.33 |
| Kitchen sink tap | Flow rate (litres/minute) | 6 | 0.44 | 10.36 | 13.00 |
| Washing Machine | Litres/kg dry load | 8.17 | 2.1 | 0.00 | 17.16 |
| Dishwasher | Litres/place setting | 1.25 | 3.60 | 0.00 | 4.50 |
| Total | | | | | 118.38 |

| | |
|---|---------------|
| Contribution from Greywater (litres/person/day) | 0 |
| Contribution from Rainwater (litres/person/day) | 0 |
| Total Internal Water Consumption | 118.38 |
| Normalisation Factor | 0.91 |
| Water Consumption with Normalisation Factor | 107.73 |
| External Use | 5.00 |
| Part G Water Consumption | 112.73 |

Table 2 – Water Consumption

Renewable Technologies

There are a number of recognised renewable technologies which have the potential to reduce the energy consumption of a dwelling. However given the nature of the development, we judge that the following technologies are worthy of consideration;

- Solar thermal panels.
- Biomass
- Photovoltaic panels.
- Air source heat pumps.
- Combined Heat & Power
- Wind Power

Solar Thermal

Solar thermal panels use radiant solar energy to heat water for domestic consumption. The system works successfully across the UK as they can work in diffuse weather conditions. In comparison to other technologies it is considered a reliable and proven technology. The system works most efficiently when the panel or evacuated tube is mounted on a 10-60° pitch facing due south, though other combinations do work successfully. During late spring to early autumn months, the system can be expected to meet some 70-90% of a dwellings domestic hot water needs.

Most systems in the UK are two panel systems, typically 4 sq m in size and accompanied with a 180-250 litre cylinder with a dedicated solar storage capacity of 65-110 litres. The typical installation costs for solar thermal vary, especially when large volumes are considered. However a rough estimate is £3500 per plot.

Occupants can expect annual savings in the region of £50-85 per year, which is relatively modest. Solar thermal panels do not qualify for feed in tariffs, however it is expected that solar thermal systems will benefit from the Renewable Heat Incentive. A 20-25 year payback can be expected, dependent on usage and dwelling type.

Taking into consideration the requirement of the development, a standard two panel system is unfeasible and is not recommended for consideration.



Biomass

Biomass boilers offer an environmentally sound, heating solution. Heating is generated by burning biomass, such as wood pellets or logs. This will emit the same amount of CO₂ as is absorbed while the plants were growing, therefore, the biomass is classed as carbon neutral.

Unfortunately, such a provision for this development is both unfeasible and out of proportion to the requirement.



Photovoltaic

Photovoltaic panels convert sunlight into electricity for use within a dwelling. PV panels use cells to convert light into electricity. A PV cell usually consists of 1 or 2 layers of a semi-conducting material such as silicon. The greater the intensity of sunlight, the more electricity is generated. PV systems can come in different forms. The most aesthetically pleasing are PV tiles which resemble roof tiles. However the most popular are modules which can either sit on the roof or be integrated into it. The technology is most efficient when oriented due south. However panels orientated south of east or west are suitable. Generally panels orientated away from due south require a greater surface area to generate a set amount of energy.

PV is a viable option and if installed on a select number of plots across a development, this would be the most cost effective solution to a site wide CO2 reduction. As a result Avant Homes West Yorkshire have confirmed that PV will be installed on all plots. The PV array to achieve 75% compliance under current Part L is confirmed on a housetype basis on table 6.



Air Source Heat Pumps

Air source heat pumps extract heat from the outside air. The heat is absorbed into a fluid, which is pumped through a heat exchanger. Low grade heat is then extracted by the refrigeration system and after passing through the compressor is concentrated into a higher temperature. This energy is then used to heat water for space and hot water use within the dwelling. While heat pumps use national grid electricity, and so are not a renewable resource, they utilise a heat source which is naturally renewed in our environment and so are considered a low carbon technology.

Heat pumps have stated CoPs in the region of 2-4, though test results outside of the laboratory have produced mixed results. Typically the heat pump is located on an external wall. It is generally accepted that 1kW in heat pump size will provide enough heating for 20m² of floor space.

ASHPs will be installed within, and utilised as the main heating source for, all dwellings within the development.



Combined Heat and Power (CHP)

Combined heat and power utilises the waste energy in the generation of electricity to provide space heating and hot water to a development. In conventional means of power generation copious amounts of energy is wasted in the form of heat. The utilisation of this waste heat can see efficiencies of CHP systems typically exceed 90%.

Combined heat and power is not a renewable technology but instead is a DECC recognised low carbon technology which qualified for the Low Carbon Building Programme. To qualify as a renewable technology the use of biomass pellet or bio-diesel would be required. At the present time biomass CHP is very much in its infancy in the UK. Furthermore it is imagined there will be significant problems in locating a sustainable and local source of pellet. Without such a source the reliability of such a system and the net carbon benefit of pellet sourced from a distance are questionable. As a result we do not recommend CHP for consideration on this development.



Wind Power

The principle of harnessing wind power is well established in the UK with access to over 40% of the total European wind resource. Until recently, developments have been concentrated within coastal regions; however technological advances mean that wind power is viable in many urban locations.

Wind turbines are a means of capturing the power within a moving air mass (wind) and converting it into electricity. As yet there is no simple and practical method of incorporating wind generated electricity to sites containing a number of buildings, or requiring high energy usage.

Furthermore, the urban location also means that it would prove difficult to harness sufficient wind energy to meet the needs of the development. The high density of urban areas obstructs air patterns and reduces the efficiency of the turbine. The size of the turbine required is also likely to detract unacceptably from the local area and generate a significant amount of noise, both of which prejudice local residential amenity.

For these reasons, together with the high installation costs, potential noise pollution and high likelihood of not achieving planning approval we are not proposing to employ wind turbines on this site.



Energy Strategy

The Context

The proposed works fall under the scope of Approved Document L 2021. The Approved Document sets minimum fabric energy efficiency standards and a maximum CO2 emission rate for residential buildings. To place the proposed energy strategy into its correct regulatory context it is worthwhile summarising the minimum standards included in the Approved Document.

| Element | Part L 2021 Minimum Standard |
|-----------------|------------------------------|
| External Walls | 0.26W/m2K |
| Roof | 0.16W/m2K |
| Floor | 0.20W/m2K |
| Glazing & Doors | 1.80W/m2K |
| Air Test | 8.00m3/h.m2 at 50Pa |

Table 3 – Minimum Fabric Efficiency Standards

Proposed Strategy

The National Planning Policy Framework requires that all development proposals are in line with the Government’s zero carbon buildings programme.

The figures and calculations detailed in this report have been taken from SAP10 (2021 Building Regulations).

In response to this guidance, and recent shifts within the industry, Avant Homes West Yorkshire proposes the adoption of a strategy which addresses the core policy goals of sustainable construction:-

- Reduced CO2 emissions to combat the causes of climate change.
- Reduced energy consumption to address legitimate concerns of energy security.

By reducing the energy requirement of the building, the sustainable credentials of each development are enhanced and are not validated by simply bolting on expensive renewable equipment. By focusing on fabric performance and the provision of efficient heating systems each dwelling is intrinsically “green”.

Before the potential of various technologies can be assessed, it is first necessary to calculate the base line energy consumption of the development and hence the target reduction.

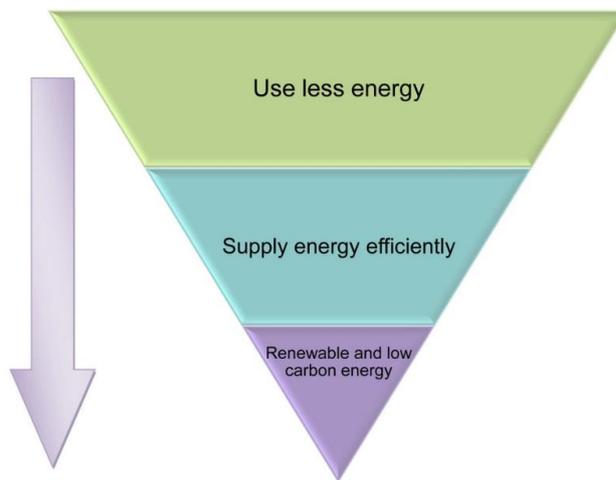
The proposed dwellings were modelled in SAP10 to determine the energy consumption and corresponding CO2 emissions of the development. Standard Assessment Procedure, or SAP, is the Government’s approved methodology for the calculation of energy consumption and CO2 emissions for new build dwellings.

In line with best practice, the proposed energy strategy for Land off Thurnscoe Bridge Lane will adhere to the principles of the Energy Hierarchy;

- Be Lean – reduce the need for energy.
- Be Clean – supply and use energy in the most efficient manner.
- Be Green – supply energy from renewable sources.

Adhering to the principles of the Energy Hierarchy has a number of benefits. The principle benefits are;

- By reducing the energy requirement of each dwelling the renewable requirement shrinks in proportion. This has obvious cost benefits.
- The sustainable credentials of each development are enhanced and are not validated by simply bolting on expensive renewable equipment. By focusing on the fabric performance and the provision of efficient heating systems each dwelling is intrinsically “green”.



Be Lean.

Avant Homes West Yorkshire have confirmed Lean measures equal to a 7.01% reduction in fabric heat loss across the building envelope. This greatly reduces the need for energy within a dwelling.

Be Clean.

Avant Homes West Yorkshire have confirmed Clean measures which include high efficiency combi gas boilers with time, temperature & zone controls to allow the user to maximise the control to ensure efficient use of the main heating system. 100% Low Energy Lighting to be installed alongside natural ventilation and trickle ventilation.

Be Green.

Avant Homes West Yorkshire have confirmed Green measures where Photovoltaic panels will be installed along with EV charging points to promote the use of electric/hybrid vehicles.

Establishing a Baseline

To adequately ascertain the potential of Avant Homes West Yorkshire preferred strategy, a baseline energy consumption associated with the development must be calculated. As such the development was modelled in SAP10 to determine the current CO² emission and associated energy requirement prior to the incorporation of improved fabric efficiencies and renewable technologies. The table below summarises the results calculated.

| House Type | No | Baseline Emission Rate (kg/year) | Baseline Energy Rate (kWh/year) |
|------------------------|------------|----------------------------------|---------------------------------|
| HT - B3 - SEMI | 8 | 8,228.08 | 43,070.20 |
| HT - Baildon - SEMI | 40 | 41,379.54 | 216,575.46 |
| HT - Bramley - SEMI | 6 | 4,142.44 | 21,690.09 |
| HT - Cadeby - DET | 9 | 9,245.85 | 48,317.30 |
| HT - Cookbury - DET | 7 | 8,718.58 | 45,677.43 |
| HT - Dalton - DET | 12 | 16,052.33 | 84,054.54 |
| HT - Denborough - SEMI | 16 | 12,294.84 | 64,499.37 |
| HT - Eastbeck - SEMI | 14 | 13,594.96 | 71,373.56 |
| HT - Ferndale - SEMI | 13 | 11,456.83 | 59,778.14 |
| HT - Leyburn - DET | 21 | 21,476.50 | 112,161.20 |
| HT - Oakwood - SEMI | 14 | 14,057.88 | 73,589.31 |
| HT - R2.1 - SEMI | 10 | 9,169.73 | 47,911.08 |
| HT - Ripley - END | 61 | 55,935.37 | 292,257.61 |
| HT - Ripley - MID | 1 | 815.77 | 4,246.75 |
| HT - Salbury - SEMI | 38 | 43,982.80 | 230,060.89 |
| HT - Totley - SEMI | 6 | 4,785.77 | 25,014.53 |
| HT - WAB - SEMI | 10 | 5,989.01 | 31,984.10 |
| HT - Wentbridge - DET | 10 | 11,944.13 | 62,544.75 |
| Total | 296 | <u>293,270.40</u> | <u>1,534,806.29</u> |

Table 4 – Baseline Energy Consumption & CO²

The calculations summarised in the table above confirm Land off Thurnscoe Bridge Lane has a baseline site wide energy requirement of 1,534,806.29 kWh/year and an associated CO₂ emission rate of 293,270.40 kgCO₂/year.

Fabric and Building Services Specification

Avant Homes West Yorkshire proposes a series of fabric and building service enhancements that exceeds the minimum requirements of Part L 2021. By placing a significant emphasis on the performance of the fabric of each property, reductions in energy and carbon will be achieved. The following table details the anticipated fabric efficiency and building services standards to be incorporated into the design. These measures constitute the lean efforts.

| Element | Part L 2021 | Enhanced Specification |
|---------------------------|--|--|
| Wall | 0.26W/m ² K | 0.24W/m ² K |
| Roof | 0.16W/m ² K | 0.09/0.15W/m ² K |
| Floor | 0.20W/m ² K | 0.11W/m ² K |
| Glazing & Doors | 1.80W/m ² K | 0.86/1.30W/m ² K |
| Air Test | 8.00m ³ /h.m ² at 50Pa | 4.00m ³ /h.m ² at 50Pa |
| Renewables (PV) | 40% of Floor Area / 6.50 | See Table 6 |
| Waste Water Heat Recovery | N/A | 1x |

Table 5 – Enhanced Specification Summary & Comparison

The U-values above show that the minimum requirements of Part L have been exceeded.

In addition to the summary above the following additional measures will be incorporated into the design, constituting the **clean** measures to reduce energy consumption;

- Avant Homes West Yorkshire have adopted a set of bespoke thermal bridging details which is being implemented on the site. These reduce thermal bridging throughout junctions and penetrations through the building fabric.
- Efficient independent heating systems will be provided with a programmer, room thermostats and thermostatic radiator valves. These will allow the eventual occupants to exercise control over their heating system and thus reduce energy consumption.
- Energy efficient lamps will be installed in each light fitting

- Water consumption is now included in the calculation of a property's energy consumption. Thus each property will adhere to the requirements of Approved Document G– maximum internal water consumption of 125 litres per person per day.
- All dwellings will have PV to achieve compliance. Please see Table 6 (below) which confirms the PV array required on a housetype basis.

It is clear that the proposed strategy places a great importance on the efficiency of a buildings thermal envelope and internal building services. This emphasis is to be encouraged. It recognises that it is inherently more sustainable to invest resources in reducing a property's long term energy consumption in contrast to short term generation benefits.

| Housetype | Dwelling Type | Total kWp |
|------------|---------------|-----------|
| B3 | Semi | 0.80 |
| Baildon | Semi | 0.90 |
| Bramley | Semi | 0.67 |
| Cadeby | Det | 1.10 |
| Cookbury | Det | 1.30 |
| Dalton | Det | 1.30 |
| Denborough | Semi | 0.67 |
| Eastbeck | Semi | 0.67 |
| Ferndale | Semi-End | 0.90 |
| Leyburn | Det | 1.10 |
| Oakwood | Semi | 1.10 |
| R2.1 | Semi | 0.70 |
| Ripley | Semi-End | 0.90 |
| Ripley | Mid | 0.90 |
| Salbury | Semi | 1.10 |
| Totley | Semi | 0.67 |
| WAB (Aff) | Semi | 0.67 |
| Wentbridge | Det | 1.20 |

Table 6 – PV Array

Reduced Emission Rate & Energy Requirement

To determine the benefits of the proposed specification, the development was again modelled in SAP10. The table below summarises the results calculated.

| House Type | No | Enhanced Emission Rate (kg/year) | Enhanced Energy Rate (kWh/year) |
|------------------------|------------|----------------------------------|---------------------------------|
| HT - B3 - SEMI | 8 | 2,014.61 | 22,068.79 |
| HT - Baildon - SEMI | 40 | 10,282.62 | 113,642.52 |
| HT - Bramley - SEMI | 6 | 700.03 | 8,100.86 |
| HT - Cadeby - DET | 9 | 2,277.85 | 25,689.08 |
| HT - Cookbury - DET | 7 | 2,134.15 | 24,046.41 |
| HT - Dalton - DET | 12 | 3,892.33 | 43,398.11 |
| HT - Denborough - SEMI | 16 | 2,090.77 | 23,794.09 |
| HT - Eastbeck - SEMI | 14 | 3,366.06 | 36,688.97 |
| HT - Ferndale - SEMI | 13 | 2,796.01 | 31,545.24 |
| HT - Leyburn - DET | 21 | 5,258.42 | 59,466.28 |
| HT - Oakwood - SEMI | 14 | 3,457.05 | 39,224.26 |
| HT - R2.1 - SEMI | 10 | 2,284.77 | 25,086.42 |
| HT - Ripley - END | 61 | 13,796.77 | 154,944.70 |
| HT - Ripley - MID | 1 | 196.28 | 2,240.30 |
| HT - Salisbury - SEMI | 38 | 10,725.63 | 119,563.76 |
| HT - Totley - SEMI | 6 | 898.96 | 10,079.64 |
| HT - WAB - SEMI | 10 | 1,343.10 | 15,244.19 |
| HT - Wentbridge - DET | 10 | 2,962.14 | 33,231.21 |
| Total | 296 | 70,477.55 | 788,054.84 |

Table 7 – Reduced Emission Rate & Energy Requirement

The calculations summarised in the table above confirm Land off Thurnscoe Bridge Lane has a reduced energy requirement of 788,054.84 kWh/year and an associated emission rate of 70,477.55 kgCO₂/year. These are respectively 48.65% and 75.97% reductions over the baseline calculated previously.

Evaluation

The FES Group was instructed by Avant Homes West Yorkshire to review the performance of the proposed Energy Strategy for the development at Land off Thurnscoe Bridge Lane. The energy strategy was detailed previously but can be best summarised as follows;

- Avant Homes West Yorkshire proposes an energy strategy, which addresses the two policy concerns of sustainable design and construction: climate change and energy security.
- Avant Homes West Yorkshire has proposed a fabric first strategy, which aims to achieve long term reductions in CO2 emissions and climate change.
- The proposed fabric and building services specification will permanently reduce regulated emissions by 75.97% and the proposed energy demand by 48.65% This is a significant betterment and demonstrates that the proposed development will have a reduced reliance on national resources (gas and electricity) and meets the requirements of Barnsley Borough Pre-App Planning Consultation 2024/ENQ/00177

After detailed analysis we can conclude that the preferred energy strategy adheres to the principles and aspirations of sustainable design and construction as advanced by national and local government and the house building industry. We therefore recommend the adoption of the preferred energy strategy by Avant Homes West Yorkshire.

Future Energy Surveys Ltd T/A The FES Group and its staff shall not to be held liable for any damage or loss sustained as a result of using of the information provided in this report. The report is based on drawings and information provided by the client and/or project design team at the time of issue. The information and the drawings provided to us determine the results within the report. If anything changes during the course of the ongoing design or construction, the reduction and calculations will be incorrect. The FES Group will not be held responsible for the implications of such change.

As such this report should be viewed as providing a reasonable assessment of the predicted performance of the development based on current knowledge.

Appendix A

Summary for Input Data



| | | | | |
|----------------------|---|---------------|----------------|------------|
| Property Reference | 009423 - HT - B3 - SEMI | | Issued on Date | 04/11/2024 |
| Assessment Reference | Ideal HP290 | Prop Type Ref | HT - B3 - SEMI | |
| Property | Plot , HT - B3 - SEMI, Land off Thurnscoe Bridge Lane | | | |

| | | | | | |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating | 88 B | DER | 2.85 | TER | 11.64 |
| Environmental | 98 A | % DER < TER | | | 75.52 |
| CO ₂ Emissions (t/year) | 0.24 | DFEE | 34.73 | TFEE | 36.29 |
| Compliance Check | See BREL | % DFEE < TFEE | | | 4.29 |
| % DPER < TPER | 48.76 | DPER | 31.22 | TPER | 60.93 |

| | | | |
|------------------|--------------------|-------------|-----------|
| Assessor Details | Mr. George Leadley | Assessor ID | P719-0001 |
| Client | | | |

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

| | |
|--------------------------------|----------------------------|
| Orientation | East |
| Property Tenture | ND |
| Transaction Type | 6 |
| Terrain Type | Suburban |
| 1.0 Property Type | House, Semi-Detached |
| Which Floor | 0 |
| 2.0 Number of Storeys | 3 |
| 3.0 Date Built | 2024 |
| 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 | 176.99 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: | 16.19 m | 32.77 m ² | 2.31 m |
| 1st Storey: | 16.19 m | 32.77 m ² | 2.63 m |
| 2nd Storey: | 16.19 m | 22.82 m ² | 2.45 m |

| | |
|-----------------|----------------------|
| 8.0 Living Area | 15.38 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 | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.24 | 60.00 | 89.98 | 74.75 | 0.00 | None | 15.23 | Enter Gross Area | |
| Gable Panel Wall | Timber Frame | Timber framed wall (one layer of plasterboard) | 0.23 | 9.00 | 14.16 | 14.16 | 0.00 | None | 0.00 | Enter Gross Area | |
| Sheltered Stud Wall | Timber Frame | Timber framed wall (one layer of plasterboard) | 0.11 | 9.00 | 13.31 | 13.31 | 0.00 | None | 0.00 | Enter Gross Area | |

| 9.1 Party Walls | Description | Type | Construction | U-Value (W/m ² K) | Kappa (kJ/m ² K) | Area (m ²) | Shelter Res | Shelter |
|-----------------|---------------------------------|---|--------------|------------------------------|-----------------------------|------------------------|-------------|---------|
| Party Wall | Filled Cavity with Edge Sealing | Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill | 0.00 | 110.00 | 45.66 | 0.00 | None | |
| Party Wall | Filled Cavity with Edge Sealing | Double plasterboard on both sides, twin timber f rame with/without sheathing board | 0.00 | 20.00 | 14.16 | 0.00 | None | |

| 9.2 Internal Walls | Description | Construction | Kappa (kJ/m ² K) | Area (m ²) |
|-----------------------|------------------------------|--------------|-----------------------------|------------------------|
| Ground Floor - Timber | Plasterboard on timber frame | 9.00 | 52.30 | |
| First Floor - Timber | Plasterboard on timber frame | 9.00 | 57.86 | |
| Second Floor - Timber | Plasterboard on timber frame | 9.00 | 38.02 | |

| 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 |
|---------------------|-------------|------|--------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------|----------------|------------------|----------|
|---------------------|-------------|------|--------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------|----------------|------------------|----------|

Summary for Input Data



| | | | | | | | | | | |
|-----------------------|---------------------|-------------------------------|------|------|-------|-------|------|------|------------------|------|
| Sloping Cassette Roof | External Slope Roof | Plasterboard, insulated slope | 0.15 | 9.00 | 12.79 | 11.26 | None | 0.00 | Enter Gross Area | 1.53 |
| Sheltered Stud Roof | External Slope Roof | Plasterboard, insulated slope | 0.11 | 9.00 | 22.97 | 22.97 | None | 0.00 | Enter Gross Area | 0.00 |

10.2 Internal Ceilings

| Description | Storey | Construction | Area (m ²) |
|--------------|-----------------|--|------------------------|
| Ground Floor | Lowest occupied | Plasterboard ceiling, carpeted chipboard floor | 32.77 |
| First Floor | +1 | Plasterboard ceiling, carpeted chipboard floor | 22.82 |

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) |
|--------------|----------------------|-----------------|------------------------------------|------------------------------|--------------|----------------|-----------------------------|------------------------|
| Ground Floor | Ground Floor - Solid | Lowest occupied | Suspended concrete floor, carpeted | 0.10 | None | 0.00 | 75.00 | 32.77 |

11.2 Internal Floors

| Description | Storey Index | Construction | Kappa (kJ/m ² K) | Area (m ²) |
|--------------|--------------|--|-----------------------------|------------------------|
| First Floor | | Plasterboard ceiling, carpeted chipboard floor | 9.00 | 32.77 |
| Second Floor | | Plasterboard ceiling, carpeted chipboard floor | 9.00 | 22.82 |

12.0 Opening Types

| Description | Data Source | Type | Glazing | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m ² K) |
|-------------|---------------------------|-------------|------------------------|-------------|--------------|---------|------------|--------------|------------------------------|
| Solid Doors | Manufacturer | Solid Door | | | | 0.00 | | | 1.30 |
| Windows | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.38 | | 1.00 | 0.86 |
| Patio Doors | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.35 | | 1.00 | 0.89 |
| Rooflights | Manufacturer | Roof Window | Double Low-E Soft 0.05 | | | 0.63 | | 0.70 | 1.30 |

13.0 Openings

| Name | Opening Type | Location | Orientation | Area (m ²) | Pitch |
|------------------|--------------|-----------------------|-------------|------------------------|-------|
| Front Door | Solid Doors | External Wall | East | 2.15 | 0 |
| Front Windows | Windows | External Wall | East | 4.86 | 0 |
| LH Windows | Windows | External Wall | South | 1.44 | 0 |
| Rear Windows | Windows | External Wall | West | 3.92 | 0 |
| Rear Patio Doors | Patio Doors | External Wall | West | 2.86 | 0 |
| Rear RL | Rooflights | Sloping Cassette Roof | West | 1.53 | 40 |

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 |
|--|--------------------------|--------|------|------------------------|----------|
| E1 Steel lintel with perforated steel base plate | Non Gov Approved Schemes | 11.01 | 0.27 | 0.27 Knauf PSI Details | No |
| E3 Sill | Non Gov Approved Schemes | 8.63 | 0.02 | 0.02 Knauf PSI Details | No |
| E4 Jamb | Non Gov Approved Schemes | 27.00 | 0.02 | 0.02 Knauf PSI Details | No |
| E5 Ground floor (normal) | Independently assessed | 7.98 | 0.04 | 0.04 FES - Para | No |
| E6 Intermediate floor within a dwelling | Non Gov Approved Schemes | 32.39 | 0.00 | 0.00 Knauf PSI Details | No |
| E11 Eaves (insulation at rafter level) | Independently assessed | 7.98 | 0.05 | 0.05 NYT PSI Details | No |
| E13 Gable (insulation at rafter level) | Independently assessed | 10.73 | 0.06 | 0.06 NYT PSI Details | No |
| E16 Corner (normal) | Non Gov Approved Schemes | 11.11 | 0.04 | 0.04 Knauf PSI Details | No |
| E18 Party wall between dwellings | Non Gov Approved Schemes | 11.11 | 0.04 | 0.04 Knauf PSI Details | No |
| P1 Party wall - Ground floor | Independently assessed | 8.22 | 0.07 | 0.07 FES | No |
| P2 Party wall - Intermediate floor within a dwelling | Table K1 - Default | 16.43 | 0.00 | 0.00 Default | No |
| P5 Party wall - Roof (insulation at rafter level) | Independently assessed | 10.73 | 0.07 | 0.07 NYT PSI Details | No |
| R1 Head of roof window | Independently assessed | 1.56 | 0.09 | 0.09 Velux | No |
| R2 Sill of roof window | Independently assessed | 1.56 | 0.09 | 0.09 Velux | No |
| R3 Jamb of roof window | Independently assessed | 3.92 | 0.09 | 0.09 Velux | No |
| R4 Ridge (vaulted ceiling) | Independently assessed | 3.99 | 0.05 | 0.05 NYT PSI Details | No |
| E5 Ground floor (normal) | Independently assessed | 8.22 | 0.06 | 0.06 FES - Perp | No |

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

| | |
|--|---|
| Mechanical Ventilation System Present | <input type="text" value="Yes"/> |
| Approved Installation | <input type="text" value="Yes"/> |
| Mechanical Ventilation data Type | <input type="text" value="Database"/> |
| Type | <input type="text" value="Mechanical extract ventilation - decentralised"/> |
| MV Reference Number | <input type="text" value="500776"/> |
| Duct Type | <input type="text" value="Flexible"/> |
| Wet Rooms | <input type="text" value="3"/> |
| SFP from Installer Commissioning Certificate | <input type="text" value="No"/> |

Summary for Input Data



19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

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

21.0 Fixed Cooling System

No

22.0 Pressure Testing

| | | |
|---------------------------|-------------|---|
| Designed AP ₅₀ | 4.00 | 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 |
|-------------------|----------|-------|----------|-------|
| Internal Lighting | 108.00 | 8.00 | 864.00 | 10 |
| External Lighting | 102.50 | 4.00 | 410.00 | 1 |

24.0 Main Heating 1

| | | |
|------------------------|----------------------|---|
| Percentage of Heat | 100.00 | % |
| Database Ref. No. | 107964 | |
| Fuel Type | Electricity | |
| SAP Code | 104 | |
| In Winter | 279.59 | |
| In Summer | 207.02 | |
| Model Name | HP290 Monobloc 4.5kW | |
| Manufacturer | Midea | |
| System Type | Heat Pump | |
| Controls SAP Code | 2207 | |
| PCDF Controls | 0 | |
| Delayed Start Stat | Yes | |
| Burner Control | On/Off | |
| HETAS approved System | No | |
| Is MHS Pumped | Pump in heated space | |
| Heating Pump Age | 2013 or later | |
| Heat Emitter | Radiators | |
| Flow Temperature | Enter value | |
| Flow Temperature Value | 45.00 | |

Summary for Input Data



25.0 Main Heating 2

26.0 Heat Networks

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

27.0 Secondary Heating

28.0 Water Heating

Water Heating

SAP Code

Flue Gas Heat Recovery System

Waste Water Heat Recovery Instantaneous System 1

Waste Water Heat Recovery Instantaneous System 2

Waste Water Heat Recovery Storage System

Solar Panel

Water use <= 125 litres/person/day

Summer Immersion

Cold Water Source

Bath Count

Baths connected to WWHRS

Supplementary Immersion

Immersion Only Heating Hot Water

28.1 Showers

| Description | Shower Type | Flow Rate [l/min] | Rated Power [kW] | Connected | Connected To |
|-------------|---|-------------------|------------------|-----------|------------------------|
| Shower | Combi boiler or unvented hot water system | 9.00 | | Yes | Instantaneous System 1 |

28.3 Waste Water Heat Recovery System Instantaneous System 1

Database ID

Brand Model

Details

29.0 Hot Water Cylinder

Hot Water Cylinder

Cylinder Stat

Cylinder In Heated Space

Independent Time Control

Insulation Type

Insulation Thickness

Cylinder Volume L

Loss kWh/day

Pipes insulation

In Airing Cupboard

31.0 Thermal Store

Thermal Store

Thermal Store Pipework

32.0 Photovoltaic Unit

Photovoltaic Unit

Export Capable Meter?

Connected To Dwelling

Diverter

Summary for Input Data



| | | | | | | | | | | |
|------------------------|-----------------------------------|------------------|--------------------|--------------|------------------------|---------------------------|----------------------------------|---------------------------|--|--|
| Battery Capacity [kWh] | <input type="text" value="0.00"/> | | | | | | | | | |
| PV Cells kWp | Orientation | Elevation | Overshading | FGHRS | MCS Certificate | Overshading Factor | MCS Certificate Reference | Panel Manufacturer | | |
| 0.80 | East | 45° | None Or Little | No | No | 1.00 | | | | |

34.0 Small-scale Hydro

| | | | | | | | | | | | |
|---|-------------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| | <input type="text" value="None"/> | | | | | | | | | | |
| Electricity Generated | <input type="text" value="0.00"/> | | | | | | | | | | |
| Apportioned | <input type="text" value="0.00"/> | | | | | | | | | | |
| Connected to dwelling's electricity meter | <input type="text" value="Yes"/> | | | | | | | | | | |
| Electricity Generation | <input type="text" value="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 | 009423 - HT - Baildon - SEMI | | Issued on Date | 04/11/2024 |
| Assessment Reference | Ideal HP290 | Prop Type Ref | HT - Baildon - SEMI | |
| Property | Plot , HT - Baildon - SEMI, Land off Thurnscoe Bridge Lane | | | |

| | | | | | |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating | 87 B | DER | 2.89 | TER | 11.63 |
| Environmental | 98 A | % DER < TER | | | 75.15 |
| CO ₂ Emissions (t/year) | 0.25 | DFEE | 34.82 | TFEE | 36.43 |
| Compliance Check | See BREL | % DFEE < TFEE | | | 4.41 |
| % DPER < TPER | 47.52 | DPER | 31.94 | TPER | 60.87 |

| | | | |
|------------------|--------------------|-------------|-----------|
| Assessor Details | Mr. George Leadley | Assessor ID | P719-0001 |
| Client | | | |

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

| | |
|--------------------------------|----------------------------|
| Orientation | East |
| Property Tenure | ND |
| Transaction Type | 6 |
| Terrain Type | Suburban |
| 1.0 Property Type | House, Semi-Detached |
| Which Floor | 0 |
| 2.0 Number of Storeys | 3 |
| 3.0 Date Built | 2024 |
| 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 | 175.95 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: | 16.19 m | 32.77 m ² | 2.31 m |
| 1st Storey: | 16.19 m | 32.77 m ² | 2.63 m |
| 2nd Storey: | 16.19 m | 23.41 m ² | 2.44 m |

| | |
|-----------------|----------------------|
| 8.0 Living Area | 15.38 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 | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.24 | 60.00 | 89.98 | 74.75 | 0.00 | None | 15.23 | Enter Gross Area | |
| Gable Panel Wall | Timber Frame | Timber framed wall (one layer of plasterboard) | 0.23 | 9.00 | 14.16 | 14.16 | 0.00 | None | 0.00 | Enter Gross Area | |
| Sheltered Stud Wall | Timber Frame | Timber framed wall (one layer of plasterboard) | 0.11 | 9.00 | 13.79 | 13.79 | 0.00 | None | 0.00 | Enter Gross Area | |

| 9.1 Party Walls | Description | Type | Construction | U-Value (W/m ² K) | Kappa (kJ/m ² K) | Area (m ²) | Shelter Res | Shelter |
|-----------------|---------------------------------|---|--------------|------------------------------|-----------------------------|------------------------|-------------|---------|
| Party Wall | Filled Cavity with Edge Sealing | Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill | 0.00 | 110.00 | 45.66 | 0.00 | None | |
| Party Wall | Filled Cavity with Edge Sealing | Double plasterboard on both sides, twin timber f rame with/without sheathing board | 0.00 | 20.00 | 14.16 | 0.00 | None | |

| 9.2 Internal Walls | Description | Construction | Kappa (kJ/m ² K) | Area (m ²) |
|-----------------------|------------------------------|--------------|-----------------------------|------------------------|
| Ground Floor - Timber | Plasterboard on timber frame | 9.00 | 52.30 | |
| First Floor - Timber | Plasterboard on timber frame | 9.00 | 57.86 | |
| Second Floor - Timber | Plasterboard on timber frame | 9.00 | 37.48 | |

| 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 |
|---------------------|-------------|------|--------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------|----------------|------------------|----------|
|---------------------|-------------|------|--------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------|----------------|------------------|----------|

Summary for Input Data



| | | | | | | | | | | |
|-----------------------|---------------------|-------------------------------|------|------|-------|-------|------|------|------------------|------|
| Sloping Cassette Roof | External Slope Roof | Plasterboard, insulated slope | 0.15 | 9.00 | 13.57 | 11.50 | None | 0.00 | Enter Gross Area | 2.07 |
| Sheltered Stud Roof | External Slope Roof | Plasterboard, insulated slope | 0.11 | 9.00 | 22.38 | 22.38 | None | 0.00 | Enter Gross Area | 0.00 |

10.2 Internal Ceilings

| Description | Storey | Construction | Area (m ²) |
|--------------|-----------------|--|------------------------|
| Ground Floor | Lowest occupied | Plasterboard ceiling, carpeted chipboard floor | 32.77 |
| First Floor | +1 | Plasterboard ceiling, carpeted chipboard floor | 23.41 |

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) |
|--------------|----------------------|-----------------|------------------------------------|------------------------------|--------------|----------------|-----------------------------|------------------------|
| Ground Floor | Ground Floor - Solid | Lowest occupied | Suspended concrete floor, carpeted | 0.10 | None | 0.00 | 75.00 | 32.77 |

11.2 Internal Floors

| Description | Storey Index | Construction | Kappa (kJ/m ² K) | Area (m ²) |
|--------------|--------------|--|-----------------------------|------------------------|
| First Floor | | Plasterboard ceiling, carpeted chipboard floor | 9.00 | 32.77 |
| Second Floor | | Plasterboard ceiling, carpeted chipboard floor | 9.00 | 23.41 |

12.0 Opening Types

| Description | Data Source | Type | Glazing | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m ² K) |
|-------------|---------------------------|-------------|------------------------|-------------|--------------|---------|------------|--------------|------------------------------|
| Solid Doors | Manufacturer | Solid Door | | | | 0.00 | | | 1.30 |
| Windows | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.38 | | 1.00 | 0.86 |
| Patio Doors | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.35 | | 1.00 | 0.89 |
| Rooflights | Manufacturer | Roof Window | Double Low-E Soft 0.05 | | | 0.63 | | 0.70 | 1.30 |

13.0 Openings

| Name | Opening Type | Location | Orientation | Area (m ²) | Pitch |
|------------------|--------------|-----------------------|-------------|------------------------|-------|
| Front Door | Solid Doors | External Wall | East | 2.15 | 0 |
| Front Windows | Windows | External Wall | East | 4.86 | 0 |
| LH Windows | Windows | External Wall | South | 1.44 | 0 |
| Rear Windows | Windows | External Wall | West | 3.92 | 0 |
| Rear Patio Doors | Patio Doors | External Wall | West | 2.86 | 0 |
| Front RL | Rooflights | Sloping Cassette Roof | East | 0.54 | 40 |
| Rear RL | Rooflights | Sloping Cassette Roof | West | 1.53 | 40 |

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 |
|--|--------------------------|--------|------|------------------------|----------|
| E1 Steel lintel with perforated steel base plate | Non Gov Approved Schemes | 11.01 | 0.27 | 0.27 Knauf PSI Details | No |
| E3 Sill | Non Gov Approved Schemes | 8.63 | 0.02 | 0.02 Knauf PSI Details | No |
| E4 Jamb | Non Gov Approved Schemes | 27.00 | 0.02 | 0.02 Knauf PSI Details | No |
| E5 Ground floor (normal) | Independently assessed | 7.98 | 0.04 | 0.04 FES - Para | No |
| E6 Intermediate floor within a dwelling | Non Gov Approved Schemes | 32.39 | 0.00 | 0.00 Knauf PSI Details | No |
| E11 Eaves (insulation at rafter level) | Independently assessed | 7.98 | 0.05 | 0.05 NYT PSI Details | No |
| E13 Gable (insulation at rafter level) | Independently assessed | 10.73 | 0.06 | 0.06 NYT PSI Details | No |
| E16 Corner (normal) | Non Gov Approved Schemes | 11.11 | 0.04 | 0.04 Knauf PSI Details | No |
| E18 Party wall between dwellings | Non Gov Approved Schemes | 11.11 | 0.04 | 0.04 Knauf PSI Details | No |
| P1 Party wall - Ground floor | Independently assessed | 8.22 | 0.07 | 0.07 FES | No |
| P2 Party wall - Intermediate floor within a dwelling | Table K1 - Default | 16.43 | 0.00 | 0.00 Default | No |
| P5 Party wall - Roof (insulation at rafter level) | Independently assessed | 10.73 | 0.07 | 0.07 NYT PSI Details | No |
| R1 Head of roof window | Independently assessed | 2.11 | 0.09 | 0.09 Velux | No |
| R2 Sill of roof window | Independently assessed | 2.11 | 0.09 | 0.09 Velux | No |
| R3 Jamb of roof window | Independently assessed | 5.88 | 0.09 | 0.09 Velux | No |
| R4 Ridge (vaulted ceiling) | Independently assessed | 3.99 | 0.05 | 0.05 NYT PSI Details | No |
| E5 Ground floor (normal) | Independently assessed | 8.22 | 0.06 | 0.06 FES - Perp | No |

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

| | |
|---------------------------------------|---|
| Mechanical Ventilation System Present | <input type="text" value="Yes"/> |
| Approved Installation | <input type="text" value="Yes"/> |
| Mechanical Ventilation data Type | <input type="text" value="Database"/> |
| Type | <input type="text" value="Mechanical extract ventilation - decentralised"/> |
| MV Reference Number | <input type="text" value="500776"/> |
| Duct Type | <input type="text" value="Flexible"/> |
| Wet Rooms | <input type="text" value="4"/> |

Summary for Input Data



SFP from Installer Commissioning Certificate

19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

| | |
|--|--------------------------------|
| Number of open chimneys | <input type="text" value="0"/> |
| Number of open flues | <input type="text" value="0"/> |
| Number of chimneys/flues attached to closed fire | <input type="text" value="0"/> |
| Number of flues attached to solid fuel boiler | <input type="text" value="0"/> |
| Number of flues attached to other heater | <input type="text" value="0"/> |
| Number of blocked chimneys | <input type="text" value="0"/> |
| Number of intermittent extract fans | <input type="text" value="0"/> |
| Number of passive vents | <input type="text" value="0"/> |
| Number of flueless gas fires | <input type="text" value="0"/> |

21.0 Fixed Cooling System

22.0 Pressure Testing

| | | |
|---------------------------|--|---|
| Designed AP ₅₀ | <input type="text" value="4.00"/> | m ³ /(h.m ²) @ 50 Pa |
| Property Tested? | <input type="text" value="Yes"/> | |
| Test Method | <input type="text" value="Blower Door"/> | |

22.0 Lighting

| No Fixed Lighting | <input type="text" value="No"/> | | | | |
|-------------------|---------------------------------|----------|-------|----------|-------|
| | Name | Efficacy | Power | Capacity | Count |
| | Internal Lighting | 108.00 | 8.00 | 864.00 | 12 |
| | External Lighting | 102.50 | 4.00 | 410.00 | 1 |

24.0 Main Heating 1

| | | |
|-----------------------|---|---|
| Percentage of Heat | <input type="text" value="100.00"/> | % |
| Database Ref. No. | <input type="text" value="107972"/> | |
| Fuel Type | <input type="text" value="Electricity"/> | |
| SAP Code | <input type="text" value="104"/> | |
| In Winter | <input type="text" value="295.82"/> | |
| In Summer | <input type="text" value="202.59"/> | |
| Model Name | <input type="text" value="HP290 Monobloc 6kW"/> | |
| Manufacturer | <input type="text" value="Midea"/> | |
| System Type | <input type="text" value="Heat Pump"/> | |
| Controls SAP Code | <input type="text" value="2207"/> | |
| PCDF Controls | <input type="text" value="0"/> | |
| Delayed Start Stat | <input type="text" value="Yes"/> | |
| Burner Control | <input type="text" value="On/Off"/> | |
| HETAS approved System | <input type="text" value="No"/> | |
| Is MHS Pumped | <input type="text" value="Pump in heated space"/> | |
| Heating Pump Age | <input type="text" value="2013 or later"/> | |
| Heat Emitter | <input type="text" value="Radiators"/> | |
| Flow Temperature | <input type="text" value="Enter value"/> | |

Summary for Input Data



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

Flue Gas Heat Recovery System

Waste Water Heat Recovery Instantaneous System 1

Waste Water Heat Recovery Instantaneous System 2

Waste Water Heat Recovery Storage System

Solar Panel

Water use <= 125 litres/person/day

Summer Immersion

Cold Water Source

Bath Count

Baths connected to WWHRS

Supplementary Immersion

Immersion Only Heating Hot Water

28.1 Showers

| Description | Shower Type | Flow Rate [l/min] | Rated Power [kW] | Connected | Connected To |
|-----------------|---|-------------------|------------------|-----------|------------------------|
| Shower en-suite | Combi boiler or unvented hot water system | 9.00 | 9.30 | Yes | Instantaneous System 1 |
| | Combi boiler or unvented hot water system | 9.00 | 9.30 | No | |

28.3 Waste Water Heat Recovery System Instantaneous System 1

Database ID

Brand Model

Details

29.0 Hot Water Cylinder

Hot Water Cylinder

Cylinder Stat

Cylinder In Heated Space

Independent Time Control

Insulation Type

Insulation Thickness

Cylinder Volume L

Loss kWh/day

Pipes insulation

In Airing Cupboard

31.0 Thermal Store

Thermal Store

Thermal Store Pipework

32.0 Photovoltaic Unit

Photovoltaic Unit

Export Capable Meter?

Summary for Input Data



Connected To Dwelling

Diverter

Battery Capacity [kWh]

| PV Cells kWp | Orientation | Elevation | Overshading | FGHRS | MCS Certificate | Overshading Factor | MCS Certificate Reference | Panel Manufacturer |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 0.90 | East | 45° | None Or Little | No | No | 1.00 | | |

34.0 Small-scale Hydro

Electricity Generated

Apportioned kWh/Year

Connected to dwelling's electricity meter

Electricity Generation

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

Recommendations

Lower cost measures
None

Further measures to achieve even higher standards
None

Summary for Input Data



| | | | | |
|----------------------|--|---------------|---------------------|------------|
| Property Reference | 009423 - HT - Bramley - SEMI | | Issued on Date | 04/11/2024 |
| Assessment Reference | Ideal HP290 | Prop Type Ref | HT - Bramley - SEMI | |
| Property | Plot , HT - Bramley - SEMI, Land off Thurnscoe Bridge Lane | | | |

| | | | | | |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating | 93 A | DER | 1.94 | TER | 11.48 |
| Environmental | 99 A | % DER < TER | | | 83.10 |
| CO ₂ Emissions (t/year) | 0.11 | DFEE | 26.49 | TFEE | 30.63 |
| Compliance Check | See BREL | % DFEE < TFEE | | | 13.53 |
| % DPER < TPER | 62.65 | DPER | 22.45 | TPER | 60.11 |

| | | | |
|------------------|--------------------|-------------|-----------|
| Assessor Details | Mr. George Leadley | Assessor ID | P719-0001 |
| Client | | | |

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

| | | |
|--------------------------------|---------------------------|---------------------|
| Orientation | East | |
| Property Tenure | ND | |
| Transaction Type | 6 | |
| Terrain Type | Suburban | |
| 1.0 Property Type | Maisonette, Semi-Detached | |
| Position of Flat | Ground-floor flat | |
| Which Floor | 0 | |
| 2.0 Number of Storeys | 1 | |
| 3.0 Date Built | 2024 | |
| 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 | 268.93 | 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: | 18.32 m | 60.14 m ² | 2.31 m |
| | 1st Storey: | 16.19 m | 32.77 m ² | 2.62 m |

| | | |
|-----------------|-------|----------------|
| 8.0 Living Area | 25.00 | 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 | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.24 | 60.00 | 42.32 | 32.75 | 0.00 | None | 9.57 | 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 | Filled Cavity with Edge Sealing | Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill | 0.00 | 110.00 | 43.66 | 0.00 | None |

| Description | Construction | Kappa (kJ/m ² K) | Area (m ²) |
|-----------------------|------------------------------|-----------------------------|------------------------|
| Ground Floor - Timber | Plasterboard on timber frame | 9.00 | 76.18 |

| Description | Construction | Kappa (kJ/m ² K) | Area (m ²) |
|---------------|--|-----------------------------|------------------------|
| Party Ceiling | Precast concrete plank floor (screed laid on rubber), carpeted | 30.00 | 60.14 |

| Description | Type | Storey Index | Construction | U-Value (W/m ² K) | Shelter Code | Shelter Factor | Kappa (kJ/m ² K) | Area (m ²) |
|--------------|----------------------|-----------------|------------------------------------|------------------------------|--------------|----------------|-----------------------------|------------------------|
| Ground Floor | Ground Floor - Solid | Lowest occupied | Suspended concrete floor, carpeted | 0.10 | None | 0.00 | 75.00 | 60.14 |

Summary for Input Data



12.0 Opening Types

| Description | Data Source | Type | Glazing | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|-------------|---------------------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Solid Doors | Manufacturer | Solid Door | | | | 0.00 | | | 1.30 |
| Windows | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.38 | | 1.00 | 0.86 |
| Patio Doors | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.35 | | 1.00 | 0.89 |

13.0 Openings

| Name | Opening Type | Location | Orientation | Area (m²) | Pitch |
|------------------|--------------|---------------|-------------|-----------|-------|
| Front Door | Solid Doors | External Wall | East | 2.15 | 0 |
| Front Windows | Windows | External Wall | East | 3.37 | 0 |
| Rear Windows | Windows | External Wall | West | 1.19 | 0 |
| Rear Patio Doors | Patio Doors | External Wall | West | 2.86 | 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 |
|---|--------------------------|--------|------|------------------------|----------|
| E1 Steel lintel with perforated steel base plate | Non Gov Approved Schemes | 6.01 | 0.27 | 0.27 Knauf PSI Details | No |
| E3 Sill | Non Gov Approved Schemes | 3.63 | 0.02 | 0.02 Knauf PSI Details | No |
| E4 Jamb | Non Gov Approved Schemes | 15.90 | 0.02 | 0.02 Knauf PSI Details | No |
| E5 Ground floor (normal) | Independently assessed | 13.37 | 0.04 | 0.04 FES - Para | No |
| E16 Corner (normal) | Non Gov Approved Schemes | 4.62 | 0.04 | 0.04 Knauf PSI Details | No |
| E18 Party wall between dwellings | Non Gov Approved Schemes | 9.24 | 0.04 | 0.04 Knauf PSI Details | No |
| P1 Party wall - Ground floor | Independently assessed | 18.90 | 0.07 | 0.07 FES | No |
| E5 Ground floor (normal) | Independently assessed | 4.96 | 0.06 | 0.06 FES - Perp | No |
| E7 Party floor between dwellings (in blocks of flats) | Independently assessed | 18.32 | 0.06 | 0.06 Meadows + Ross | No |
| P3 Party wall - Intermediate floor between dwellings (in blocks of flats) | Table K1 - Default | 18.90 | 0.00 | 0.00 | No |

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

| | |
|--|---|
| Mechanical Ventilation System Present | <input type="text" value="Yes"/> |
| Approved Installation | <input type="text" value="Yes"/> |
| Mechanical Ventilation data Type | <input type="text" value="Database"/> |
| Type | <input type="text" value="Mechanical extract ventilation - decentralised"/> |
| MV Reference Number | <input type="text" value="500776"/> |
| Duct Type | <input type="text" value="Flexible"/> |
| Wet Rooms | <input type="text" value="2"/> |
| SFP from Installer Commissioning Certificate | <input type="text" value="No"/> |

19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

| | |
|--|--------------------------------|
| Number of open chimneys | <input type="text" value="0"/> |
| Number of open flues | <input type="text" value="0"/> |
| Number of chimneys/flues attached to closed fire | <input type="text" value="0"/> |
| Number of flues attached to solid fuel boiler | <input type="text" value="0"/> |
| Number of flues attached to other heater | <input type="text" value="0"/> |
| Number of blocked chimneys | <input type="text" value="0"/> |
| Number of intermittent extract fans | <input type="text" value="0"/> |

Summary for Input Data



Number of passive vents

Number of flueless gas fires

21.0 Fixed Cooling System

22.0 Pressure Testing

Designed AP₅₀ m²/(h.m²) @ 50 Pa

Property Tested?

Test Method

22.0 Lighting
No Fixed Lighting

| Name | Efficacy | Power | Capacity | Count |
|-------------------|----------|-------|----------|-------|
| Internal Lighting | 108.00 | 8.00 | 864.00 | 6 |
| External Lighting | 102.50 | 4.00 | 410.00 | 1 |

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

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

Flue Gas Heat Recovery System

Waste Water Heat Recovery Instantaneous System 1

Waste Water Heat Recovery Instantaneous System 2

Waste Water Heat Recovery Storage System

Solar Panel

Summary for Input Data

| | |
|------------------------------------|------------|
| Water use <= 125 litres/person/day | Yes |
| Summer Immersion | No |
| Cold Water Source | From mains |
| Bath Count | 1 |
| Baths connected to WWHRS | 0 |
| Supplementary Immersion | No |
| Immersion Only Heating Hot Water | No |

28.1 Showers

| Description | Shower Type | Flow Rate [l/min] | Rated Power [kW] | Connected | Connected To |
|-------------|---|-------------------|------------------|-----------|------------------------|
| Shower | Combi boiler or unvented hot water system | 9.00 | | Yes | Instantaneous System 1 |

28.3 Waste Water Heat Recovery System Instantaneous System 1

| | |
|-------------|---|
| Database ID | 80140 |
| Brand Model | RECOUP, Easyfit+ |
| Details | Year: 2017 + current Efficiency: 40.7 Utilisation factor: 0.956 |

29.0 Hot Water Cylinder

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

31.0 Thermal Store

| | |
|------------------------|------------------------|
| Thermal Store | None |
| Thermal Store Pipework | within a single casing |

32.0 Photovoltaic Unit

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

| PV Cells kWp | Orientation | Elevation | Overshading | FGHRS | MCS Certificate | Overshading Factor | MCS Certificate Reference | Panel Manufacturer |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 0.67 | East | 30° | None Or Little | No | No | 1.00 | | |

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 | 009423 - HT - Cadeby - DET | | Issued on Date | 04/11/2024 |
| Assessment Reference | Ideal HP290 | Prop Type Ref | HT- Cadeby - DET | |
| Property | Plot , HT - Cadeby - DET, Land off Thurnscoe Bridge Lane | | | |

| | | | | | |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating | 87 B | DER | 2.88 | TER | 11.69 |
| Environmental | 98 A | % DER < TER | | | 75.36 |
| CO ₂ Emissions (t/year) | 0.24 | DFEE | 38.47 | TFEE | 40.27 |
| Compliance Check | See BREL | % DFEE < TFEE | | | 4.47 |
| % DPER < TPER | 46.83 | DPER | 32.48 | TPER | 61.09 |

| | | | |
|------------------|--------------------|-------------|-----------|
| Assessor Details | Mr. George Leadley | Assessor ID | P719-0001 |
| Client | | | |

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

| | |
|--------------------------------|----------------------------|
| Orientation | East |
| 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 | 2024 |
| 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 | 194.37 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: | 27.18 m | 43.94 m ² | 2.31 m |
| 1st Storey: | 27.18 m | 43.94 m ² | 2.62 m |

| | |
|-----------------|----------------------|
| 8.0 Living Area | 12.35 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 | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.24 | 60.00 | 134.01 | 116.37 | 0.00 | None | 17.64 | Enter Gross Area | |

| 9.2 Internal Walls | Description | Construction | Kappa (kJ/m ² K) | Area (m ²) |
|-----------------------|-----------------------------------|--------------|-----------------------------|------------------------|
| Ground Floor - Timber | Plasterboard on timber frame | 9.00 | 42.69 | |
| Ground Floor - Block | Dense block, plasterboard on dabs | 75.00 | 50.68 | |
| First Floor - Timber | Plasterboard on timber frame | 9.00 | 115.18 | |

| 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 | 0.09 | 9.00 | 43.94 | 43.94 | None | 0.00 | Enter Gross Area | 0.00 | |

| 10.2 Internal Ceilings | Description | Storey | Construction | Area (m ²) |
|------------------------|-----------------|--|--------------|------------------------|
| Ground Floor | Lowest occupied | Plasterboard ceiling, carpeted chipboard floor | 43.94 | |

| 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) |
|-----------------------|----------------------|-----------------|------------------------------------|--------------|------------------------------|--------------|----------------|-----------------------------|------------------------|
| Ground Floor | Ground Floor - Solid | Lowest occupied | Suspended concrete floor, carpeted | 0.10 | None | 0.00 | 75.00 | 43.94 | |

Summary for Input Data



11.2 Internal Floors

| Description | Storey Index | Construction | Kappa (kJ/m²K) | Area (m²) |
|-------------|--------------|--|----------------|-----------|
| First Floor | | Plasterboard ceiling, carpeted chipboard floor | 9.00 | 43.94 |

12.0 Opening Types

| Description | Data Source | Type | Glazing | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|-------------|---------------------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Solid Doors | Manufacturer | Solid Door | | | | 0.00 | | | 1.30 |
| Windows | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.38 | | 1.00 | 0.86 |
| Patio Doors | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.35 | | 1.00 | 0.89 |

13.0 Openings

| Name | Opening Type | Location | Orientation | Area (m²) | Pitch |
|------------------|--------------|---------------|-------------|-----------|-------|
| Front Door | Solid Doors | External Wall | East | 2.15 | 0 |
| Front Windows | Windows | External Wall | East | 5.98 | 0 |
| LH Windows | Windows | External Wall | South | 0.82 | 0 |
| RH Windows | Windows | External Wall | North | 1.44 | 0 |
| Rear Windows | Windows | External Wall | West | 3.92 | 0 |
| Rear Patio Doors | Patio Doors | External Wall | West | 3.33 | 0 |

14.0 Conservatory

15.0 Draught Proofing

 %

16.0 Draught Lobby

17.0 Thermal Bridging

17.1 List of Bridges

| Bridge Type | Source Type | Length | Psi | Adjusted Reference: | Imported |
|--|--------------------------|--------|------|------------------------|----------|
| E1 Steel lintel with perforated steel base plate | Non Gov Approved Schemes | 12.82 | 0.27 | 0.27 Knauf PSI Details | No |
| E3 Sill | Non Gov Approved Schemes | 10.21 | 0.02 | 0.02 Knauf PSI Details | No |
| E4 Jamb | Non Gov Approved Schemes | 29.40 | 0.02 | 0.02 Knauf PSI Details | No |
| E5 Ground floor (normal) | Independently assessed | 11.32 | 0.04 | 0.04 FES - Para | No |
| E10 Eaves (insulation at ceiling level) | Non Gov Approved Schemes | 10.60 | 0.04 | 0.04 Knauf PSI Details | No |
| E12 Gable (insulation at ceiling level) | Non Gov Approved Schemes | 16.58 | 0.04 | 0.04 Knauf PSI Details | No |
| E16 Corner (normal) | Non Gov Approved Schemes | 19.72 | 0.04 | 0.04 Knauf PSI Details | No |
| E6 Intermediate floor within a dwelling | Non Gov Approved Schemes | 27.18 | 0.00 | 0.00 Knauf PSI Details | No |
| E5 Ground floor (normal) | Independently assessed | 15.86 | 0.06 | 0.06 FES - Perp | No |

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

| | |
|--|---|
| Mechanical Ventilation System Present | <input type="text" value="Yes"/> |
| Approved Installation | <input type="text" value="Yes"/> |
| Mechanical Ventilation data Type | <input type="text" value="Database"/> |
| Type | <input type="text" value="Mechanical extract ventilation - decentralised"/> |
| MV Reference Number | <input type="text" value="500776"/> |
| Duct Type | <input type="text" value="Flexible"/> |
| Wet Rooms | <input type="text" value="4"/> |
| SFP from Installer Commissioning Certificate | <input type="text" value="No"/> |

19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

| | |
|--|--------------------------------|
| Number of open chimneys | <input type="text" value="0"/> |
| Number of open flues | <input type="text" value="0"/> |
| Number of chimneys/flues attached to closed fire | <input type="text" value="0"/> |
| Number of flues attached to solid fuel boiler | <input type="text" value="0"/> |

Summary for Input Data



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 |
|-------------------|----------|-------|----------|-------|
| Internal Lighting | 108.00 | 8.00 | 864.00 | 12 |
| External Lighting | 102.50 | 4.00 | 410.00 | 1 |

24.0 Main Heating 1

Percentage of Heat %

Database Ref. No.

Fuel Type

SAP Code

In Winter

In Summer

Model Name

Manufacturer

System Type

Controls SAP Code

PCDF Controls

Delayed Start Stat

Burner Control

HETAS approved System

Is MHS Pumped

Heating Pump Age

Heat Emitter

Flow Temperature

Flow Temperature Value

25.0 Main Heating 2

26.0 Heat Networks

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

27.0 Secondary Heating

28.0 Water Heating

Water Heating

SAP Code

Flue Gas Heat Recovery System

Summary for Input Data

| | |
|--|------------|
| Waste Water Heat Recovery Instantaneous System 1 | Yes |
| Waste Water Heat Recovery Instantaneous System 2 | No |
| Waste Water Heat Recovery Storage System | No |
| Solar Panel | No |
| Water use <= 125 litres/person/day | Yes |
| Summer Immersion | No |
| Cold Water Source | From mains |
| Bath Count | 1 |
| Baths connected to WWHRS | 0 |
| Supplementary Immersion | No |
| Immersion Only Heating Hot Water | No |

28.1 Showers

| Description | Shower Type | Flow Rate [l/min] | Rated Power [kW] | Connected | Connected To |
|-----------------|---|-------------------|------------------|-----------|------------------------|
| Shower en-suite | Combi boiler or unvented hot water system | 9.00 | | Yes | Instantaneous System 1 |
| | Combi boiler or unvented hot water system | 9.00 | 9.30 | No | |

28.3 Waste Water Heat Recovery System Instantaneous System 1

| | |
|-------------|---|
| Database ID | 80148 |
| Brand Model | Recoup, Pipe HEX |
| Details | Year: 2019 + current Efficiency: 55.4 Utilisation factor: 0.957 |

29.0 Hot Water Cylinder

| | | |
|--------------------------|----------------------------------|---------|
| Hot Water Cylinder | Hot Water Cylinder | |
| Cylinder Stat | Yes | |
| Cylinder In Heated Space | Yes | |
| Independent Time Control | Yes | |
| Insulation Type | Measured Loss | |
| Insulation Thickness | 0 | |
| Cylinder Volume | 180.00 | L |
| Loss | 1.63 | 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 |

32.0 Photovoltaic Unit

| | |
|------------------------|------|
| Export Capable Meter? | Yes |
| Connected To Dwelling | Yes |
| Diverter | No |
| Battery Capacity [kWh] | 0.00 |

| PV Cells kWp | Orientation | Elevation | Overshading | FGHRS | MCS Certificate | Overshading Factor | MCS Certificate Reference | Panel Manufacturer |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 1.10 | East | 30° | None Or Little | No | No | 1.00 | | |

34.0 Small-scale Hydro

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

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

Recommendations

- Lower cost measures: None
- Further measures to achieve even higher standards

None

Summary for Input Data



| | | | | |
|----------------------|--|---------------|---------------------|------------|
| Property Reference | 009423 - HT - Cookbury - DET | | Issued on Date | 04/11/2024 |
| Assessment Reference | Ideal HP290 | Prop Type Ref | HT - Cookbury - DET | |
| Property | Plot , HT - Cookbury - DET, Land off Thurnscoe Bridge Lane | | | |

| | | | | | |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating | 87 B | DER | 2.58 | TER | 10.54 |
| Environmental | 98 A | % DER < TER | | | 75.52 |
| CO ₂ Emissions (t/year) | 0.3 | DFEE | 38.82 | TFEE | 42.50 |
| Compliance Check | See BREL | % DFEE < TFEE | | | 8.67 |
| % DPER < TPER | 47.36 | DPER | 29.07 | TPER | 55.22 |

| | | | |
|------------------|--------------------|-------------|-----------|
| Assessor Details | Mr. George Leadley | Assessor ID | P719-0001 |
| Client | | | |

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

| | | |
|--------------------------------|---------------------|---------------------|
| Orientation | East | |
| Property Tenure | 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 | 2024 | |
| 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 | 172.11 | 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 | Unheated Space Floor Area | Average Storey Height |
|------------------|---------------------|----------------------|---------------------------|-----------------------|
| Ground floor: | 33.06 m | 51.39 m ² | 15.39 m ² | 2.59 m |
| 1st Storey: | 33.06 m | 66.78 m ² | | 2.34 m |

| | | |
|-----------------|-------|----------------|
| 8.0 Living Area | 15.12 | 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 | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.24 | 60.00 | 141.80 | 120.14 | 0.00 | None | 21.66 | Enter Gross Area |
| | Garage Wall | Solid Wall | Solid wall : plasterboard on dabs, 200 mm dense block, insulated externally | 0.24 | 150.00 | 21.35 | 21.35 | 0.70 | Garage Single 1 Inside | 0.00 | Enter Gross Area |

| 9.2 Internal Walls | Description | Construction | Kappa (kJ/m ² K) | Area (m ²) |
|--------------------|-----------------------|-----------------------------------|-----------------------------|------------------------|
| | Ground Floor - Timber | Plasterboard on timber frame | 9.00 | 39.63 |
| | Ground Floor - Block | Dense block, plasterboard on dabs | 75.00 | 27.71 |
| | First Floor - Timber | Plasterboard on timber frame | 9.00 | 149.06 |

| 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 | 0.09 | 9.00 | 66.78 | 66.78 | None | 0.00 | Enter Gross Area | 0.00 |

| 10.2 Internal Ceilings | Description | Storey | Construction | Area (m ²) |
|------------------------|--------------|-----------------|--|------------------------|
| | Ground Floor | Lowest occupied | Plasterboard ceiling, carpeted chipboard floor | 51.39 |

| | |
|-----------------------|--|
| 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) |
|--------------------|------------------------|-----------------|---|-----------------|------------------------|----------------|----------------|-----------|
| Ground Floor | Ground Floor - Solid | Lowest occupied | Suspended concrete floor, carpeted | 0.10 | None | 0.00 | 75.00 | 51.39 |
| Floor Above Garage | Exposed Floor - Timber | +1 | Timber exposed floor, insulation between joists | 0.15 | Garage Single 1 Inside | 0.70 | 20.00 | 15.39 |

11.2 Internal Floors

| Description | Storey Index | Construction | Kappa (kJ/m²K) | Area (m²) |
|-------------|--------------|--|----------------|-----------|
| First Floor | | Plasterboard ceiling, carpeted chipboard floor | 9.00 | 51.39 |

12.0 Opening Types

| Description | Data Source | Type | Glazing | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|-------------|---------------------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Solid Doors | Manufacturer | Solid Door | | | | 0.00 | | | 1.30 |
| Windows | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.38 | | 1.00 | 0.86 |
| Patio Doors | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.35 | | 1.00 | 0.89 |

13.0 Openings

| Name | Opening Type | Location | Orientation | Area (m²) | Pitch |
|------------------|--------------|---------------|-------------|-----------|-------|
| Front Door | Solid Doors | External Wall | East | 2.15 | 0 |
| Front Windows | Windows | External Wall | East | 7.51 | 0 |
| LH Windows | Windows | External Wall | South | 0.72 | 0 |
| Rear Windows | Windows | External Wall | West | 7.48 | 0 |
| Rear Patio Doors | Patio Doors | External Wall | West | 3.80 | 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 |
|--|--------------------------|--------|-------|-------------------------|----------|
| E1 Steel lintel with perforated steel base plate | Non Gov Approved Schemes | 16.21 | 0.27 | 0.27 Knauf PSI Details | No |
| E3 Sill | Non Gov Approved Schemes | 13.38 | 0.02 | 0.02 Knauf PSI Details | No |
| E4 Jamb | Non Gov Approved Schemes | 31.50 | 0.02 | 0.02 Knauf PSI Details | No |
| E5 Ground floor (normal) | Independently assessed | 11.23 | 0.04 | 0.04 FES - Para | No |
| E5 Ground floor (normal) | Independently assessed | 13.59 | 0.06 | 0.06 FES - Perp | No |
| E20 Exposed floor (normal) | Independently assessed | 8.24 | 0.05 | FES | No |
| E21 Exposed floor (inverted) | Independently assessed | 8.24 | 0.02 | FES | No |
| E6 Intermediate floor within a dwelling | Non Gov Approved Schemes | 24.82 | 0.00 | 0.00 Knauf PSI Details | No |
| E10 Eaves (insulation at ceiling level) | Non Gov Approved Schemes | 12.50 | 0.04 | 0.04 Knauf PSI Details | No |
| E12 Gable (insulation at ceiling level) | Non Gov Approved Schemes | 20.56 | 0.04 | 0.04 Knauf PSI Details | No |
| E16 Corner (normal) | Non Gov Approved Schemes | 22.08 | 0.04 | 0.04 Knauf PSI Details | No |
| E16 Corner (normal) | Table K1 - Default | 5.18 | 0.18 | 0.18 | No |
| E17 Corner (inverted – internal area greater than external area) | Non Gov Approved Schemes | 4.93 | -0.09 | -0.09 Knauf PSI Details | No |
| E17 Corner (inverted – internal area greater than external area) | Table K1 - Default | 2.59 | 0.00 | 0.00 | No |
| E5 Ground floor (normal) | Independently assessed | 8.24 | 0.05 | 0.05 FES - Garage | No |

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

| | |
|--|---|
| Mechanical Ventilation System Present | <input type="text" value="Yes"/> |
| Approved Installation | <input type="text" value="Yes"/> |
| Mechanical Ventilation data Type | <input type="text" value="Database"/> |
| Type | <input type="text" value="Mechanical extract ventilation - decentralised"/> |
| MV Reference Number | <input type="text" value="500776"/> |
| Duct Type | <input type="text" value="Flexible"/> |
| Wet Rooms | <input type="text" value="4"/> |
| SFP from Installer Commissioning Certificate | <input type="text" value="No"/> |

19.1 Mechanical extract ventilation - Decentralised

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

Summary for Input Data



0.08 Through Wall Fan 3
Other Wet Room

20.0 Fans, Open Fireplaces, Flues

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

21.0 Fixed Cooling System

No

22.0 Pressure Testing

Yes

| | | |
|---------------------------|-------------|---|
| Designed AP ₅₀ | 4.00 | 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 |
|-------------------|----------|-------|----------|-------|
| Internal Lighting | 108.00 | 8.00 | 864.00 | 15 |
| External Lighting | 102.50 | 4.00 | 410.00 | 1 |

24.0 Main Heating 1

Database

| | | |
|------------------------|------------------------|---|
| Percentage of Heat | 100.00 | % |
| Database Ref. No. | 107980 | |
| Fuel Type | Electricity | |
| SAP Code | 104 | |
| In Winter | 308.29 | |
| In Summer | 198.80 | |
| Model Name | HP290 Monobloc 8kW | |
| Manufacturer | Midea | |
| System Type | Heat Pump | |
| Controls SAP Code | 2207 | |
| PCDF Controls | 0 | |
| Delayed Start Stat | Yes | |
| Burner Control | On/Off | |
| HETAS approved System | No | |
| Is MHS Pumped | Pump in unheated space | |
| Heating Pump Age | 2013 or later | |
| Heat Emitter | Radiators | |
| 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 | | | | | | | | |

Summary for Input Data



Heat source 5 None

27.0 Secondary Heating

28.0 Water Heating

Water Heating

SAP Code

Flue Gas Heat Recovery System

Waste Water Heat Recovery Instantaneous System 1

Waste Water Heat Recovery Instantaneous System 2

Waste Water Heat Recovery Storage System

Solar Panel

Water use <= 125 litres/person/day

Summer Immersion

Cold Water Source

Bath Count

Baths connected to WWHRS

Supplementary Immersion

Immersion Only Heating Hot Water

28.1 Showers

| Description | Shower Type | Flow Rate [l/min] | Rated Power [kW] | Connected | Connected To |
|-----------------|---|-------------------|------------------|-----------|------------------------|
| Shower en-suite | Combi boiler or unvented hot water system | 9.00 | 9.30 | Yes | Instantaneous System 1 |
| | Combi boiler or unvented hot water system | 9.00 | 9.30 | No | |

28.3 Waste Water Heat Recovery System Instantaneous System 1

Database ID

Brand Model

Details

29.0 Hot Water Cylinder

Cylinder Stat

Cylinder In Heated Space

Independent Time Control

Insulation Type

Insulation Thickness

Cylinder Volume L

Loss kWh/day

Pipes insulation

In Airing Cupboard

31.0 Thermal Store

Thermal Store Pipework

32.0 Photovoltaic Unit

Export Capable Meter?

Connected To Dwelling

Diverter

Battery Capacity [kWh]

| PV Cells kWp | Orientation | Elevation | Overshading | FGHRS | MCS Certificate | Overshading Factor | MCS Certificate Reference | Panel Manufacturer |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 1.30 | East | 30° | None Or Little | No | No | 1.00 | | |

34.0 Small-scale Hydro

Electricity Generated

Summary for Input Data



Apportioned kWh/Year
Connected to dwelling's electricity meter
Electricity Generation

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data



| | | | | |
|----------------------|--|---------------|------------------|------------|
| Property Reference | 009423 - HT - Dalton - DET | | Issued on Date | 04/11/2024 |
| Assessment Reference | Ideal HP290 | Prop Type Ref | HT- Dalton - DET | |
| Property | Plot , HT - Dalton - DET, Land off Thurnscoe Bridge Lane | | | |

| | | | | | |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating | 87 B | DER | 2.74 | TER | 11.30 |
| Environmental | 97 A | % DER < TER | | | 75.75 |
| CO ₂ Emissions (t/year) | 0.32 | DFEE | 40.11 | TFEE | 40.66 |
| Compliance Check | See BREL | % DFEE < TFEE | | | 1.36 |
| % DPER < TPER | 48.37 | DPER | 30.55 | TPER | 59.17 |

| | | | |
|------------------|--------------------|-------------|-----------|
| Assessor Details | Mr. George Leadley | Assessor ID | P719-0001 |
| Client | | | |

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

| | | |
|--------------------------------|---------------------|---------------------|
| Orientation | East | |
| Property Tenure | ND | |
| Transaction Type | 6 | |
| Terrain Type | Suburban | |
| 1.0 Property Type | House, Detached | |
| Which Floor | 0 | |
| 2.0 Number of Storeys | 3 | |
| 3.0 Date Built | 2024 | |
| 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 | 166.53 | 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: | 27.18 m | 43.95 m ² | 2.31 m |
| 1st Storey: | 27.18 m | 43.95 m ² | 2.63 m |
| 2nd Storey: | 27.18 m | 30.48 m ² | 2.48 m |

| | | |
|-----------------|-------|----------------|
| 8.0 Living Area | 12.35 | 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 | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.24 | 60.00 | 151.06 | 134.24 | 0.00 | None | 16.82 | Enter Gross Area | |
| Gable Panel Wall | Timber Frame | Timber framed wall (one layer of plasterboard) | 0.23 | 9.00 | 28.85 | 28.85 | 0.00 | None | 0.00 | Enter Gross Area | |
| Sheltered Stud Wall | Timber Frame | Timber framed wall (one layer of plasterboard) | 0.11 | 9.00 | 18.93 | 18.93 | 0.00 | None | 0.00 | Enter Gross Area | |

| 9.2 Internal Walls | Description | Construction | Kappa (kJ/m ² K) | Area (m ²) |
|-----------------------|-----------------------------------|--------------|-----------------------------|------------------------|
| Ground Floor - Timber | Plasterboard on timber frame | 9.00 | 42.69 | |
| First Floor - Timber | Plasterboard on timber frame | 9.00 | 104.78 | |
| Second Floor - Timber | Plasterboard on timber frame | 9.00 | 42.56 | |
| Ground Floor - Block | Dense block, plasterboard on dabs | 75.00 | 50.68 | |

| 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 |
|-----------------------|---------------------|-------------------------------|--------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------|------------------|------------------|----------|
| Sloping Cassette Roof | External Slope Roof | Plasterboard, insulated slope | 0.15 | 9.00 | 16.69 | 14.62 | None | 0.00 | Enter Gross Area | 2.07 | |
| Sheltered Stud Roof | External Slope Roof | Plasterboard, insulated slope | 0.11 | 9.00 | 31.16 | 31.16 | None | 0.00 | Enter Gross Area | 0.00 | |

| 10.2 Internal Ceilings | Description | Storey | Construction | Area (m ²) |
|------------------------|-------------|--------|--------------|------------------------|
|------------------------|-------------|--------|--------------|------------------------|

Summary for Input Data



| | | | |
|--------------|-----------------|--|-------|
| Ground Floor | Lowest occupied | Plasterboard ceiling, carpeted chipboard floor | 43.95 |
| First Floor | +1 | Plasterboard ceiling, carpeted chipboard floor | 30.48 |

11.0 Heat Loss Floors

| Description | Type | Storey Index | Construction | U-Value (W/m²K) | Shelter Code | Shelter Factor | Kappa (kJ/m²K) | Area (m²) |
|--------------|----------------------|-----------------|------------------------------------|-----------------|--------------|----------------|----------------|-----------|
| Ground Floor | Ground Floor - Solid | Lowest occupied | Suspended concrete floor, carpeted | 0.10 | None | 0.00 | 75.00 | 43.95 |

11.2 Internal Floors

| Description | Storey Index | Construction | Kappa (kJ/m²K) | Area (m²) |
|--------------|--------------|--|----------------|-----------|
| First Floor | | Plasterboard ceiling, carpeted chipboard floor | 9.00 | 43.95 |
| Second Floor | | Plasterboard ceiling, carpeted chipboard floor | 9.00 | 30.48 |

12.0 Opening Types

| Description | Data Source | Type | Glazing | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|-------------|---------------------------|-------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Solid Doors | Manufacturer | Solid Door | | | | 0.00 | | | 1.30 |
| Windows | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.38 | | 1.00 | 0.86 |
| Patio Doors | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.35 | | 1.00 | 0.89 |
| Rooflights | Manufacturer | Roof Window | Double Low-E Soft 0.05 | | | 0.63 | | 0.70 | 1.30 |

13.0 Openings

| Name | Opening Type | Location | Orientation | Area (m²) | Pitch |
|------------------|--------------|-----------------------|-------------|-----------|-------|
| Front Door | Solid Doors | External Wall | East | 2.15 | 0 |
| Front Windows | Windows | External Wall | East | 5.98 | 0 |
| Rear Windows | Windows | External Wall | West | 3.92 | 0 |
| Rear Patio Doors | Patio Doors | External Wall | West | 3.33 | 0 |
| Front RL | Rooflights | Sloping Cassette Roof | East | 1.53 | 40 |
| Rear RL | Rooflights | Sloping Cassette Roof | West | 0.54 | 40 |
| RH Windows | Windows | External Wall | North | 1.44 | 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 |
|--|--------------------------|--------|------|------------------------|----------|
| E1 Steel lintel with perforated steel base plate | Non Gov Approved Schemes | 12.14 | 0.27 | 0.27 Knauf PSI Details | No |
| E3 Sill | Non Gov Approved Schemes | 9.53 | 0.02 | 0.02 Knauf PSI Details | No |
| E4 Jamb | Non Gov Approved Schemes | 27.00 | 0.02 | 0.02 Knauf PSI Details | No |
| E5 Ground floor (normal) | Independently assessed | 11.32 | 0.04 | 0.04 FES - Para | No |
| E6 Intermediate floor within a dwelling | Non Gov Approved Schemes | 54.37 | 0.00 | 0.00 Knauf PSI Details | No |
| E11 Eaves (insulation at rafter level) | Independently assessed | 10.60 | 0.05 | 0.05 NYT PSI Details | No |
| E13 Gable (insulation at rafter level) | Independently assessed | 21.65 | 0.06 | 0.06 NYT PSI Details | No |
| E16 Corner (normal) | Non Gov Approved Schemes | 22.23 | 0.04 | 0.04 Knauf PSI Details | No |
| R1 Head of roof window | Independently assessed | 2.11 | 0.09 | 0.09 Velux | No |
| R2 Sill of roof window | Independently assessed | 2.11 | 0.09 | 0.09 Velux | No |
| R3 Jamb of roof window | Independently assessed | 5.88 | 0.09 | 0.09 Velux | No |
| R4 Ridge (vaulted ceiling) | Independently assessed | 5.30 | 0.05 | 0.05 NYT PSI Details | No |
| E5 Ground floor (normal) | Independently assessed | 15.86 | 0.06 | 0.06 FES - Perp | No |

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

| | |
|--|---|
| Mechanical Ventilation System Present | <input type="text" value="Yes"/> |
| Approved Installation | <input type="text" value="No"/> |
| Mechanical Ventilation data Type | <input type="text" value="Database"/> |
| Type | <input type="text" value="Mechanical extract ventilation - decentralised"/> |
| MV Reference Number | <input type="text" value="500776"/> |
| Duct Type | <input type="text" value="Flexible"/> |
| Wet Rooms | <input type="text" value="5"/> |
| SFP from Installer Commissioning Certificate | <input type="text" value="No"/> |

19.1 Mechanical extract ventilation - Decentralised

| SFP | Fan/Room Type | Count |
|------|----------------------------|-------|
| 0.14 | In Room Fan Kitchen | 0 |
| 0.11 | In Room Fan Other Wet Room | 0 |
| 0.00 | In Duct Fan Kitchen | 0 |
| 0.00 | In Duct Fan Other Wet Room | 0 |

Summary for Input Data



0.08 Through Wall Fan 1
 Kitchen
 0.08 Through Wall Fan 4
 Other Wet Room

20.0 Fans, Open Fireplaces, Flues

| | |
|--|--------------------------------|
| Number of open chimneys | <input type="text" value="0"/> |
| Number of open flues | <input type="text" value="0"/> |
| Number of chimneys/flues attached to closed fire | <input type="text" value="0"/> |
| Number of flues attached to solid fuel boiler | <input type="text" value="0"/> |
| Number of flues attached to other heater | <input type="text" value="0"/> |
| Number of blocked chimneys | <input type="text" value="0"/> |
| Number of intermittent extract fans | <input type="text" value="0"/> |
| Number of passive vents | <input type="text" value="0"/> |
| Number of flueless gas fires | <input type="text" value="0"/> |

21.0 Fixed Cooling System

22.0 Pressure Testing

| | | |
|---------------------------|--|---|
| | <input type="text" value="Yes"/> | |
| Designed AP ₅₀ | <input type="text" value="4.00"/> | m ³ /(h.m ²) @ 50 Pa |
| Property Tested? | <input type="text" value="Yes"/> | |
| Test Method | <input type="text" value="Blower Door"/> | |

22.0 Lighting

| | | | | | |
|-------------------|---------------------------------|-----------------|--------------|-----------------|--------------|
| No Fixed Lighting | <input type="text" value="No"/> | | | | |
| | Name | Efficacy | Power | Capacity | Count |
| | Internal Lighting | 108.00 | 8.00 | 864.00 | 16 |
| | External Lighting | 102.50 | 4.00 | 410.00 | 1 |

24.0 Main Heating 1

| | | |
|------------------------|---|---|
| | <input type="text" value="Database"/> | |
| Percentage of Heat | <input type="text" value="100.00"/> | % |
| Database Ref. No. | <input type="text" value="107980"/> | |
| Fuel Type | <input type="text" value="Electricity"/> | |
| SAP Code | <input type="text" value="104"/> | |
| In Winter | <input type="text" value="309.34"/> | |
| In Summer | <input type="text" value="198.38"/> | |
| Model Name | <input type="text" value="HP290 Monobloc 8kW"/> | |
| Manufacturer | <input type="text" value="Midea"/> | |
| System Type | <input type="text" value="Heat Pump"/> | |
| Controls SAP Code | <input type="text" value="2207"/> | |
| PCDF Controls | <input type="text" value="0"/> | |
| Delayed Start Stat | <input type="text" value="Yes"/> | |
| Burner Control | <input type="text" value="On/Off"/> | |
| HETAS approved System | <input type="text" value="No"/> | |
| Is MHS Pumped | <input type="text" value="Pump in heated space"/> | |
| Heating Pump Age | <input type="text" value="2013 or later"/> | |
| Heat Emitter | <input type="text" value="Radiators"/> | |
| Flow Temperature | <input type="text" value="Enter value"/> | |
| Flow Temperature Value | <input type="text" 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 | | | | | | | | | |

Summary for Input Data



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

27.0 Secondary Heating

28.0 Water Heating

Water Heating
 SAP Code
 Flue Gas Heat Recovery System
 Waste Water Heat Recovery Instantaneous System 1
 Waste Water Heat Recovery Instantaneous System 2
 Waste Water Heat Recovery Storage System
 Solar Panel
 Water use <= 125 litres/person/day
 Summer Immersion
 Cold Water Source
 Bath Count
 Baths connected to WWHRS
 Supplementary Immersion
 Immersion Only Heating Hot Water

28.1 Showers

| Description | Shower Type | Flow Rate [l/min] | Rated Power [kW] | Connected | Connected To |
|-----------------|---|-------------------|------------------|-----------|------------------------|
| Shower en-suite | Combi boiler or unvented hot water system | 9.00 | | Yes | Instantaneous System 1 |
| En-suite 2 | Combi boiler or unvented hot water system | 9.00 | 9.30 | No | |
| | Combi boiler or unvented hot water system | 9.00 | 9.30 | No | |

28.3 Waste Water Heat Recovery System Instantaneous System 1

Database ID
 Brand Model
 Details

29.0 Hot Water Cylinder

Cylinder Stat
 Cylinder In Heated Space
 Independent Time Control
 Insulation Type
 Insulation Thickness
 Cylinder Volume L
 Loss kWh/day
 Pipes insulation
 In Airing Cupboard

31.0 Thermal Store

Thermal Store Pipework

32.0 Photovoltaic Unit

Export Capable Meter?
 Connected To Dwelling
 Diverter
 Battery Capacity [kWh]

| PV Cells kWp | Orientation | Elevation | Overshading | FGHRS | MCS Certificate | Overshading Factor | MCS Certificate Reference | Panel Manufacturer |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 1.30 | East | 45° | None Or Little | No | No | 1.00 | | |

Summary for Input Data



34.0 Small-scale Hydro

| | | | | | | | | | | | | |
|---|-------------------------------------|--|--|--|--|--|--|--|--|--|--|--|
| Electricity Generated | <input type="text" value="None"/> | | | | | | | | | | | |
| Apportioned | <input type="text" value="0.00"/> | | | | | | | | | | | |
| Connected to dwelling's electricity meter | <input type="text" value="Yes"/> | | | | | | | | | | | |
| Electricity Generation | <input type="text" value="Annual"/> | | | | | | | | | | | |

kWh/Year

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 | 009423 - HT - Denborough - SEM | | Issued on Date | 04/11/2024 |
| Assessment Reference | Ideal HP290 | Prop Type Ref | HT - Denborough - SEMI | |
| Property | Plot , HT - Denborough - SEMI, Land off Thurnscoe Bridge Lane | | | |

| | | | | | |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating | 92 A | DER | 2.26 | TER | 13.29 |
| Environmental | 98 A | % DER < TER | | | 82.99 |
| CO ₂ Emissions (t/year) | 0.12 | DFEE | 35.94 | TFEE | 38.21 |
| Compliance Check | See BREL | % DFEE < TFEE | | | 5.96 |
| % DPER < TPER | 63.10 | DPER | 25.72 | TPER | 69.72 |

| | | | |
|------------------|--------------------|-------------|-----------|
| Assessor Details | Mr. George Leadley | Assessor ID | P719-0001 |
| Client | | | |

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

| | |
|--------------------------------|----------------------------|
| Orientation | East |
| 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 | 2024 |
| 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 | 207.94 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: | 15.21 m | 28.91 m ² | 2.31 m |
| | 1st Storey: | 15.21 m | 28.91 m ² | 2.62 m |

| | |
|-----------------|----------------------|
| 8.0 Living Area | 22.25 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 | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.24 | 60.00 | 75.00 | 63.52 | 0.00 | None | 11.48 | 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 | Filled Cavity with Edge Sealing | Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill | 0.00 | 110.00 | 38.48 | 0.00 | None |

| Description | Construction | Kappa (kJ/m ² K) | Area (m ²) |
|-----------------------|------------------------------|-----------------------------|------------------------|
| Ground Floor - Timber | Plasterboard on timber frame | 9.00 | 35.34 |
| First Floor - Timber | Plasterboard on timber frame | 9.00 | 50.20 |

| Description | Type | Construction | U-Value (W/m ² K) | Kappa (kJ/m ² K) | Gross Area(m ²) | Nett Area (m ²) | Shelter Code | Shelter Factor | Calculation Type | Openings |
|-------------|---------------------|--|------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------|----------------|------------------|----------|
| Cold Roof | External Plane Roof | Plasterboard, insulated at ceiling level | 0.09 | 9.00 | 28.91 | 28.91 | None | 0.00 | Enter Gross Area | 0.00 |

| Description | Storey | Construction | Area (m ²) |
|-------------|--------|--------------|------------------------|
|-------------|--------|--------------|------------------------|

Summary for Input Data



Ground Floor Lowest occupied Plasterboard ceiling, carpeted chipboard floor 28.91

11.0 Heat Loss Floors

| Description | Type | Storey Index | Construction | U-Value (W/m²K) | Shelter Code | Shelter Factor | Kappa (kJ/m²K) | Area (m²) |
|--------------|----------------------|-----------------|------------------------------------|-----------------|--------------|----------------|----------------|-----------|
| Ground Floor | Ground Floor - Solid | Lowest occupied | Suspended concrete floor, carpeted | 0.10 | None | 0.00 | 75.00 | 28.91 |

11.2 Internal Floors

| Description | Storey Index | Construction | Kappa (kJ/m²K) | Area (m²) |
|-------------|--------------|--|----------------|-----------|
| First Floor | | Plasterboard ceiling, carpeted chipboard floor | 9.00 | 28.91 |

12.0 Opening Types

| Description | Data Source | Type | Glazing | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|-------------|---------------------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Solid Doors | Manufacturer | Solid Door | | | | 0.00 | | | 1.30 |
| Windows | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.38 | | 1.00 | 0.86 |
| Patio Doors | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.35 | | 1.00 | 0.89 |

13.0 Openings

| Name | Opening Type | Location | Orientation | Area (m²) | Pitch |
|------------------|--------------|---------------|-------------|-----------|-------|
| Front Door | Solid Doors | External Wall | East | 2.15 | 0 |
| Front Windows | Windows | External Wall | East | 3.38 | 0 |
| LH Windows | Windows | External Wall | South | 0.72 | 0 |
| Rear Windows | Windows | External Wall | West | 1.90 | 0 |
| Rear Patio Doors | Patio Doors | External Wall | West | 3.33 | 0 |

14.0 Conservatory

None

15.0 Draught Proofing

100 %

16.0 Draught Lobby

No

17.0 Thermal Bridging

Calculate Bridges

17.1 List of Bridges

| Bridge Type | Source Type | Length | Psi | Adjusted Reference: | Imported |
|--|--------------------------|--------|------|------------------------|----------|
| E1 Steel lintel with perforated steel base plate | Non Gov Approved Schemes | 7.83 | 0.27 | 0.27 Knauf PSI Details | No |
| E3 Sill | Non Gov Approved Schemes | 5.23 | 0.02 | 0.02 Knauf PSI Details | No |
| E4 Jamb | Non Gov Approved Schemes | 19.80 | 0.02 | 0.02 Knauf PSI Details | No |
| E5 Ground floor (normal) | Independently assessed | 7.41 | 0.04 | 0.04 FES - Para | No |
| E6 Intermediate floor within a dwelling | Non Gov Approved Schemes | 15.21 | 0.00 | 0.00 Knauf PSI Details | No |
| E10 Eaves (insulation at ceiling level) | Non Gov Approved Schemes | 7.41 | 0.04 | 0.04 Knauf PSI Details | No |
| E12 Gable (insulation at ceiling level) | Non Gov Approved Schemes | 7.81 | 0.04 | 0.04 Knauf PSI Details | No |
| E16 Corner (normal) | Non Gov Approved Schemes | 9.86 | 0.04 | 0.04 Knauf PSI Details | No |
| E18 Party wall between dwellings | Non Gov Approved Schemes | 9.86 | 0.04 | 0.04 Knauf PSI Details | No |
| P1 Party wall - Ground floor | Independently assessed | 7.81 | 0.07 | 0.07 FES | No |
| P2 Party wall - Intermediate floor within a dwelling | Table K1 - Default | 7.81 | 0.00 | 0.00 Default | No |
| P4 Party wall - Roof (insulation at ceiling level) | Non Gov Approved Schemes | 7.81 | 0.09 | 0.09 Knauf PSI Details | No |
| E5 Ground floor (normal) | Independently assessed | 7.81 | 0.06 | 0.06 FES - Perp | No |

Y-value 0.05 W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

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

19.1 Mechanical extract ventilation - Decentralised

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

Summary for Input Data



20.0 Fans, Open Fireplaces, Flues

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

21.0 Fixed Cooling System

No

22.0 Pressure Testing

Yes

Designed AP₅₀ 4.00 m³/(h.m²) @ 50 Pa

Property Tested? Yes

Test Method Blower Door

22.0 Lighting

No Fixed Lighting No

| Name | Efficacy | Power | Capacity | Count |
|-------------------|----------|-------|----------|-------|
| Internal Lighting | 108.00 | 8.00 | 864.00 | 8 |
| External Lighting | 102.50 | 4.00 | 410.00 | 1 |

24.0 Main Heating 1

Database

Percentage of Heat 100.00 %

Database Ref. No. 107964

Fuel Type Electricity

SAP Code 104

In Winter 277.36

In Summer 326.03

Model Name HP290 Monobloc 4.5kW

Manufacturer Midea

System Type Heat Pump

Controls SAP Code 2207

PCDF Controls 0

Delayed Start Stat Yes

Burner Control On/Off

HETAS approved System No

Is MHS Pumped Pump in heated space

Heating Pump Age 2013 or later

Heat Emitter Radiators

Flow Temperature Enter value

Flow Temperature Value 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 | Yes |
| Waste Water Heat Recovery Instantaneous System 2 | No |
| Waste Water Heat Recovery Storage System | No |
| Solar Panel | No |
| Water use <= 125 litres/person/day | Yes |
| Summer Immersion | No |
| Cold Water Source | From mains |
| Bath Count | 1 |
| Baths connected to WWHRS | 0 |
| Supplementary Immersion | No |
| Immersion Only Heating Hot Water | No |

28.1 Showers

| Description | Shower Type | Flow Rate [l/min] | Rated Power [kW] | Connected | Connected To |
|-------------|---|-------------------|------------------|-----------|------------------------|
| Shower | Combi boiler or unvented hot water system | 9.00 | | Yes | Instantaneous System 1 |

28.3 Waste Water Heat Recovery System Instantaneous System 1

| | |
|-------------|---|
| Database ID | 80148 |
| Brand Model | Recoup, Pipe HEX |
| Details | Year: 2019 + current Efficiency: 55.4 Utilisation factor: 0.957 |

29.0 Hot Water Cylinder

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

31.0 Thermal Store

| | |
|------------------------|------------------------|
| Thermal Store | None |
| Thermal Store Pipework | within a single casing |

32.0 Photovoltaic Unit

| | |
|------------------------|--------------|
| One Dwelling | One Dwelling |
| Export Capable Meter? | Yes |
| Connected To Dwelling | Yes |
| Diverter | No |
| Battery Capacity [kWh] | 0.00 |

| PV Cells kWp | Orientation | Elevation | Overshading | FGHRS | MCS Certificate | Overshading Factor | MCS Certificate Reference | Panel Manufacturer |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 0.67 | East | 30° | None Or Little | No | No | 1.00 | | |

34.0 Small-scale Hydro

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

Summary for Input Data



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 | 009423 - HT - Eastbeck - SEMI | | Issued on Date | 04/11/2024 |
| Assessment Reference | Ideal HP290 | Prop Type Ref | HT - Eastbeck - SEMI | |
| Property | Plot , HT - Eastbeck - SEMI, Land off Thurnscoe Bridge Lane | | | |

| | | | | | |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating | 87 B | DER | 3.09 | TER | 12.48 |
| Environmental | 97 A | % DER < TER | | | 75.24 |
| CO ₂ Emissions (t/year) | 0.23 | DFEE | 35.77 | TFEE | 36.93 |
| Compliance Check | See BREL | % DFEE < TFEE | | | 3.14 |
| % DPER < TPER | 48.59 | DPER | 33.68 | TPER | 65.52 |

| | | | |
|------------------|--------------------|-------------|-----------|
| Assessor Details | Mr. George Leadley | Assessor ID | P719-0001 |
| Client | | | |

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

| | | |
|--------------------------------|----------------------|---------------------|
| Orientation | East | |
| Property Tenure | ND | |
| Transaction Type | 6 | |
| Terrain Type | Suburban | |
| 1.0 Property Type | House, Semi-Detached | |
| Which Floor | 0 | |
| 2.0 Number of Storeys | 3 | |
| 3.0 Date Built | 2024 | |
| 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 | 186.54 | 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: | 15.21 m | 28.91 m ² | 2.31 m |
| 1st Storey: | 15.21 m | 28.91 m ² | 2.63 m |
| 2nd Storey: | 15.21 m | 19.99 m ² | 2.45 m |

| | | |
|-----------------|-------|----------------|
| 8.0 Living Area | 22.25 | 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 | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.24 | 60.00 | 84.53 | 73.05 | 0.00 | None | 11.48 | Enter Gross Area | |
| Gable Panel Wall | Timber Frame | Timber framed wall (one layer of plasterboard) | 0.23 | 9.00 | 12.78 | 12.78 | 0.00 | None | 0.00 | Enter Gross Area | |
| Sheltered Stud Wall | Timber Frame | Timber framed wall (one layer of plasterboard) | 0.11 | 9.00 | 12.09 | 12.09 | 0.00 | None | 0.00 | Enter Gross Area | |

| 9.1 Party Walls | Description | Type | Construction | U-Value (W/m ² K) | Kappa (kJ/m ² K) | Area (m ²) | Shelter Res | Shelter |
|-----------------|---------------------------------|---|--------------|------------------------------|-----------------------------|------------------------|-------------|---------|
| Party Wall | Filled Cavity with Edge Sealing | Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill | 0.00 | 110.00 | 43.38 | 0.00 | None | |
| Party Wall | Filled Cavity with Edge Sealing | Double plasterboard on both sides, twin timber frame with/without sheathing board | 0.00 | 20.00 | 12.78 | 0.00 | None | |

| 9.2 Internal Walls | Description | Construction | Kappa (kJ/m ² K) | Area (m ²) |
|-----------------------|------------------------------|--------------|-----------------------------|------------------------|
| Ground Floor - Timber | Plasterboard on timber frame | 9.00 | 35.34 | |
| First Floor - Timber | Plasterboard on timber frame | 9.00 | 57.44 | |
| Second Floor - Timber | Plasterboard on timber frame | 9.00 | 31.61 | |

| 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 |
|---------------------|-------------|------|--------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------|----------------|------------------|----------|
|---------------------|-------------|------|--------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------|----------------|------------------|----------|

Summary for Input Data



| | | | | | | | | | | |
|-----------------------|---------------------|-------------------------------|------|------|-------|-------|------|------|------------------|------|
| Sloping Cassette Roof | External Slope Roof | Plasterboard, insulated slope | 0.15 | 9.00 | 12.30 | 10.77 | None | 0.00 | Enter Gross Area | 1.53 |
| Sheltered Stud Roof | External Slope Roof | Plasterboard, insulated slope | 0.11 | 9.00 | 19.49 | 19.49 | None | 0.00 | Enter Gross Area | 0.00 |

10.2 Internal Ceilings

| Description | Storey | Construction | Area (m ²) |
|--------------|-----------------|--|------------------------|
| Ground Floor | Lowest occupied | Plasterboard ceiling, carpeted chipboard floor | 28.91 |
| First Floor | +1 | Plasterboard ceiling, carpeted chipboard floor | 19.99 |

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) |
|--------------|----------------------|-----------------|------------------------------------|------------------------------|--------------|----------------|-----------------------------|------------------------|
| Ground Floor | Ground Floor - Solid | Lowest occupied | Suspended concrete floor, carpeted | 0.10 | None | 0.00 | 75.00 | 28.91 |

11.2 Internal Floors

| Description | Storey Index | Construction | Kappa (kJ/m ² K) | Area (m ²) |
|--------------|--------------|--|-----------------------------|------------------------|
| First Floor | | Plasterboard ceiling, carpeted chipboard floor | 9.00 | 28.91 |
| Second Floor | | Plasterboard ceiling, carpeted chipboard floor | 9.00 | 19.99 |

12.0 Opening Types

| Description | Data Source | Type | Glazing | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m ² K) |
|-------------|---------------------------|-------------|------------------------|-------------|--------------|---------|------------|--------------|------------------------------|
| Solid Doors | Manufacturer | Solid Door | | | | 0.00 | | | 1.30 |
| Windows | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.38 | | 1.00 | 0.86 |
| Patio Doors | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.35 | | 1.00 | 0.89 |
| Rooflights | Manufacturer | Roof Window | Double Low-E Soft 0.05 | | | 0.63 | | 0.70 | 1.30 |

13.0 Openings

| Name | Opening Type | Location | Orientation | Area (m ²) | Pitch |
|------------------|--------------|-----------------------|-------------|------------------------|-------|
| Front Door | Solid Doors | External Wall | East | 2.15 | 0 |
| Front Windows | Windows | External Wall | East | 3.38 | 0 |
| LH Windows | Windows | External Wall | South | 0.72 | 0 |
| Rear Windows | Windows | External Wall | West | 1.90 | 0 |
| Rear Patio Doors | Patio Doors | External Wall | West | 3.33 | 0 |
| Front RL | Rooflights | Sloping Cassette Roof | East | 1.53 | 40 |

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 |
|--|--------------------------|--------|------|------------------------|----------|
| E1 Steel lintel with perforated steel base plate | Non Gov Approved Schemes | 7.83 | 0.27 | 0.27 Knauf PSI Details | No |
| E3 Sill | Non Gov Approved Schemes | 5.23 | 0.02 | 0.02 Knauf PSI Details | No |
| E4 Jamb | Non Gov Approved Schemes | 19.80 | 0.02 | 0.02 Knauf PSI Details | No |
| E5 Ground floor (normal) | Independently assessed | 7.41 | 0.04 | 0.04 FES - Para | No |
| E6 Intermediate floor within a dwelling | Non Gov Approved Schemes | 30.42 | 0.00 | 0.00 Knauf PSI Details | No |
| E11 Eaves (insulation at rafter level) | Independently assessed | 7.41 | 0.05 | 0.05 NYT PSI Details | No |
| E13 Gable (insulation at rafter level) | Independently assessed | 10.19 | 0.06 | 0.06 NYT PSI Details | No |
| E16 Corner (normal) | Non Gov Approved Schemes | 11.11 | 0.04 | 0.04 Knauf PSI Details | No |
| E18 Party wall between dwellings | Non Gov Approved Schemes | 11.11 | 0.04 | 0.04 Knauf PSI Details | No |
| P1 Party wall - Ground floor | Independently assessed | 7.81 | 0.07 | 0.07 FES | No |
| P2 Party wall - Intermediate floor within a dwelling | Table K1 - Default | 15.61 | 0.00 | 0.00 Default | No |
| P5 Party wall - Roof (insulation at rafter level) | Independently assessed | 10.19 | 0.07 | 0.07 NYT PSI Details | No |
| R1 Head of roof window | Independently assessed | 1.56 | 0.09 | 0.09 Velux | No |
| R2 Sill of roof window | Independently assessed | 1.56 | 0.09 | 0.09 Velux | No |
| R3 Jamb of roof window | Independently assessed | 3.92 | 0.09 | 0.09 Velux | No |
| R4 Ridge (vaulted ceiling) | Independently assessed | 3.70 | 0.05 | 0.05 NYT PSI Details | No |
| E5 Ground floor (normal) | Independently assessed | 7.81 | 0.06 | 0.06 FES - Perp | No |

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

| | |
|--|---|
| Mechanical Ventilation System Present | <input type="text" value="Yes"/> |
| Approved Installation | <input type="text" value="Yes"/> |
| Mechanical Ventilation data Type | <input type="text" value="Database"/> |
| Type | <input type="text" value="Mechanical extract ventilation - decentralised"/> |
| MV Reference Number | <input type="text" value="500776"/> |
| Duct Type | <input type="text" value="Flexible"/> |
| Wet Rooms | <input type="text" value="3"/> |
| SFP from Installer Commissioning Certificate | <input type="text" value="No"/> |

Summary for Input Data



19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

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

21.0 Fixed Cooling System

No

22.0 Pressure Testing

| | | |
|---------------------------|-------------|---|
| Designed AP ₅₀ | 4.00 | 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 |
|-------------------|----------|-------|----------|-------|
| Internal Lighting | 108.00 | 8.00 | 864.00 | 11 |
| External Lighting | 102.50 | 4.00 | 410.00 | 1 |

24.0 Main Heating 1

| | | |
|------------------------|----------------------|---|
| Percentage of Heat | 100.00 | % |
| Database Ref. No. | 107964 | |
| Fuel Type | Electricity | |
| SAP Code | 104 | |
| In Winter | 280.88 | |
| In Summer | 207.22 | |
| Model Name | HP290 Monobloc 4.5kW | |
| Manufacturer | Midea | |
| System Type | Heat Pump | |
| Controls SAP Code | 2207 | |
| PCDF Controls | 0 | |
| Delayed Start Stat | Yes | |
| Burner Control | On/Off | |
| HETAS approved System | No | |
| Is MHS Pumped | Pump in heated space | |
| Heating Pump Age | 2013 or later | |
| Heat Emitter | Radiators | |
| Flow Temperature | Enter value | |
| Flow Temperature Value | 45.00 | |

Summary for Input Data



25.0 Main Heating 2

26.0 Heat Networks

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

27.0 Secondary Heating

28.0 Water Heating

| | |
|--|---|
| Water Heating | <input type="text" value="Main Heating 1"/> |
| SAP Code | <input type="text" value="901"/> |
| Flue Gas Heat Recovery System | <input type="text" value="No"/> |
| Waste Water Heat Recovery Instantaneous System 1 | <input type="text" value="Yes"/> |
| Waste Water Heat Recovery Instantaneous System 2 | <input type="text" value="No"/> |
| Waste Water Heat Recovery Storage System | <input type="text" value="No"/> |
| Solar Panel | <input type="text" value="No"/> |
| Water use <= 125 litres/person/day | <input type="text" value="Yes"/> |
| Summer Immersion | <input type="text" value="No"/> |
| Cold Water Source | <input type="text" value="From mains"/> |
| Bath Count | <input type="text" value="1"/> |
| Baths connected to WWHRS | <input type="text" value="0"/> |
| Supplementary Immersion | <input type="text" value="No"/> |
| Immersion Only Heating Hot Water | <input type="text" value="No"/> |

28.1 Showers

| Description | Shower Type | Flow Rate [l/min] | Rated Power [kW] | Connected | Connected To |
|-------------|---|-------------------|------------------|-----------|------------------------|
| Shower | Combi boiler or unvented hot water system | 9.00 | | Yes | Instantaneous System 1 |

28.3 Waste Water Heat Recovery System Instantaneous System 1

| | |
|-------------|--|
| Database ID | <input type="text" value="80148"/> |
| Brand Model | <input type="text" value="Recoup, Pipe HEX"/> |
| Details | <input type="text" value="Year: 2019 + current Efficiency: 55.4 Utilisation factor: 0.957"/> |

29.0 Hot Water Cylinder

| | |
|--------------------------|---|
| Hot Water Cylinder | <input type="text" value="Hot Water Cylinder"/> |
| Cylinder Stat | <input type="text" value="Yes"/> |
| Cylinder In Heated Space | <input type="text" value="Yes"/> |
| Independent Time Control | <input type="text" value="Yes"/> |
| Insulation Type | <input type="text" value="Measured Loss"/> |
| Insulation Thickness | <input type="text" value="0"/> |
| Cylinder Volume | <input type="text" value="180.00"/> |
| Loss | <input type="text" value="1.63"/> |
| Pipes insulation | <input type="text" value="Fully insulated primary pipework"/> |
| In Airing Cupboard | <input type="text" value="No"/> |

L
kWh/day

31.0 Thermal Store

| | |
|------------------------|---|
| Thermal Store Pipework | <input type="text" value="within a single casing"/> |
|------------------------|---|

32.0 Photovoltaic Unit

| | |
|-----------------------|---|
| One Dwelling | <input type="text" value="One Dwelling"/> |
| Export Capable Meter? | <input type="text" value="Yes"/> |
| Connected To Dwelling | <input type="text" value="Yes"/> |
| Diverter | <input type="text" value="No"/> |

Summary for Input Data



| | | | | | | | | | | |
|------------------------|-----------------------------------|------------------|--------------------|--------------|------------------------|---------------------------|----------------------------------|---------------------------|--|--|
| Battery Capacity [kWh] | <input type="text" value="0.00"/> | | | | | | | | | |
| PV Cells kWp | Orientation | Elevation | Overshading | FGHRS | MCS Certificate | Overshading Factor | MCS Certificate Reference | Panel Manufacturer | | |
| 0.67 | East | 45° | None Or Little | No | No | 1.00 | | | | |

34.0 Small-scale Hydro

| | | | | | | | | | | | |
|---|-------------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| | <input type="text" value="None"/> | | | | | | | | | | |
| Electricity Generated | <input type="text" value="0.00"/> | | | | | | | | | | |
| Apportioned | <input type="text" value="0.00"/> | | | | | | | | | | |
| Connected to dwelling's electricity meter | <input type="text" value="Yes"/> | | | | | | | | | | |
| Electricity Generation | <input type="text" value="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 | 009423 - HT - Ferndale - SEMI | | Issued on Date | 04/11/2024 |
| Assessment Reference | Ideal HP290 | Prop Type Ref | HT - Ferndale - SEMI | |
| Property | Plot , HT - Ferndale - SEMI, Land off Thurnscoe Bridge Lane | | | |

| | | | | | |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating | 88 B | DER | 2.87 | TER | 11.76 |
| Environmental | 98 A | % DER < TER | | | 75.60 |
| CO ₂ Emissions (t/year) | 0.21 | DFEE | 34.71 | TFEE | 37.17 |
| Compliance Check | See BREL | % DFEE < TFEE | | | 6.62 |
| % DPER < TPER | 47.23 | DPER | 32.38 | TPER | 61.36 |

| | | | |
|------------------|--------------------|-------------|-----------|
| Assessor Details | Mr. George Leadley | Assessor ID | P719-0001 |
| Client | | | |

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

| | |
|--------------------------------|----------------------------|
| Orientation | East |
| 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 | 2024 |
| 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 | 185.35 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: | 17.34 m | 37.47 m ² | 2.31 m |
| | 1st Storey: | 17.34 m | 37.47 m ² | 2.62 m |

| | |
|-----------------|----------------------|
| 8.0 Living Area | 13.00 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 | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.24 | 60.00 | 85.47 | 61.67 | 0.00 | None | 23.80 | 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 | Filled Cavity with Edge Sealing | Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill | 0.00 | 110.00 | 40.51 | 0.00 | None |

| Description | Construction | Kappa (kJ/m ² K) | Area (m ²) |
|-----------------------|------------------------------|-----------------------------|------------------------|
| Ground Floor - Timber | Plasterboard on timber frame | 9.00 | 76.46 |
| First Floor - Timber | Plasterboard on timber frame | 9.00 | 98.51 |

| 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 | 0.09 | 9.00 | 37.47 | 37.47 | None | 0.00 | Enter Gross Area | 0.00 |

| Description | Storey | Construction | Area (m ²) |
|-------------|--------|--------------|------------------------|
|-------------|--------|--------------|------------------------|

Summary for Input Data



Ground Floor Lowest occupied Plasterboard ceiling, carpeted chipboard floor 37.47

11.0 Heat Loss Floors

| Description | Type | Storey Index | Construction | U-Value (W/m²K) | Shelter Code | Shelter Factor | Kappa (kJ/m²K) | Area (m²) |
|--------------|----------------------|-----------------|------------------------------------|-----------------|--------------|----------------|----------------|-----------|
| Ground Floor | Ground Floor - Solid | Lowest occupied | Suspended concrete floor, carpeted | 0.10 | None | 0.00 | 75.00 | 37.47 |

11.2 Internal Floors

| Description | Storey Index | Construction | Kappa (kJ/m²K) | Area (m²) |
|-------------|--------------|--|----------------|-----------|
| First Floor | | Plasterboard ceiling, carpeted chipboard floor | 9.00 | 37.47 |

12.0 Opening Types

| Description | Data Source | Type | Glazing | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|-------------|---------------------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Solid Doors | Manufacturer | Solid Door | | | | 0.00 | | | 1.30 |
| Windows | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.38 | | 1.00 | 0.86 |
| Patio Doors | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.35 | | 1.00 | 0.89 |

13.0 Openings

| Name | Opening Type | Location | Orientation | Area (m²) | Pitch |
|----------------|--------------|---------------|-------------|-----------|-------|
| Front Door | Solid Doors | External Wall | East | 2.15 | 0 |
| Front Windows | Windows | External Wall | East | 8.80 | 0 |
| RH Windows | Windows | External Wall | North | 5.71 | 0 |
| LH Windows | Windows | External Wall | South | 3.81 | 0 |
| LH Patio Doors | Patio Doors | External Wall | South | 3.33 | 0 |

14.0 Conservatory

None

15.0 Draught Proofing

100 %

16.0 Draught Lobby

No

17.0 Thermal Bridging

Calculate Bridges

17.1 List of Bridges

| Bridge Type | Source Type | Length | Psi | Adjusted Reference: | Imported |
|--|--------------------------|--------|------|------------------------|----------|
| E1 Steel lintel with perforated steel base plate | Non Gov Approved Schemes | 17.57 | 0.27 | 0.27 Knauf PSI Details | No |
| E3 Sill | Non Gov Approved Schemes | 14.96 | 0.02 | 0.02 Knauf PSI Details | No |
| E4 Jamb | Non Gov Approved Schemes | 34.80 | 0.02 | 0.02 Knauf PSI Details | No |
| E5 Ground floor (normal) | Independently assessed | 9.12 | 0.04 | 0.04 FES - Para | No |
| E6 Intermediate floor within a dwelling | Non Gov Approved Schemes | 17.34 | 0.00 | 0.00 Knauf PSI Details | No |
| E10 Eaves (insulation at ceiling level) | Non Gov Approved Schemes | 17.34 | 0.04 | 0.04 Knauf PSI Details | No |
| E16 Corner (normal) | Non Gov Approved Schemes | 9.86 | 0.04 | 0.04 Knauf PSI Details | No |
| E18 Party wall between dwellings | Non Gov Approved Schemes | 9.86 | 0.04 | 0.04 Knauf PSI Details | No |
| P1 Party wall - Ground floor | Independently assessed | 8.22 | 0.07 | 0.07 FES | No |
| P2 Party wall - Intermediate floor within a dwelling | Table K1 - Default | 8.22 | 0.00 | 0.00 Default | No |
| P4 Party wall - Roof (insulation at ceiling level) | Non Gov Approved Schemes | 8.22 | 0.09 | 0.09 Knauf PSI Details | No |
| E5 Ground floor (normal) | Independently assessed | 8.22 | 0.06 | 0.06 FES - Perp | No |

Y-value 0.06 W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

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

19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

Summary for Input Data



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

21.0 Fixed Cooling System

22.0 Pressure Testing

| | | |
|---------------------------|-------------|---|
| Designed AP ₅₀ | 4.00 | m ² /(h.m ²) @ 50 Pa |
| Property Tested? | Yes | |
| Test Method | Blower Door | |

22.0 Lighting

| Name | Efficacy | Power | Capacity | Count |
|-------------------|----------|-------|----------|-------|
| No Fixed Lighting | | | | |
| Internal Lighting | 108.00 | 8.00 | 864.00 | 11 |
| External Lighting | 102.50 | 4.00 | 410.00 | 1 |

24.0 Main Heating 1

| | | |
|------------------------|----------------------|---|
| Percentage of Heat | 100.00 | % |
| Database Ref. No. | 107964 | |
| Fuel Type | Electricity | |
| SAP Code | 104 | |
| In Winter | 280.51 | |
| In Summer | 207.16 | |
| Model Name | HP290 Monobloc 4.5kW | |
| Manufacturer | Midea | |
| System Type | Heat Pump | |
| Controls SAP Code | 2207 | |
| PCDF Controls | 0 | |
| Delayed Start Stat | Yes | |
| Burner Control | On/Off | |
| HETAS approved System | No | |
| Is MHS Pumped | Pump in heated space | |
| Heating Pump Age | 2013 or later | |
| Heat Emitter | Radiators | |
| Flow Temperature | Enter value | |
| Flow Temperature Value | 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

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 | Yes |
| Waste Water Heat Recovery Instantaneous System 2 | No |
| Waste Water Heat Recovery Storage System | No |
| Solar Panel | No |
| Water use <= 125 litres/person/day | Yes |
| Summer Immersion | No |
| Cold Water Source | From mains |
| Bath Count | 1 |
| Baths connected to WWHRS | 0 |
| Supplementary Immersion | No |
| Immersion Only Heating Hot Water | No |

28.1 Showers

| Description | Shower Type | Flow Rate [l/min] | Rated Power [kW] | Connected | Connected To |
|-----------------|---|-------------------|------------------|-----------|------------------------|
| Shower en-suite | Combi boiler or unvented hot water system | 9.00 | 9.30 | Yes | Instantaneous System 1 |
| | Combi boiler or unvented hot water system | 9.00 | 9.30 | No | |

28.3 Waste Water Heat Recovery System Instantaneous System 1

| | |
|-------------|---|
| Database ID | 80148 |
| Brand Model | Recoup, Pipe HEX |
| Details | Year: 2019 + current Efficiency: 55.4 Utilisation factor: 0.957 |

29.0 Hot Water Cylinder

| | | |
|--------------------------|----------------------------------|---------|
| Hot Water Cylinder | | |
| Cylinder Stat | Yes | |
| Cylinder In Heated Space | Yes | |
| Independent Time Control | Yes | |
| Insulation Type | Measured Loss | |
| Insulation Thickness | 0 | |
| Cylinder Volume | 180.00 | L |
| Loss | 1.63 | 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 |

32.0 Photovoltaic Unit

| | |
|------------------------|------|
| One Dwelling | |
| Export Capable Meter? | Yes |
| Connected To Dwelling | Yes |
| Diverter | No |
| Battery Capacity [kWh] | 0.00 |

| PV Cells kWp | Orientation | Elevation | Overshading | FGHRS | MCS Certificate | Overshading Factor | MCS Certificate Reference | Panel Manufacturer |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 0.90 | East | 30° | None Or Little | No | No | 1.00 | | |

34.0 Small-scale Hydro

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

Summary for Input Data



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 | 009423 - HT - Leyburn - DET | | Issued on Date | 04/11/2024 |
| Assessment Reference | Ideal HP290 | Prop Type Ref | HT- Leyburn - DET | |
| Property | Plot , HT - Leyburn - DET, Land off Thurnscoe Bridge Lane | | | |

| | | | | | |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating | 87 B | DER | 2.85 | TER | 11.64 |
| Environmental | 98 A | % DER < TER | | | 75.52 |
| CO ₂ Emissions (t/year) | 0.24 | DFEE | 38.15 | TFEE | 40.27 |
| Compliance Check | See BREL | % DFEE < TFEE | | | 5.25 |
| % DPER < TPER | 46.98 | DPER | 32.23 | TPER | 60.79 |

| | | | |
|------------------|--------------------|-------------|-----------|
| Assessor Details | Mr. George Leadley | Assessor ID | P719-0001 |
| Client | | | |

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

| | |
|--------------------------------|----------------------------|
| Orientation | East |
| Property Tenure | 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 | 2024 |
| 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 | 185.02 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: | 27.18 m | 43.93 m ² | 2.31 m |
| | 1st Storey: | 27.18 m | 43.93 m ² | 2.62 m |

| | |
|-----------------|----------------------|
| 8.0 Living Area | 15.72 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 | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.24 | 60.00 | 133.98 | 110.30 | 0.00 | None | 23.68 | Enter Gross Area |

| 9.2 Internal Walls | | | | |
|-----------------------|-----------------------------------|-----------------------------|------------------------|--|
| Description | Construction | Kappa (kJ/m ² K) | Area (m ²) | |
| Ground Floor - Timber | Plasterboard on timber frame | 9.00 | 19.73 | |
| First Floor - Timber | Plasterboard on timber frame | 9.00 | 101.29 | |
| Ground Floor - Block | Dense block, plasterboard on dabs | 75.00 | 48.97 | |

| 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 | 0.09 | 9.00 | 43.93 | 43.93 | None | 0.00 | Enter Gross Area | 0.00 |

| 10.2 Internal Ceilings | | | | |
|------------------------|-----------------|--|------------------------|--|
| Description | Storey | Construction | Area (m ²) | |
| Ground Floor | Lowest occupied | Plasterboard ceiling, carpeted chipboard floor | 43.93 | |

| 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) | |
| Ground Floor | Ground Floor - Solid | Lowest occupied | Suspended concrete floor, carpeted | 0.10 | None | 0.00 | 75.00 | 43.93 | |

Summary for Input Data



11.2 Internal Floors

| Description | Storey Index | Construction | Kappa (kJ/m²K) | Area (m²) |
|-------------|--------------|--|----------------|-----------|
| First Floor | | Plasterboard ceiling, carpeted chipboard floor | 9.00 | 43.93 |

12.0 Opening Types

| Description | Data Source | Type | Glazing | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|-------------|---------------------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Solid Doors | Manufacturer | Solid Door | | | | 0.00 | | | 1.30 |
| Windows | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.38 | | 1.00 | 0.86 |
| Patio Doors | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.35 | | 1.00 | 0.89 |

13.0 Openings

| Name | Opening Type | Location | Orientation | Area (m²) | Pitch |
|----------------|--------------|---------------|-------------|-----------|-------|
| Front Door | Solid Doors | External Wall | East | 2.15 | 0 |
| Front Windows | Windows | External Wall | East | 9.28 | 0 |
| RH Windows | Windows | External Wall | North | 5.00 | 0 |
| LH Windows | Windows | External Wall | South | 3.92 | 0 |
| LH Patio Doors | Patio Doors | External Wall | South | 3.33 | 0 |

14.0 Conservatory

15.0 Draught Proofing

 %

16.0 Draught Lobby

17.0 Thermal Bridging

17.1 List of Bridges

| Bridge Type | Source Type | Length | Psi | Adjusted Reference: | Imported |
|--|--------------------------|--------|------|------------------------|----------|
| E1 Steel lintel with perforated steel base plate | Non Gov Approved Schemes | 17.57 | 0.27 | 0.27 Knauf PSI Details | No |
| E3 Sill | Non Gov Approved Schemes | 14.96 | 0.02 | 0.02 Knauf PSI Details | No |
| E4 Jamb | Non Gov Approved Schemes | 34.80 | 0.02 | 0.02 Knauf PSI Details | No |
| E5 Ground floor (normal) | Independently assessed | 16.58 | 0.04 | FES - Para | No |
| E6 Intermediate floor within a dwelling | Non Gov Approved Schemes | 27.18 | 0.00 | 0.00 Knauf PSI Details | No |
| E10 Eaves (insulation at ceiling level) | Non Gov Approved Schemes | 16.58 | 0.04 | 0.04 Knauf PSI Details | No |
| E12 Gable (insulation at ceiling level) | Non Gov Approved Schemes | 10.60 | 0.04 | 0.04 Knauf PSI Details | No |
| E16 Corner (normal) | Non Gov Approved Schemes | 19.72 | 0.04 | 0.04 Knauf PSI Details | No |
| E5 Ground floor (normal) | Independently assessed | 10.60 | 0.06 | 0.06 FES - Perp | No |

Y-value

 W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

| | |
|--|---|
| Mechanical Ventilation System Present | <input type="text" value="Yes"/> |
| Approved Installation | <input type="text" value="Yes"/> |
| Mechanical Ventilation data Type | <input type="text" value="Database"/> |
| Type | <input type="text" value="Mechanical extract ventilation - decentralised"/> |
| MV Reference Number | <input type="text" value="500776"/> |
| Duct Type | <input type="text" value="Flexible"/> |
| Wet Rooms | <input type="text" value="5"/> |
| SFP from Installer Commissioning Certificate | <input type="text" value="No"/> |

19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

| | |
|--|--------------------------------|
| Number of open chimneys | <input type="text" value="0"/> |
| Number of open flues | <input type="text" value="0"/> |
| Number of chimneys/flues attached to closed fire | <input type="text" value="0"/> |
| Number of flues attached to solid fuel boiler | <input type="text" value="0"/> |
| Number of flues attached to other heater | <input type="text" value="0"/> |

Summary for Input Data



| | |
|-------------------------------------|--------------------------------|
| Number of blocked chimneys | <input type="text" value="0"/> |
| Number of intermittent extract fans | <input type="text" value="0"/> |
| Number of passive vents | <input type="text" value="0"/> |
| Number of flueless gas fires | <input type="text" value="0"/> |

21.0 Fixed Cooling System

22.0 Pressure Testing

| | | |
|---------------------------|--|---|
| Designed AP ₅₀ | <input type="text" value="4.00"/> | m ² /(h.m ²) @ 50 Pa |
| Property Tested? | <input type="text" value="Yes"/> | |
| Test Method | <input type="text" value="Blower Door"/> | |

22.0 Lighting

No Fixed Lighting

| Name | Efficacy | Power | Capacity | Count |
|-------------------|----------|-------|----------|-------|
| Internal Lighting | 108.00 | 8.00 | 864.00 | 12 |
| External Lighting | 102.50 | 4.00 | 410.00 | 1 |

24.0 Main Heating 1

| | | |
|------------------------|---|---|
| Percentage of Heat | <input type="text" value="100.00"/> | % |
| Database Ref. No. | <input type="text" value="107964"/> | |
| Fuel Type | <input type="text" value="Electricity"/> | |
| SAP Code | <input type="text" value="104"/> | |
| In Winter | <input type="text" value="278.48"/> | |
| In Summer | <input type="text" value="206.56"/> | |
| Model Name | <input type="text" value="HP290 Monobloc 4.5kW"/> | |
| Manufacturer | <input type="text" value="Midea"/> | |
| System Type | <input type="text" value="Heat Pump"/> | |
| Controls SAP Code | <input type="text" value="2207"/> | |
| PCDF Controls | <input type="text" value="0"/> | |
| Delayed Start Stat | <input type="text" value="Yes"/> | |
| Burner Control | <input type="text" value="On/Off"/> | |
| HETAS approved System | <input type="text" value="No"/> | |
| Is MHS Pumped | <input type="text" value="Pump in heated space"/> | |
| Heating Pump Age | <input type="text" value="2013 or later"/> | |
| Heat Emitter | <input type="text" value="Radiators"/> | |
| Flow Temperature | <input type="text" value="Enter value"/> | |
| Flow Temperature Value | <input type="text" 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

| | |
|--|---|
| Water Heating | <input type="text" value="Main Heating 1"/> |
| SAP Code | <input type="text" value="901"/> |
| Flue Gas Heat Recovery System | <input type="text" value="No"/> |
| Waste Water Heat Recovery Instantaneous System 1 | <input type="text" value="Yes"/> |

Summary for Input Data

| | |
|--|------------|
| Waste Water Heat Recovery Instantaneous System 2 | No |
| Waste Water Heat Recovery Storage System | No |
| Solar Panel | No |
| Water use <= 125 litres/person/day | Yes |
| Summer Immersion | No |
| Cold Water Source | From mains |
| Bath Count | 1 |
| Baths connected to WWHRS | 0 |
| Supplementary Immersion | No |
| Immersion Only Heating Hot Water | No |

28.1 Showers

| Description | Shower Type | Flow Rate [l/min] | Rated Power [kW] | Connected | Connected To |
|-------------|---|-------------------|------------------|-----------|------------------------|
| Shower | Combi boiler or unvented hot water system | 9.00 | | Yes | Instantaneous System 1 |
| Ensuite | Combi boiler or unvented hot water system | 9.00 | 9.30 | No | |

28.3 Waste Water Heat Recovery System Instantaneous System 1

| | |
|-------------|---|
| Database ID | 80148 |
| Brand Model | Recoup, Pipe HEX |
| Details | Year: 2019 + current Efficiency: 55.4 Utilisation factor: 0.957 |

29.0 Hot Water Cylinder

| | | |
|--------------------------|----------------------------------|---------|
| Hot Water Cylinder | Hot Water Cylinder | |
| Cylinder Stat | Yes | |
| Cylinder In Heated Space | Yes | |
| Independent Time Control | Yes | |
| Insulation Type | Measured Loss | |
| Insulation Thickness | 0 | |
| Cylinder Volume | 180.00 | L |
| Loss | 1.63 | 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 |

32.0 Photovoltaic Unit

| | |
|------------------------|--------------|
| One Dwelling | One Dwelling |
| Export Capable Meter? | Yes |
| Connected To Dwelling | Yes |
| Diverter | No |
| Battery Capacity [kWh] | 0.00 |

| PV Cells kWp | Orientation | Elevation | Overshading | FGHRS | MCS Certificate | Overshading Factor | MCS Certificate Reference | Panel Manufacturer |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 1.10 | East | 30° | None Or Little | No | No | 1.00 | | |

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 | 009423 - HT - Oakwood - SEMI | | Issued on Date | 04/11/2024 |
| Assessment Reference | Ideal HP290 | Prop Type Ref | HT- Oakwood - SEMI | |
| Property | Plot , HT - Oakwood - SEMI, Land off Thurnscoe Bridge Lane | | | |

| | | | | | |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating | 87 B | DER | 2.86 | TER | 11.63 |
| Environmental | 98 A | % DER < TER | | | 75.41 |
| CO ₂ Emissions (t/year) | 0.24 | DFEE | 37.76 | TFEE | 41.72 |
| Compliance Check | See BREL | % DFEE < TFEE | | | 9.49 |
| % DPER < TPER | 46.70 | DPER | 32.45 | TPER | 60.88 |

| | | | |
|------------------|--------------------|-------------|-----------|
| Assessor Details | Mr. George Leadley | Assessor ID | P719-0001 |
| Client | | | |

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

| | |
|--------------------------------|----------------------------|
| Orientation | East |
| Property Tenure | ND |
| Transaction Type | 6 |
| Terrain Type | Suburban |
| 1.0 Property Type | House, Semi-Detached |
| Which Floor | 0 |
| 2.0 Number of Storeys | 2 |
| 3.0 Date Built | 2024 |
| 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 | 215.45 kJ/m ² K |
| 7.0 Electricity Tariff | Standard |
| Smart electricity meter fitted | Yes |
| Smart gas meter fitted | Yes |

| | Heat Loss Perimeter | Internal Floor Area | Unheated Space Floor Area | Average Storey Height |
|---------------|---------------------|----------------------|---------------------------|-----------------------|
| Ground floor: | 21.27 m | 37.69 m ² | 12.75 m ² | 2.59 m |
| 1st Storey: | 19.93 m | 48.65 m ² | | 2.34 m |

| | |
|-----------------|----------------------|
| 8.0 Living Area | 13.11 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 | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.24 | 60.00 | 83.46 | 68.82 | 0.00 | None | 14.64 | Enter Gross Area |
| Garage Wall | Solid Wall | Solid wall : plasterboard on dabs, 200 mm dense block, insulated externally | 0.24 | 150.00 | 17.23 | 17.23 | 0.70 | Garage Single 1 Inside | 0.00 | Enter Gross Area |
| Garage Wall Stair Well | Timber Frame | Timber framed wall (one layer of plasterboard) | 0.30 | 9.00 | 2.77 | 2.77 | 0.70 | Garage Single 1 Inside | 0.00 | 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 | Filled Cavity with Edge Sealing | Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill | 0.00 | 110.00 | 44.91 | 0.00 | None |

| Description | Construction | Kappa (kJ/m ² K) | Area (m ²) |
|-----------------------|-----------------------------------|-----------------------------|------------------------|
| Ground Floor - Timber | Plasterboard on timber frame | 9.00 | 37.97 |
| Ground Floor - Block | Dense block, plasterboard on dabs | 75.00 | 15.95 |
| First Floor - Timber | Plasterboard on timber frame | 9.00 | 97.06 |

| 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 |
|-------------|------|--------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------|----------------|------------------|----------|
|-------------|------|--------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------|----------------|------------------|----------|

Summary for Input Data



Cold Roof External Plane Plasterboard, insulated at ceiling level 0.09 9.00 50.44 50.44 None 0.00 Enter Gross Area 0.00

10.2 Internal Ceilings

| Description | Storey | Construction | Area (m ²) |
|--------------|-----------------|--|------------------------|
| Ground Floor | Lowest occupied | Plasterboard ceiling, carpeted chipboard floor | 35.90 |

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) |
|--------------------------|------------------------|-----------------|---|------------------------------|------------------------|----------------|-----------------------------|------------------------|
| Ground Floor | Ground Floor - Solid | Lowest occupied | Suspended concrete floor, carpeted | 0.10 | None | 0.00 | 75.00 | 37.69 |
| Floor Above Garage | Exposed Floor - Timber | +1 | Timber exposed floor, insulation between joists | 0.15 | Garage Single 1 Inside | 0.70 | 20.00 | 11.09 |
| Stairwell Floor - Garage | Exposed Floor - Timber | +1 | Timber exposed floor, insulation between joists | 0.30 | Garage Single 1 Inside | 0.70 | 20.00 | 2.01 |

11.2 Internal Floors

| Description | Storey Index | Construction | Kappa (kJ/m ² K) | Area (m ²) |
|-------------|--------------|--|-----------------------------|------------------------|
| First Floor | | Plasterboard ceiling, carpeted chipboard floor | 9.00 | 35.90 |

12.0 Opening Types

| Description | Data Source | Type | Glazing | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m ² K) |
|-------------|---------------------------|------------|------------------------|-------------|--------------|---------|------------|--------------|------------------------------|
| Solid Doors | Manufacturer | Solid Door | | | | 0.00 | | | 1.30 |
| Windows | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.38 | | 1.00 | 0.86 |
| Patio Doors | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.35 | | 1.00 | 0.89 |

13.0 Openings

| Name | Opening Type | Location | Orientation | Area (m ²) | Pitch |
|------------------|--------------|---------------|-------------|------------------------|-------|
| Front Door | Solid Doors | External Wall | East | 2.15 | 0 |
| Front Windows | Windows | External Wall | East | 4.42 | 0 |
| LH Windows | Windows | External Wall | South | 0.82 | 0 |
| Rear Windows | Windows | External Wall | West | 3.92 | 0 |
| Rear Patio Doors | Patio Doors | External Wall | West | 3.33 | 0 |

14.0 Conservatory

None

15.0 Draught Proofing

100 %

16.0 Draught Lobby

No

17.0 Thermal Bridging

Calculate Bridges

17.1 List of Bridges

| Bridge Type | Source Type | Length | Psi | Adjusted Reference: | Imported |
|--|--------------------------|--------|-------|-------------------------|----------|
| E1 Steel lintel with perforated steel base plate | Non Gov Approved Schemes | 10.33 | 0.27 | 0.27 Knauf PSI Details | No |
| E3 Sill | Non Gov Approved Schemes | 7.72 | 0.02 | 0.02 Knauf PSI Details | No |
| E4 Jamb | Non Gov Approved Schemes | 24.90 | 0.02 | 0.02 Knauf PSI Details | No |
| E5 Ground floor (normal) | Independently assessed | 6.74 | 0.04 | 0.04 FES - Para | No |
| E5 Ground floor (normal) | Independently assessed | 7.02 | 0.06 | 0.06 FES - Perp | No |
| E20 Exposed floor (normal) | Independently assessed | 6.56 | 0.05 | 0.05 FES | No |
| E21 Exposed floor (inverted) | Independently assessed | 5.74 | 0.02 | 0.02 FES | No |
| E6 Intermediate floor within a dwelling | Non Gov Approved Schemes | 13.36 | 0.00 | 0.00 Knauf PSI Details | No |
| E10 Eaves (insulation at ceiling level) | Non Gov Approved Schemes | 12.70 | 0.04 | 0.04 Knauf PSI Details | No |
| E24 Eaves (insulation at ceiling level - inverted) | Table K1 - Default | 1.33 | 0.15 | 0.15 | No |
| E12 Gable (insulation at ceiling level) | Non Gov Approved Schemes | 9.90 | 0.04 | 0.04 NYT PSI Details | No |
| E16 Corner (normal) | Non Gov Approved Schemes | 9.59 | 0.04 | 0.04 Knauf PSI Details | No |
| E16 Corner (normal) | Table K1 - Default | 5.76 | 0.18 | 0.18 | No |
| E17 Corner (inverted - internal area greater than external area) | Non Gov Approved Schemes | 2.31 | -0.09 | -0.09 Knauf PSI Details | No |
| E17 Corner (inverted - internal area greater than external area) | Table K1 - Default | 3.17 | 0.00 | 0.00 | No |
| E18 Party wall between dwellings | Non Gov Approved Schemes | 9.87 | 0.04 | 0.04 Knauf PSI Details | No |
| P1 Party wall - Ground floor | Independently assessed | 9.90 | 0.07 | 0.07 FES | No |
| P2 Party wall - Intermediate floor within a dwelling | Table K1 - Default | 8.56 | 0.00 | 0.00 Default | No |
| P4 Party wall - Roof (insulation at ceiling level) | Non Gov Approved Schemes | 9.90 | 0.09 | 0.09 Knauf | No |
| E20 Exposed floor (normal) | Table K1 - Default | 4.02 | 0.32 | 0.32 | No |
| E21 Exposed floor (inverted) | Table K1 - Default | 4.84 | 0.32 | 0.32 | No |
| E5 Ground floor (normal) | Independently assessed | 7.51 | 0.05 | 0.05 FES - Garage | No |

Y-value 0.06 W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

| | |
|---------------------------------------|--|
| Mechanical Ventilation System Present | Yes |
| Approved Installation | Yes |
| Mechanical Ventilation data Type | Database |
| Type | Mechanical extract ventilation - decentralised |
| MV Reference Number | 500776 |

Summary for Input Data



| | |
|--|----------|
| Duct Type | Flexible |
| Wet Rooms | 4 |
| SFP from Installer Commissioning Certificate | No |

19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

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

21.0 Fixed Cooling System

| |
|----|
| No |
|----|

22.0 Pressure Testing

| | | |
|---------------------------|-------------|---|
| Designed AP ₅₀ | 4.00 | 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 |
| Internal Lighting | 108.00 | 8.00 | 864.00 | 13 |
| External Lighting | 102.50 | 4.00 | 410.00 | 1 |

24.0 Main Heating 1

| | |
|-----------------------|------------------------|
| Database | |
| Percentage of Heat | 100.00 % |
| Database Ref. No. | 107964 |
| Fuel Type | Electricity |
| SAP Code | 104 |
| In Winter | 279.46 |
| In Summer | 207.00 |
| Model Name | HP290 Monobloc 4.5kW |
| Manufacturer | Midea |
| System Type | Heat Pump |
| Controls SAP Code | 2207 |
| PCDF Controls | 0 |
| Delayed Start Stat | Yes |
| Burner Control | On/Off |
| HETAS approved System | No |
| Is MHS Pumped | Pump in unheated space |
| Heating Pump Age | 2013 or later |

Summary for Input Data



Heat Emitter

Flow Temperature

Flow Temperature Value

25.0 Main Heating 2

26.0 Heat Networks

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

27.0 Secondary Heating

28.0 Water Heating

Water Heating

SAP Code

Flue Gas Heat Recovery System

Waste Water Heat Recovery Instantaneous System 1

Waste Water Heat Recovery Instantaneous System 2

Waste Water Heat Recovery Storage System

Solar Panel

Water use <= 125 litres/person/day

Summer Immersion

Cold Water Source

Bath Count

Baths connected to WWHRS

Supplementary Immersion

Immersion Only Heating Hot Water

28.1 Showers

| Description | Shower Type | Flow Rate [l/min] | Rated Power [kW] | Connected | Connected To |
|-----------------|---|-------------------|------------------|-----------|------------------------|
| Shower en-suite | Combi boiler or unvented hot water system | 9.00 | 9.30 | Yes | Instantaneous System 1 |
| | Combi boiler or unvented hot water system | 9.00 | 9.30 | No | |

28.3 Waste Water Heat Recovery System Instantaneous System 1

Database ID

Brand Model

Details

29.0 Hot Water Cylinder

Hot Water Cylinder

Cylinder Stat

Cylinder In Heated Space

Independent Time Control

Insulation Type

Insulation Thickness

Cylinder Volume L

Loss kWh/day

Pipes insulation

In Airing Cupboard

31.0 Thermal Store

Thermal Store

Thermal Store Pipework

Summary for Input Data



32.0 Photovoltaic Unit

| |
|------------------------|
| One Dwelling |
| Export Capable Meter? |
| Yes |
| Connected To Dwelling |
| Yes |
| Diverter |
| No |
| Battery Capacity [kWh] |
| 0.00 |

| PV Cells kWp | Orientation | Elevation | Overshading | FGHRS | MCS Certificate | Overshading Factor | MCS Certificate Reference | Panel Manufacturer |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 1.10 | East | 30° | None Or Little | No | No | 1.00 | | |

34.0 Small-scale Hydro

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

kWh/Year

| 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 | 009423 - HT - R2.1 - SEMI | | Issued on Date | 04/11/2024 |
| Assessment Reference | Ideal HP290 | Prop Type Ref | HT - R2.1 - SEMI | |
| Property | Plot , HT - R2.1 - SEMI, Land off Thurnscoe Bridge Lane | | | |

| | | | | | |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating | 88 B | DER | 2.98 | TER | 11.96 |
| Environmental | 98 A | % DER < TER | | | 75.08 |
| CO ₂ Emissions (t/year) | 0.22 | DFEE | 35.79 | TFEE | 38.88 |
| Compliance Check | See BREL | % DFEE < TFEE | | | 7.94 |
| % DPER < TPER | 47.63 | DPER | 32.72 | TPER | 62.49 |

| | | | |
|------------------|--------------------|-------------|-----------|
| Assessor Details | Mr. George Leadley | Assessor ID | P719-0001 |
| Client | | | |

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

| | |
|--------------------------------|----------------------------|
| Orientation | North |
| Property Tenure | ND |
| Transaction Type | 6 |
| Terrain Type | Suburban |
| 1.0 Property Type | House, Semi-Detached |
| Which Floor | 0 |
| 2.0 Number of Storeys | 2 |
| 3.0 Date Built | 2024 |
| 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 | 191.46 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: | 18.70 m | 39.20 m ² | 2.31 m |
| | 1st Storey: | 17.34 m | 37.47 m ² | 2.63 m |

| | |
|-----------------|----------------------|
| 8.0 Living Area | 19.26 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 | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.24 | 60.00 | 88.71 | 71.86 | 0.00 | None | 16.85 | 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 | Filled Cavity with Edge Sealing | Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill | 0.00 | 110.00 | 43.70 | 0.00 | None |

| Description | Construction | Kappa (kJ/m ² K) | Area (m ²) |
|-----------------------|------------------------------|-----------------------------|------------------------|
| Ground Floor - Timber | Plasterboard on timber frame | 9.00 | 58.03 |
| First Floor - Timber | Plasterboard on timber frame | 9.00 | 81.58 |

| 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 | 0.09 | 9.00 | 39.20 | 39.20 | None | 0.00 | Enter Gross Area | 0.00 |

| Description | Storey | Construction | Area (m ²) |
|-------------|--------|--------------|------------------------|
|-------------|--------|--------------|------------------------|

Summary for Input Data



Ground Floor Lowest occupied Plasterboard ceiling, carpeted chipboard floor 37.47

11.0 Heat Loss Floors

| Description | Type | Storey Index | Construction | U-Value (W/m²K) | Shelter Code | Shelter Factor | Kappa (kJ/m²K) | Area (m²) |
|--------------|----------------------|-----------------|------------------------------------|-----------------|--------------|----------------|----------------|-----------|
| Ground Floor | Ground Floor - Solid | Lowest occupied | Suspended concrete floor, carpeted | 0.10 | None | 0.00 | 75.00 | 39.20 |

11.2 Internal Floors

| Description | Storey Index | Construction | Kappa (kJ/m²K) | Area (m²) |
|-------------|--------------|--|----------------|-----------|
| First Floor | | Plasterboard ceiling, carpeted chipboard floor | 9.00 | 37.47 |

12.0 Opening Types

| Description | Data Source | Type | Glazing | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|-------------|---------------------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Solid Doors | Manufacturer | Solid Door | | | | 0.00 | | | 1.30 |
| Windows | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.38 | | 1.00 | 0.86 |
| Patio Doors | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.35 | | 1.00 | 0.89 |

13.0 Openings

| Name | Opening Type | Location | Orientation | Area (m²) | Pitch |
|----------------|--------------|---------------|-------------|-----------|-------|
| Front Door | Solid Doors | External Wall | North | 2.15 | 0 |
| Front Windows | Windows | External Wall | North | 1.44 | 0 |
| RH Windows | Windows | External Wall | West | 6.12 | 0 |
| LH Windows | Windows | External Wall | East | 3.81 | 0 |
| LH Patio Doors | Patio Doors | External Wall | East | 3.33 | 0 |

14.0 Conservatory

None

15.0 Draught Proofing

100 %

16.0 Draught Lobby

No

17.0 Thermal Bridging

Calculate Bridges

17.1 List of Bridges

| Bridge Type | Source Type | Length | Psi | Adjusted Reference: | Imported |
|--|--------------------------|--------|-------|-------------------------|----------|
| E1 Steel lintel with perforated steel base plate | Non Gov Approved Schemes | 12.37 | 0.27 | 0.27 Knauf PSI Details | No |
| E3 Sill | Non Gov Approved Schemes | 9.77 | 0.02 | 0.02 Knauf PSI Details | No |
| E4 Jamb | Non Gov Approved Schemes | 28.80 | 0.02 | 0.02 Knauf PSI Details | No |
| E5 Ground floor (normal) | Independently assessed | 9.12 | 0.04 | 0.04 FES - Para | No |
| E6 Intermediate floor within a dwelling | Non Gov Approved Schemes | 16.06 | 0.00 | 0.00 Knauf PSI Details | No |
| E10 Eaves (insulation at ceiling level) | Non Gov Approved Schemes | 10.39 | 0.04 | 0.04 Knauf PSI Details | No |
| E24 Eaves (insulation at ceiling level - inverted) | Table K1 - Default | 1.27 | 0.15 | 0.15 | No |
| E12 Gable (insulation at ceiling level) | Non Gov Approved Schemes | 9.58 | 0.04 | 0.04 Knauf PSI Details | No |
| E16 Corner (normal) | Non Gov Approved Schemes | 12.18 | 0.04 | 0.04 Knauf PSI Details | No |
| E17 Corner (inverted - internal area greater than external area) | Non Gov Approved Schemes | 2.31 | -0.09 | -0.09 Knauf PSI Details | No |
| E18 Party wall between dwellings | Non Gov Approved Schemes | 9.87 | 0.04 | 0.04 Knauf PSI Details | No |
| P1 Party wall - Ground floor | Independently assessed | 9.58 | 0.07 | 0.07 FES | No |
| P2 Party wall - Intermediate floor within a dwelling | Table K1 - Default | 8.22 | 0.00 | 0.00 Default | No |
| P4 Party wall - Roof (insulation at ceiling level) | Non Gov Approved Schemes | 9.58 | 0.09 | 0.09 Knauf PSI Details | No |
| E5 Ground floor (normal) | Independently assessed | 9.58 | 0.06 | 0.06 FES - Perp | No |

Y-value 0.05 W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

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

19.1 Mechanical extract ventilation - Decentralised

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

Summary for Input Data



0.08 Through Wall Fan 2
Other Wet Room

20.0 Fans, Open Fireplaces, Flues

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

21.0 Fixed Cooling System

No

22.0 Pressure Testing

Yes

| | | |
|---------------------------|-------------|---|
| Designed AP ₅₀ | 4.00 | 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 |
|-------------------|----------|-------|----------|-------|
| Internal Lighting | 108.00 | 8.00 | 864.00 | 10 |
| External Lighting | 102.50 | 4.00 | 410.00 | 1 |

24.0 Main Heating 1

Database

| | | |
|------------------------|----------------------|---|
| Percentage of Heat | 100.00 | % |
| Database Ref. No. | 107964 | |
| Fuel Type | Electricity | |
| SAP Code | 104 | |
| In Winter | 280.98 | |
| In Summer | 207.24 | |
| Model Name | HP290 Monobloc 4.5kW | |
| Manufacturer | Midea | |
| System Type | Heat Pump | |
| Controls SAP Code | 2207 | |
| PCDF Controls | 0 | |
| Delayed Start Stat | Yes | |
| Burner Control | On/Off | |
| HETAS approved System | No | |
| Is MHS Pumped | Pump in heated space | |
| Heating Pump Age | 2013 or later | |
| Heat Emitter | Radiators | |
| Flow Temperature | Enter value | |
| Flow Temperature Value | 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 | | | | | | | | |

Summary for Input Data

Heat source 5 None

27.0 Secondary Heating

28.0 Water Heating

Water Heating

SAP Code

Flue Gas Heat Recovery System

Waste Water Heat Recovery Instantaneous System 1

Waste Water Heat Recovery Instantaneous System 2

Waste Water Heat Recovery Storage System

Solar Panel

Water use <= 125 litres/person/day

Summer Immersion

Cold Water Source

Bath Count

Baths connected to WWHRS

Supplementary Immersion

Immersion Only Heating Hot Water

28.1 Showers

| Description | Shower Type | Flow Rate [l/min] | Rated Power [kW] | Connected | Connected To |
|-------------|---|-------------------|------------------|-----------|------------------------|
| Shower | Combi boiler or unvented hot water system | 9.00 | | Yes | Instantaneous System 1 |

28.3 Waste Water Heat Recovery System Instantaneous System 1

Database ID

Brand Model

Details

29.0 Hot Water Cylinder

Cylinder Stat

Cylinder In Heated Space

Independent Time Control

Insulation Type

Insulation Thickness

Cylinder Volume L

Loss kWh/day

Pipes insulation

In Airing Cupboard

31.0 Thermal Store

Thermal Store Pipework

32.0 Photovoltaic Unit

Export Capable Meter?

Connected To Dwelling

Diverter

Battery Capacity [kWh]

| PV Cells kWp | Orientation | Elevation | Overshading | FGHRS | MCS Certificate | Overshading Factor | MCS Certificate Reference | Panel Manufacturer |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 0.70 | East | 30° | None Or Little | No | No | 1.00 | | |

34.0 Small-scale Hydro

Electricity Generated

Apportioned kWh/Year

Summary for Input Data



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 | 009423 - HT - Ripley - END | | Issued on Date | 04/11/2024 |
| Assessment Reference | Ideal HP290 | Prop Type Ref | HT - Ripley - END | |
| Property | Plot , HT - Ripley - END, Land off Thurnscoe Bridge Lane | | | |

| | | | | | |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating | 88 B | DER | 2.95 | TER | 11.96 |
| Environmental | 98 A | % DER < TER | | | 75.33 |
| CO ₂ Emissions (t/year) | 0.22 | DFEE | 35.79 | TFEE | 38.88 |
| Compliance Check | See BREL | % DFEE < TFEE | | | 7.95 |
| % DPER < TPER | 46.98 | DPER | 33.13 | TPER | 62.49 |

| | | | |
|------------------|--------------------|-------------|-----------|
| Assessor Details | Mr. George Leadley | Assessor ID | P719-0001 |
| Client | | | |

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

| | | |
|--------------------------------|---------------------|---------------------|
| Orientation | North | |
| Property Tenure | ND | |
| Transaction Type | 6 | |
| Terrain Type | Suburban | |
| 1.0 Property Type | House, End-Terrace | |
| Which Floor | 0 | |
| 2.0 Number of Storeys | 2 | |
| 3.0 Date Built | 2024 | |
| 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 | 193.31 | 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: | 18.70 m | 39.20 m ² | 2.31 m |
| | 1st Storey: | 17.34 m | 37.47 m ² | 2.63 m |

| | | |
|-----------------|-------|----------------|
| 8.0 Living Area | 19.26 | 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 | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.24 | 60.00 | 88.71 | 71.86 | 0.00 | None | 16.85 | 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 | Filled Cavity with Edge Sealing | Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill | 0.00 | 110.00 | 43.70 | 0.00 | None |

| Description | Construction | Kappa (kJ/m ² K) | Area (m ²) |
|-----------------------|------------------------------|-----------------------------|------------------------|
| Ground Floor - Timber | Plasterboard on timber frame | 9.00 | 58.03 |
| First Floor - Timber | Plasterboard on timber frame | 9.00 | 97.31 |

| 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 | 0.09 | 9.00 | 39.20 | 39.20 | None | 0.00 | Enter Gross Area | 0.00 |

| Description | Storey | Construction | Area (m ²) |
|-------------|--------|--------------|------------------------|
|-------------|--------|--------------|------------------------|

Summary for Input Data



Ground Floor Lowest occupied Plasterboard ceiling, carpeted chipboard floor 37.47

11.0 Heat Loss Floors

| Description | Type | Storey Index | Construction | U-Value (W/m²K) | Shelter Code | Shelter Factor | Kappa (kJ/m²K) | Area (m²) |
|--------------|----------------------|-----------------|------------------------------------|-----------------|--------------|----------------|----------------|-----------|
| Ground Floor | Ground Floor - Solid | Lowest occupied | Suspended concrete floor, carpeted | 0.10 | None | 0.00 | 75.00 | 39.20 |

11.2 Internal Floors

| Description | Storey Index | Construction | Kappa (kJ/m²K) | Area (m²) |
|-------------|--------------|--|----------------|-----------|
| First Floor | | Plasterboard ceiling, carpeted chipboard floor | 9.00 | 37.47 |

12.0 Opening Types

| Description | Data Source | Type | Glazing | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|-------------|---------------------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Solid Doors | Manufacturer | Solid Door | | | | 0.00 | | | 1.30 |
| Windows | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.38 | | 1.00 | 0.86 |
| Patio Doors | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.35 | | 1.00 | 0.89 |

13.0 Openings

| Name | Opening Type | Location | Orientation | Area (m²) | Pitch |
|----------------|--------------|---------------|-------------|-----------|-------|
| Front Door | Solid Doors | External Wall | North | 2.15 | 0 |
| Front Windows | Windows | External Wall | North | 1.44 | 0 |
| RH Windows | Windows | External Wall | West | 6.12 | 0 |
| LH Windows | Windows | External Wall | East | 3.81 | 0 |
| LH Patio Doors | Patio Doors | External Wall | East | 3.33 | 0 |

14.0 Conservatory

None

15.0 Draught Proofing

100 %

16.0 Draught Lobby

No

17.0 Thermal Bridging

Calculate Bridges

17.1 List of Bridges

| Bridge Type | Source Type | Length | Psi | Adjusted Reference: | Imported |
|--|--------------------------|--------|-------|-------------------------|----------|
| E1 Steel lintel with perforated steel base plate | Non Gov Approved Schemes | 12.37 | 0.27 | 0.27 Knauf PSI Details | No |
| E3 Sill | Non Gov Approved Schemes | 9.77 | 0.02 | 0.02 Knauf PSI Details | No |
| E4 Jamb | Non Gov Approved Schemes | 28.80 | 0.02 | 0.02 Knauf PSI Details | No |
| E5 Ground floor (normal) | Independently assessed | 9.12 | 0.04 | 0.04 FES - Para | No |
| E6 Intermediate floor within a dwelling | Non Gov Approved Schemes | 16.06 | 0.00 | 0.00 Knauf PSI Details | No |
| E10 Eaves (insulation at ceiling level) | Non Gov Approved Schemes | 10.39 | 0.04 | 0.04 Knauf PSI Details | No |
| E24 Eaves (insulation at ceiling level - inverted) | Table K1 - Default | 1.27 | 0.15 | 0.15 | No |
| E12 Gable (insulation at ceiling level) | Non Gov Approved Schemes | 9.58 | 0.04 | 0.04 Knauf PSI Details | No |
| E16 Corner (normal) | Non Gov Approved Schemes | 12.18 | 0.04 | 0.04 Knauf PSI Details | No |
| E17 Corner (inverted - internal area greater than external area) | Non Gov Approved Schemes | 2.31 | -0.09 | -0.09 Knauf PSI Details | No |
| E18 Party wall between dwellings | Non Gov Approved Schemes | 9.87 | 0.04 | 0.04 Knauf PSI Details | No |
| P1 Party wall - Ground floor | Independently assessed | 9.58 | 0.07 | 0.07 FES | No |
| P2 Party wall - Intermediate floor within a dwelling | Table K1 - Default | 8.22 | 0.00 | 0.00 Default | No |
| P4 Party wall - Roof (insulation at ceiling level) | Non Gov Approved Schemes | 9.58 | 0.09 | 0.09 Knauf PSI Details | No |
| E5 Ground floor (normal) | Independently assessed | 9.58 | 0.06 | 0.06 FES - Perp | No |

Y-value 0.05 W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

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

19.1 Mechanical extract ventilation - Decentralised

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

Summary for Input Data



0.08 Through Wall Fan 2
Other Wet Room

20.0 Fans, Open Fireplaces, Flues

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

21.0 Fixed Cooling System

No

22.0 Pressure Testing

Yes

| | | |
|---------------------------|-------------|---|
| Designed AP ₅₀ | 4.00 | 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 |
|-------------------|----------|-------|----------|-------|
| Internal Lighting | 108.00 | 8.00 | 864.00 | 11 |
| External Lighting | 102.50 | 4.00 | 410.00 | 1 |

24.0 Main Heating 1

Database

| | | |
|------------------------|----------------------|---|
| Percentage of Heat | 100.00 | % |
| Database Ref. No. | 107964 | |
| Fuel Type | Electricity | |
| SAP Code | 104 | |
| In Winter | 280.98 | |
| In Summer | 207.24 | |
| Model Name | HP290 Monobloc 4.5kW | |
| Manufacturer | Midea | |
| System Type | Heat Pump | |
| Controls SAP Code | 2207 | |
| PCDF Controls | 0 | |
| Delayed Start Stat | Yes | |
| Burner Control | On/Off | |
| HETAS approved System | No | |
| Is MHS Pumped | Pump in heated space | |
| Heating Pump Age | 2013 or later | |
| Heat Emitter | Radiators | |
| Flow Temperature | Enter value | |
| Flow Temperature Value | 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 | | | | | | | | |

Summary for Input Data



Heat source 5 None

27.0 Secondary Heating

28.0 Water Heating

Water Heating

SAP Code

Flue Gas Heat Recovery System

Waste Water Heat Recovery Instantaneous System 1

Waste Water Heat Recovery Instantaneous System 2

Waste Water Heat Recovery Storage System

Solar Panel

Water use <= 125 litres/person/day

Summer Immersion

Cold Water Source

Bath Count

Baths connected to WWHRS

Supplementary Immersion

Immersion Only Heating Hot Water

28.1 Showers

| Description | Shower Type | Flow Rate [l/min] | Rated Power [kW] | Connected | Connected To |
|-----------------|---|-------------------|------------------|-----------|------------------------|
| Shower en-suite | Combi boiler or unvented hot water system | 9.00 | 9.30 | Yes | Instantaneous System 1 |
| | Combi boiler or unvented hot water system | 9.00 | 9.30 | No | |

28.3 Waste Water Heat Recovery System Instantaneous System 1

Database ID

Brand Model

Details

29.0 Hot Water Cylinder

Cylinder Stat

Cylinder In Heated Space

Independent Time Control

Insulation Type

Insulation Thickness

Cylinder Volume L

Loss kWh/day

Pipes insulation

In Airing Cupboard

31.0 Thermal Store

Thermal Store Pipework

32.0 Photovoltaic Unit

Export Capable Meter?

Connected To Dwelling

Diverter

Battery Capacity [kWh]

| PV Cells kWp | Orientation | Elevation | Overshading | FGHRS | MCS Certificate | Overshading Factor | MCS Certificate Reference | Panel Manufacturer |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 0.90 | East | 30° | None Or Little | No | No | 1.00 | | |

34.0 Small-scale Hydro

Electricity Generated

Summary for Input Data



Apportioned kWh/Year
Connected to dwelling's electricity meter
Electricity Generation

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data



| | | | |
|----------------------|--|----------------|-------------------|
| Property Reference | 009423 - HT - Ripley - MID | Issued on Date | 04/11/2024 |
| Assessment Reference | Ideal HP290 | Prop Type Ref | HT - Ripley - MID |
| Property | Plot , HT - Ripley - MID, Land off Thurnscoe Bridge Lane | | |

| | | | | | |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating | 89 B | DER | 2.56 | TER | 10.64 |
| Environmental | 98 A | % DER < TER | | | 75.94 |
| CO ₂ Emissions (t/year) | 0.19 | DFEE | 28.71 | TFEE | 32.68 |
| Compliance Check | See BREL | % DFEE < TFEE | | | 12.14 |
| % DPER < TPER | 47.24 | DPER | 29.22 | TPER | 55.39 |

| | | | |
|------------------|--------------------|-------------|-----------|
| Assessor Details | Mr. George Leadley | Assessor ID | P719-0001 |
| Client | | | |

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

| | |
|--------------------------------|----------------------------|
| Orientation | North |
| Property Tenure | ND |
| Transaction Type | 6 |
| Terrain Type | Suburban |
| 1.0 Property Type | House, Mid-Terrace |
| Which Floor | 0 |
| 2.0 Number of Storeys | 2 |
| 3.0 Date Built | 2024 |
| 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 | 220.88 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: | 10.48 m | 39.20 m ² | 2.31 m |
| | 1st Storey: | 9.12 m | 37.47 m ² | 2.63 m |

| | |
|-----------------|----------------------|
| 8.0 Living Area | 19.26 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 | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.24 | 60.00 | 48.16 | 32.75 | 0.00 | None | 15.41 | 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 | Filled Cavity with Edge Sealing | Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill | 0.00 | 110.00 | 84.25 | 0.00 | None |

| Description | Construction | Kappa (kJ/m ² K) | Area (m ²) |
|-----------------------|------------------------------|-----------------------------|------------------------|
| Ground Floor - Timber | Plasterboard on timber frame | 9.00 | 58.03 |
| First Floor - Timber | Plasterboard on timber frame | 9.00 | 97.31 |

| 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 | 0.09 | 9.00 | 39.20 | 39.20 | None | 0.00 | Enter Gross Area | 0.00 |

| Description | Storey | Construction | Area (m ²) |
|-------------|--------|--------------|------------------------|
|-------------|--------|--------------|------------------------|

Summary for Input Data



Ground Floor Lowest occupied Plasterboard ceiling, carpeted chipboard floor 37.47

11.0 Heat Loss Floors

| Description | Type | Storey Index | Construction | U-Value (W/m²K) | Shelter Code | Shelter Factor | Kappa (kJ/m²K) | Area (m²) |
|--------------|----------------------|-----------------|------------------------------------|-----------------|--------------|----------------|----------------|-----------|
| Ground Floor | Ground Floor - Solid | Lowest occupied | Suspended concrete floor, carpeted | 0.10 | None | 0.00 | 75.00 | 39.20 |

11.2 Internal Floors

| Description | Storey Index | Construction | Kappa (kJ/m²K) | Area (m²) |
|-------------|--------------|--|----------------|-----------|
| First Floor | | Plasterboard ceiling, carpeted chipboard floor | 9.00 | 37.47 |

12.0 Opening Types

| Description | Data Source | Type | Glazing | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|-------------|---------------------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Solid Doors | Manufacturer | Solid Door | | | | 0.00 | | | 1.30 |
| Windows | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.38 | | 1.00 | 0.86 |
| Patio Doors | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.35 | | 1.00 | 0.89 |

13.0 Openings

| Name | Opening Type | Location | Orientation | Area (m²) | Pitch |
|----------------|--------------|---------------|-------------|-----------|-------|
| Front Door | Solid Doors | External Wall | North | 2.15 | 0 |
| RH Windows | Windows | External Wall | West | 6.12 | 0 |
| LH Windows | Windows | External Wall | East | 3.81 | 0 |
| LH Patio Doors | Patio Doors | External Wall | East | 3.33 | 0 |

14.0 Conservatory

None

15.0 Draught Proofing

100 %

16.0 Draught Lobby

No

17.0 Thermal Bridging

Calculate Bridges

17.1 List of Bridges

| Bridge Type | Source Type | Length | Psi | Adjusted Reference: | Imported |
|--|--------------------------|--------|-------|-------------------------|----------|
| E1 Steel lintel with perforated steel base plate | Non Gov Approved Schemes | 11.00 | 0.27 | 0.27 Knauf PSI Details | No |
| E3 Sill | Non Gov Approved Schemes | 8.40 | 0.02 | 0.02 Knauf PSI Details | No |
| E4 Jamb | Non Gov Approved Schemes | 24.60 | 0.02 | 0.02 Knauf PSI Details | No |
| E5 Ground floor (normal) | Independently assessed | 9.12 | 0.04 | 0.04 FES - Para | No |
| E6 Intermediate floor within a dwelling | Non Gov Approved Schemes | 7.85 | 0.00 | 0.00 Knauf PSI Details | No |
| E10 Eaves (insulation at ceiling level) | Non Gov Approved Schemes | 10.39 | 0.04 | 0.04 Knauf PSI Details | No |
| E24 Eaves (insulation at ceiling level - inverted) | Table K1 - Default | 1.27 | 0.15 | 0.15 | No |
| E12 Gable (insulation at ceiling level) | Non Gov Approved Schemes | 1.36 | 0.04 | 0.04 Knauf PSI Details | No |
| E16 Corner (normal) | Non Gov Approved Schemes | 2.31 | 0.04 | 0.04 Knauf PSI Details | No |
| E17 Corner (inverted – internal area greater than external area) | Non Gov Approved Schemes | 2.31 | -0.09 | -0.09 Knauf PSI Details | No |
| E18 Party wall between dwellings | Non Gov Approved Schemes | 19.74 | 0.04 | 0.04 Knauf PSI Details | No |
| P1 Party wall - Ground floor | Independently assessed | 17.80 | 0.07 | 0.07 FES | No |
| P2 Party wall - Intermediate floor within a dwelling | Table K1 - Default | 16.43 | 0.00 | 0.00 Default | No |
| P4 Party wall - Roof (insulation at ceiling level) | Non Gov Approved Schemes | 17.80 | 0.09 | 0.09 Knauf PSI Details | No |
| E5 Ground floor (normal) | Independently assessed | 1.36 | 0.06 | 0.06 FES - Perp | No |

Y-value 0.06 W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

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

19.1 Mechanical extract ventilation - Decentralised

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

Summary for Input Data



0.08 Through Wall Fan 1
Other Wet Room

20.0 Fans, Open Fireplaces, Flues

| | |
|--|---|
| Number of open chimneys | 0 |
| Number of open flues | 0 |
| Number of chimneys/flues attached to closed fire | 0 |
| Number of flues attached to solid fuel boiler | 0 |
| 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 | 4.00 | 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 |
|-------------------|----------|-------|----------|-------|
| Internal Lighting | 108.00 | 8.00 | 864.00 | 11 |
| External Lighting | 102.50 | 4.00 | 410.00 | 1 |

24.0 Main Heating 1

| | |
|------------------------|----------------------|
| Database | Database |
| Percentage of Heat | 100.00 % |
| Database Ref. No. | 107964 |
| Fuel Type | Electricity |
| SAP Code | 104 |
| In Winter | 280.58 |
| In Summer | 207.56 |
| Model Name | HP290 Monobloc 4.5kW |
| Manufacturer | Midea |
| System Type | Heat Pump |
| Controls SAP Code | 2207 |
| PCDF Controls | 0 |
| Delayed Start Stat | Yes |
| Burner Control | On/Off |
| HETAS approved System | No |
| Is MHS Pumped | Pump in heated space |
| Heating Pump Age | 2013 or later |
| Heat Emitter | Radiators |
| Flow Temperature | Enter value |
| Flow Temperature Value | 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 | | | | | | | | |

Summary for Input Data



Heat source 5 None

27.0 Secondary Heating

28.0 Water Heating

Water Heating

SAP Code

Flue Gas Heat Recovery System

Waste Water Heat Recovery Instantaneous System 1

Waste Water Heat Recovery Instantaneous System 2

Waste Water Heat Recovery Storage System

Solar Panel

Water use <= 125 litres/person/day

Summer Immersion

Cold Water Source

Bath Count

Baths connected to WWHRS

Supplementary Immersion

Immersion Only Heating Hot Water

28.1 Showers

| Description | Shower Type | Flow Rate [l/min] | Rated Power [kW] | Connected | Connected To |
|-----------------|---|-------------------|------------------|-----------|------------------------|
| Shower en-suite | Combi boiler or unvented hot water system | 9.00 | 9.30 | Yes | Instantaneous System 1 |
| | Combi boiler or unvented hot water system | 9.00 | 9.30 | No | |

28.3 Waste Water Heat Recovery System Instantaneous System 1

Database ID

Brand Model

Details

29.0 Hot Water Cylinder

Cylinder Stat

Cylinder In Heated Space

Independent Time Control

Insulation Type

Insulation Thickness

Cylinder Volume L

Loss kWh/day

Pipes insulation

In Airing Cupboard

31.0 Thermal Store

Thermal Store Pipework

32.0 Photovoltaic Unit

Export Capable Meter?

Connected To Dwelling

Diverter

Battery Capacity [kWh]

| PV Cells kWp | Orientation | Elevation | Overshading | FGHRS | MCS Certificate | Overshading Factor | MCS Certificate Reference | Panel Manufacturer |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 0.90 | East | 30° | None Or Little | No | No | 1.00 | | |

34.0 Small-scale Hydro

Electricity Generated

Summary for Input Data



Apportioned kWh/Year
Connected to dwelling's electricity meter
Electricity Generation

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data



| | | | | | |
|------------------------------------|--|---------------|-----------------------|----------------|------------|
| Property Reference | 009423 - HT - Salisbury - SEMI | | | Issued on Date | 04/11/2024 |
| Assessment Reference | ideal HP290 | Prop Type Ref | HT - Salisbury - SEMI | | |
| Property | Plot , HT - Salisbury - SEMI, Land off Thurnscoe Bridge Lane | | | | |
| SAP Rating | 87 B | DER | 2.78 | TER | 11.40 |
| Environmental | 97 A | % DER < TER | | | 75.61 |
| CO ₂ Emissions (t/year) | 0.27 | DFEE | 36.27 | TFEE | 38.35 |
| Compliance Check | See BREL | % DFEE < TFEE | | | 5.42 |
| % DPER < TPER | 48.03 | DPER | 30.99 | TPER | 59.63 |
| Assessor Details | Mr. George Leadley | | | Assessor ID | P719-0001 |
| Client | | | | | |

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

| | |
|--------------------------------|----------------------------|
| Orientation | North |
| Property Tenture | ND |
| Transaction Type | 6 |
| Terrain Type | Suburban |
| 1.0 Property Type | House, Semi-Detached |
| Which Floor | 0 |
| 2.0 Number of Storeys | 3 |
| 3.0 Date Built | 2024 |
| 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 | 174.53 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: | 18.70 m | 39.20 m ² | 2.31 m |
| 1st Storey: | 17.34 m | 37.47 m ² | 2.63 m |
| 2nd Storey: | 17.34 m | 24.86 m ² | 2.49 m |

| | |
|-----------------|----------------------|
| 8.0 Living Area | 19.26 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 | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.24 | 60.00 | 99.49 | 82.64 | 0.00 | None | 16.85 | Enter Gross Area | |
| Gable Panel Wall | Timber Frame | Timber framed wall (one layer of plasterboard) | 0.23 | 9.00 | 14.16 | 14.16 | 0.00 | None | 0.00 | Enter Gross Area | |
| Sheltered Stud Wall | Timber Frame | Timber framed wall (one layer of plasterboard) | 0.11 | 9.00 | 18.84 | 18.84 | 0.00 | None | 0.00 | Enter Gross Area | |

| 9.1 Party Walls | Description | Type | Construction | U-Value (W/m ² K) | Kappa (kJ/m ² K) | Area (m ²) | Shelter Res | Shelter |
|-----------------|---------------------------------|---|--------------|------------------------------|-----------------------------|------------------------|-------------|---------|
| Party Wall | Filled Cavity with Edge Sealing | Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill | 0.00 | 110.00 | 48.81 | 0.00 | None | |
| Party Wall | Filled Cavity with Edge Sealing | Double plasterboard on both sides, twin timber f rame with/without sheathing board | 0.00 | 20.00 | 14.16 | 0.00 | None | |

| 9.2 Internal Walls | Description | Construction | Kappa (kJ/m ² K) | Area (m ²) |
|-----------------------|------------------------------|--------------|-----------------------------|------------------------|
| Ground Floor - Timber | Plasterboard on timber frame | 9.00 | 58.03 | |
| First Floor - Timber | Plasterboard on timber frame | 9.00 | 101.36 | |
| Second Floor - Timber | Plasterboard on timber frame | 9.00 | 43.72 | |

| 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 |
|---------------------|-------------|------|--------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------|----------------|------------------|----------|
|---------------------|-------------|------|--------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|--------------|----------------|------------------|----------|

Summary for Input Data



| | | | | | | | | | | |
|-----------------------|---------------------|--|------|------|-------|-------|------|------|------------------|------|
| Sloping Cassette Roof | External Slope Roof | Plasterboard, insulated slope | 0.15 | 9.00 | 13.02 | 10.95 | None | 0.00 | Enter Gross Area | 2.07 |
| Sheltered Stud Roof | External Slope Roof | Plasterboard, insulated slope | 0.11 | 9.00 | 27.50 | 27.50 | None | 0.00 | Enter Gross Area | 0.00 |
| Cold Roof | External Plane Roof | Plasterboard, insulated at ceiling level | 0.09 | 9.00 | 1.74 | 1.74 | None | 0.00 | Enter Gross Area | 0.00 |

10.2 Internal Ceilings

| Description | Storey | Construction | Area (m ²) |
|--------------|-----------------|--|------------------------|
| Ground Floor | Lowest occupied | Plasterboard ceiling, carpeted chipboard floor | 37.47 |
| First Floor | +1 | Plasterboard ceiling, carpeted chipboard floor | 24.86 |

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) |
|--------------|----------------------|-----------------|------------------------------------|------------------------------|--------------|----------------|-----------------------------|------------------------|
| Ground Floor | Ground Floor - Solid | Lowest occupied | Suspended concrete floor, carpeted | 0.10 | None | 0.00 | 75.00 | 39.20 |

11.2 Internal Floors

| Description | Storey Index | Construction | Kappa (kJ/m ² K) | Area (m ²) |
|--------------|--------------|--|-----------------------------|------------------------|
| First Floor | | Plasterboard ceiling, carpeted chipboard floor | 9.00 | 37.47 |
| Second Floor | | Plasterboard ceiling, carpeted chipboard floor | 9.00 | 24.86 |

12.0 Opening Types

| Description | Data Source | Type | Glazing | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m ² K) |
|-------------|---------------------------|-------------|------------------------|-------------|--------------|---------|------------|--------------|------------------------------|
| Solid Doors | Manufacturer | Solid Door | | | | 0.00 | | | 1.30 |
| Windows | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.38 | | 1.00 | 0.86 |
| Patio Doors | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.35 | | 1.00 | 0.89 |
| Rooflights | Manufacturer | Roof Window | Double Low-E Soft 0.05 | | | 0.63 | | 0.70 | 1.30 |

13.0 Openings

| Name | Opening Type | Location | Orientation | Area (m ²) | Pitch |
|----------------|--------------|-----------------------|-------------|------------------------|-------|
| Front Door | Solid Doors | External Wall | North | 2.15 | 0 |
| Front Windows | Windows | External Wall | North | 1.44 | 0 |
| RH Windows | Windows | External Wall | West | 6.12 | 0 |
| LH Windows | Windows | External Wall | East | 3.81 | 0 |
| LH Patio Doors | Patio Doors | External Wall | East | 3.33 | 0 |
| RH RL | Rooflights | Sloping Cassette Roof | West | 0.54 | 40 |
| LH RL | Rooflights | Sloping Cassette Roof | East | 1.53 | 40 |

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 |
|--|--------------------------|--------|-------|------------------------|----------|
| E1 Steel lintel with perforated steel base plate | Non Gov Approved Schemes | 12.37 | 0.27 | 0.27 Knauf PSI Details | No |
| E3 Sill | Non Gov Approved Schemes | 9.77 | 0.02 | 0.02 Knauf PSI Details | No |
| E4 Jamb | Non Gov Approved Schemes | 28.80 | 0.02 | 0.02 Knauf PSI Details | No |
| E5 Ground floor (normal) | Independently assessed | 9.12 | 0.04 | 0.04 FES - Para | No |
| E6 Intermediate floor within a dwelling | Non Gov Approved Schemes | 33.40 | 0.00 | 0.00 Knauf PSI Details | No |
| E10 Eaves (insulation at ceiling level) | Non Gov Approved Schemes | 1.27 | 0.04 | 0.04 Knauf PSI Details | No |
| E24 Eaves (insulation at ceiling level - inverted) | Table K1 - Default | 1.27 | 0.15 | 0.15 | No |
| E11 Eaves (insulation at rafter level) | Independently assessed | 9.12 | 0.05 | 0.05 NYT PSI Details | No |
| E12 Gable (insulation at ceiling level) | Non Gov Approved Schemes | 1.36 | 0.04 | 0.04 Knauf PSI Details | No |
| E13 Gable (insulation at rafter level) | Independently assessed | 10.73 | 0.06 | 0.06 NYT PSI Details | No |
| E16 Corner (normal) | Non Gov Approved Schemes | 13.42 | 0.04 | 0.04 Knauf PSI Details | No |
| E17 Corner (inverted - internal area greater than external area) | Non Gov Approved Schemes | 2.31 | -0.09 | -0.09 Knauf | No |
| E18 Party wall between dwellings | Non Gov Approved Schemes | 11.11 | 0.04 | 0.04 Knauf PSI Details | No |
| P1 Party wall - Ground floor | Independently assessed | 9.58 | 0.07 | 0.07 FES | No |
| P2 Party wall - Intermediate floor within a dwelling | Table K1 - Default | 16.43 | 0.00 | 0.00 Default | No |
| P4 Party wall - Roof (insulation at ceiling level) | Non Gov Approved Schemes | 1.36 | 0.09 | 0.09 Knauf PSI Details | No |
| P5 Party wall - Roof (insulation at rafter level) | Independently assessed | 10.73 | 0.07 | 0.07 NYT PSI Details | No |
| R1 Head of roof window | Independently assessed | 2.11 | 0.09 | 0.09 Velux | No |
| R2 Sill of roof window | Independently assessed | 2.11 | 0.09 | 0.09 Velux | No |
| R3 Jamb of roof window | Independently assessed | 5.88 | 0.09 | 0.09 Velux | No |
| R4 Ridge (vaulted ceiling) | Independently assessed | 4.56 | 0.05 | 0.05 NYT PSI Details | No |
| E5 Ground floor (normal) | Independently assessed | 9.58 | 0.06 | 0.06 FES - Perp | No |

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present

Approved Installation

Mechanical Ventilation data Type

Summary for Input Data



| | |
|--|--|
| Type | Mechanical extract ventilation - decentralised |
| MV Reference Number | 500776 |
| Duct Type | Flexible |
| Wet Rooms | 5 |
| SFP from Installer Commissioning Certificate | No |

19.1 Mechanical extract ventilation - Decentralised

| SFP | Fan/Room Type | Count |
|------|---------------------|-------|
| 0.14 | In Room Fan | 0 |
| | Kitchen | |
| 0.11 | In Room Fan Other | 0 |
| | Wet Room | |
| 0.00 | In Duct Fan Kitchen | 0 |
| 0.00 | In Duct Fan Other | 0 |
| | Wet Room | |
| 0.08 | Through Wall Fan | 1 |
| | Kitchen | |
| 0.08 | Through Wall Fan | 4 |
| | Other Wet Room | |

20.0 Fans, Open Fireplaces, Flues

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

21.0 Fixed Cooling System

No

22.0 Pressure Testing

Yes

Designed AP₅₀ 4.00 m³/(h.m²) @ 50 Pa

Property Tested? Yes

Test Method Blower Door

22.0 Lighting

No Fixed Lighting No

| Name | Efficacy | Power | Capacity | Count |
|-------------------|----------|-------|----------|-------|
| Internal Lighting | 108.00 | 8.00 | 864.00 | 15 |
| External Lighting | 102.50 | 4.00 | 410.00 | 1 |

24.0 Main Heating 1

Database

Percentage of Heat 100.00 %

Database Ref. No. 107972

Fuel Type Electricity

SAP Code 104

In Winter 297.54

In Summer 202.49

Model Name HP290 Monobloc 6kW

Manufacturer Midea

System Type Heat Pump

Controls SAP Code 2207

PCDF Controls 0

Delayed Start Stat Yes

Burner Control On/Off

HETAS approved System No

Summary for Input Data



| | |
|------------------------|----------------------|
| 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 |

25.0 Main Heating 2

26.0 Heat Networks

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

27.0 Secondary Heating

28.0 Water Heating

| | |
|--|----------------|
| Water Heating | Main Heating 1 |
| SAP Code | 901 |
| Flue Gas Heat Recovery System | No |
| Waste Water Heat Recovery Instantaneous System 1 | Yes |
| Waste Water Heat Recovery Instantaneous System 2 | No |
| Waste Water Heat Recovery Storage System | No |
| Solar Panel | No |
| Water use <= 125 litres/person/day | Yes |
| Summer Immersion | No |
| Cold Water Source | From mains |
| Bath Count | 1 |
| Baths connected to WWHRS | 0 |
| Supplementary Immersion | No |
| Immersion Only Heating Hot Water | No |

28.1 Showers

| Description | Shower Type | Flow Rate [l/min] | Rated Power [kW] | Connected | Connected To |
|-------------|---|-------------------|------------------|-----------|------------------------|
| Shower | Combi boiler or unvented hot water system | 9.00 | | Yes | Instantaneous System 1 |
| Ensuite | Combi boiler or unvented hot water system | 9.00 | 9.30 | No | |
| En-Suite 2 | Combi boiler or unvented hot water system | 9.00 | 9.30 | No | |

28.3 Waste Water Heat Recovery System Instantaneous System 1

| | |
|-------------|---|
| Database ID | 80148 |
| Brand Model | Recoup, Pipe HEX |
| Details | Year: 2019 + current Efficiency: 55.4 Utilisation factor: 0.957 |

29.0 Hot Water Cylinder

| | |
|--------------------------|----------------------------------|
| Hot Water Cylinder | Hot Water Cylinder |
| Cylinder Stat | Yes |
| Cylinder In Heated Space | Yes |
| Independent Time Control | Yes |
| Insulation Type | Measured Loss |
| Insulation Thickness | 0 |
| Cylinder Volume | 225.00 |
| Loss | 1.99 |
| Pipes insulation | Fully insulated primary pipework |
| In Airing Cupboard | No |

L
kWh/day

Summary for Input Data



31.0 Thermal Store

Thermal Store Pipework

32.0 Photovoltaic Unit

Export Capable Meter?
 Connected To Dwelling
 Diverter
 Battery Capacity [kWh]

| PV Cells kWp | Orientation | Elevation | Overshading | FGHRS | MCS Certificate | Overshading Factor | MCS Certificate Reference | Panel Manufacturer |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 1.10 | East | 45° | None Or Little | No | No | 1.00 | | |

34.0 Small-scale Hydro

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

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

Recommendations

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

Summary for Input Data



| | | | | |
|----------------------|---|---------------|--------------------|------------|
| Property Reference | 009423 - HT - Totley - SEMI | | Issued on Date | 04/11/2024 |
| Assessment Reference | Ideal HP290 | Prop Type Ref | HT - Totley - SEMI | |
| Property | Plot , HT - Totley - SEMI, Land off Thurnscoe Bridge Lane | | | |

| | | | | | |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating | 92 A | DER | 2.07 | TER | 11.02 |
| Environmental | 98 A | % DER < TER | | | 81.22 |
| CO ₂ Emissions (t/year) | 0.14 | DFEE | 31.00 | TFEE | 32.26 |
| Compliance Check | See BREL | % DFEE < TFEE | | | 3.89 |
| % DPER < TPER | 59.71 | DPER | 23.21 | TPER | 57.60 |

| | | | |
|------------------|--------------------|-------------|-----------|
| Assessor Details | Mr. George Leadley | Assessor ID | P719-0001 |
| Client | | | |

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

| | | |
|--------------------------------|---------------------------|---------------------|
| Orientation | North | |
| Property Tenure | ND | |
| Transaction Type | 6 | |
| Terrain Type | Suburban | |
| 1.0 Property Type | Maisonette, Semi-Detached | |
| Position of Flat | Top-floor flat | |
| Which Floor | 1 | |
| 2.0 Number of Storeys | 2 | |
| 3.0 Date Built | 2024 | |
| 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 | 203.42 | 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: | 4.46 m | 4.69 m ² | 2.70 m |
| | 1st Storey: | 23.49 m | 67.69 m ² | 2.31 m |

| | | |
|-----------------|-------|----------------|
| 8.0 Living Area | 28.77 | 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 | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.24 | 60.00 | 66.32 | 55.91 | 0.00 | None | 10.41 | 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 | Filled Cavity with Edge Sealing | Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill | 0.00 | 110.00 | 43.25 | 0.00 | None |

| Description | Construction | Kappa (kJ/m ² K) | Area (m ²) |
|-----------------------|------------------------------|-----------------------------|------------------------|
| Ground Floor - Timber | Plasterboard on timber frame | 9.00 | 4.91 |
| First Floor - Timber | Plasterboard on timber frame | 9.00 | 101.69 |

| 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 | 0.09 | 9.00 | 67.69 | 67.69 | None | 0.00 | Enter Gross Area | 0.00 |

10.2 Internal Ceilings

Summary for Input Data



| Description | Storey | Construction | | | | Area (m ²) | | | | |
|---|---------------------------|--|------------------------------------|------------------------------|-------------------|-----------------------------|---|------------------------|------------------------------|--|
| Ground Floor | Lowest occupied | Other | | | | 4.69 | | | | |
| 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) | | |
| Ground Floor | Ground Floor - Solid | Lowest occupied | Suspended concrete floor, carpeted | 0.11 | None | 0.00 | 75.00 | 4.69 | | |
| 11.1 Party Floors | | | | | | | | | | |
| Description | Storey Index | Construction | | | | Kappa (kJ/m ² K) | Area (m ²) | | | |
| Party Floor | +1 | Precast concrete plank floor (screed laid on rubber), carpeted | | | | 30.00 | 63.00 | | | |
| 11.2 Internal Floors | | | | | | | | | | |
| Description | Storey Index | Construction | | | | Kappa (kJ/m ² K) | Area (m ²) | | | |
| First Floor | | Other | | | | 30.00 | 4.69 | | | |
| 12.0 Opening Types | | | | | | | | | | |
| Description | Data Source | Type | Glazing | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m ² K) | |
| Solid Doors | Manufacturer | Solid Door | | | | 0.00 | | | 1.30 | |
| Windows | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.38 | | 1.00 | 0.86 | |
| Patio Doors | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.35 | | 1.00 | 0.89 | |
| 13.0 Openings | | | | | | | | | | |
| Name | Opening Type | Location | Orientation | Area (m ²) | Pitch | | | | | |
| Front Door | Solid Doors | External Wall | North | 2.15 | 0 | | | | | |
| Front Windows | Windows | External Wall | North | 2.18 | 0 | | | | | |
| LH Windows | Windows | External Wall | East | 3.53 | 0 | | | | | |
| RH Windows | Windows | External Wall | West | 2.55 | 0 | | | | | |
| 14.0 Conservatory | | | | | | | <input type="text" value="None"/> | | | |
| 15.0 Draught Proofing | | | | | | | <input type="text" value="100"/> % | | | |
| 16.0 Draught Lobby | | | | | | | <input type="text" value="No"/> | | | |
| 17.0 Thermal Bridging | | | | | | | <input type="text" value="Calculate Bridges"/> | | | |
| 17.1 List of Bridges | | | | | | | | | | |
| Bridge Type | Source Type | Length | Psi | Adjusted Reference: | | Imported | | | | |
| E1 Steel lintel with perforated steel base plate | Non Gov Approved Schemes | 8.06 | 0.27 | 0.27 | Knauf PSI Details | No | | | | |
| E3 Sill | Non Gov Approved Schemes | 7.03 | 0.02 | 0.02 | Knauf PSI Details | No | | | | |
| E4 Jamb | Non Gov Approved Schemes | 18.30 | 0.02 | 0.02 | Knauf PSI Details | No | | | | |
| E6 Intermediate floor within a dwelling | Table K1 - Default | 4.46 | 0.14 | 0.14 | Knauf PSI Details | No | | | | |
| E10 Eaves (insulation at ceiling level) | Non Gov Approved Schemes | 13.37 | 0.04 | 0.04 | Knauf PSI Details | No | | | | |
| E12 Gable (insulation at ceiling level) | Non Gov Approved Schemes | 10.13 | 0.04 | 0.04 | Knauf PSI Details | No | | | | |
| E16 Corner (normal) | Non Gov Approved Schemes | 4.62 | 0.04 | 0.04 | Knauf PSI Details | No | | | | |
| E18 Party wall between dwellings | Non Gov Approved Schemes | 10.02 | 0.04 | 0.04 | Knauf PSI Details | No | | | | |
| P1 Party wall - Ground floor | Independently assessed | 7.35 | 0.07 | 0.07 | FES | No | | | | |
| P4 Party wall - Roof (insulation at ceiling level) | Non Gov Approved Schemes | 10.13 | 0.09 | 0.09 | Knauf PSI Details | No | | | | |
| E5 Ground floor (normal) | Independently assessed | 4.46 | 0.06 | 0.06 | FES - Perp | No | | | | |
| E7 Party floor between dwellings (in blocks of flats) | Independently assessed | 19.03 | 0.06 | 0.06 | Meadows + Ross | No | | | | |
| P3 Party wall - Intermediate floor between dwellings (in blocks of flats) | Table K1 - Default | 17.48 | 0.00 | 0.00 | | No | | | | |
| Y-value | | | | | | | <input type="text" value="0.05"/> W/m ² K | | | |
| 19.0 Mechanical Ventilation | | | | | | | | | | |
| Mechanical Ventilation | | | | | | | | | | |
| Mechanical Ventilation System Present | | | | | | | <input type="text" value="Yes"/> | | | |
| Approved Installation | | | | | | | <input type="text" value="Yes"/> | | | |
| Mechanical Ventilation data Type | | | | | | | <input type="text" value="Database"/> | | | |
| Type | | | | | | | <input type="text" value="Mechanical extract ventilation - decentralised"/> | | | |
| MV Reference Number | | | | | | | <input type="text" value="500776"/> | | | |
| Duct Type | | | | | | | <input type="text" value="Flexible"/> | | | |
| Wet Rooms | | | | | | | <input type="text" value="2"/> | | | |
| SFP from Installer Commissioning Certificate | | | | | | | <input type="text" value="No"/> | | | |
| 19.1 Mechanical extract ventilation - Decentralised | | | | | | | | | | |
| SFP | Fan/Room Type | Count | | | | | | | | |
| 0.14 | In Room Fan | 0 | | | | | | | | |
| | Kitchen | | | | | | | | | |
| 0.11 | In Room Fan Other | 1 | | | | | | | | |
| | Wet Room | | | | | | | | | |
| 0.00 | In Duct Fan Kitchen | 0 | | | | | | | | |

Summary for Input Data



| | | |
|------|-------------------|---|
| 0.00 | In Duct Fan Other | 0 |
| | Wet Room | |
| 0.08 | Through Wall Fan | 1 |
| | Kitchen | |
| 0.08 | Through Wall Fan | 0 |
| | Other Wet Room | |

20.0 Fans, Open Fireplaces, Flues

| | |
|--|--------------------------------|
| Number of open chimneys | <input type="text" value="0"/> |
| Number of open flues | <input type="text" value="0"/> |
| Number of chimneys/flues attached to closed fire | <input type="text" value="0"/> |
| Number of flues attached to solid fuel boiler | <input type="text" value="0"/> |
| Number of flues attached to other heater | <input type="text" value="0"/> |
| Number of blocked chimneys | <input type="text" value="0"/> |
| Number of intermittent extract fans | <input type="text" value="0"/> |
| Number of passive vents | <input type="text" value="0"/> |
| Number of flueless gas fires | <input type="text" value="0"/> |

21.0 Fixed Cooling System

22.0 Pressure Testing

| | | |
|---------------------------|--|---|
| Designed AP ₅₀ | <input type="text" value="4.00"/> | m ³ /(h.m ²) @ 50 Pa |
| Property Tested? | <input type="text" value="Yes"/> | |
| Test Method | <input type="text" value="Blower Door"/> | |

22.0 Lighting

No Fixed Lighting

| Name | Efficacy | Power | Capacity | Count |
|-------------------|----------|-------|----------|-------|
| Internal Lighting | 108.00 | 8.00 | 864.00 | 7 |
| External Lighting | 102.50 | 4.00 | 410.00 | 1 |

24.0 Main Heating 1

| | |
|------------------------|---|
| Database | <input type="text" value="Database"/> |
| Percentage of Heat | <input type="text" value="100.00"/> % |
| Database Ref. No. | <input type="text" value="107964"/> |
| Fuel Type | <input type="text" value="Electricity"/> |
| SAP Code | <input type="text" value="104"/> |
| In Winter | <input type="text" value="280.01"/> |
| In Summer | <input type="text" value="328.41"/> |
| Model Name | <input type="text" value="HP290 Monobloc 4.5kW"/> |
| Manufacturer | <input type="text" value="Midea"/> |
| System Type | <input type="text" value="Heat Pump"/> |
| Controls SAP Code | <input type="text" value="2207"/> |
| Delayed Start Stat | <input type="text" value="Yes"/> |
| Burner Control | <input type="text" value="Modulating"/> |
| HETAS approved System | <input type="text" value="No"/> |
| Is MHS Pumped | <input type="text" value="Pump in heated space"/> |
| Heating Pump Age | <input type="text" value="2013 or later"/> |
| Heat Emitter | <input type="text" value="Radiators"/> |
| Flow Temperature | <input type="text" value="Enter value"/> |
| Flow Temperature Value | <input type="text" 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 | | | | | | | | |

Summary for Input Data



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

27.0 Secondary Heating

28.0 Water Heating

Water Heating
 SAP Code
 Flue Gas Heat Recovery System
 Waste Water Heat Recovery Instantaneous System 1
 Waste Water Heat Recovery Instantaneous System 2
 Waste Water Heat Recovery Storage System
 Solar Panel
 Water use <= 125 litres/person/day
 Summer Immersion
 Cold Water Source
 Bath Count
 Baths connected to WWHRS
 Supplementary Immersion
 Immersion Only Heating Hot Water

28.1 Showers

| Description | Shower Type | Flow Rate [l/min] | Rated Power [kW] | Connected | Connected To |
|-------------|---|-------------------|------------------|-----------|------------------------|
| Shower | Combi boiler or unvented hot water system | 9.00 | | Yes | Instantaneous System 1 |

28.3 Waste Water Heat Recovery System Instantaneous System 1

Database ID
 Brand Model
 Details

29.0 Hot Water Cylinder

Hot Water Cylinder
 Cylinder Stat
 Cylinder In Heated Space
 Independent Time Control
 Insulation Type
 Insulation Thickness
 Cylinder Volume L
 Loss kWh/day
 Pipes insulation
 In Airing Cupboard

31.0 Thermal Store

Thermal Store
 Thermal Store Pipework

32.0 Photovoltaic Unit

One Dwelling
 Export Capable Meter?
 Connected To Dwelling
 Diverter
 Battery Capacity [kWh]

| PV Cells kWp | Orientation | Elevation | Overshading | FGHRS | MCS Certificate | Overshading Factor | MCS Certificate Reference | Panel Manufacturer |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 0.67 | East | 30° | None Or Little | No | No | 1.00 | | |

34.0 Small-scale Hydro

None
 Electricity Generated

Summary for Input Data



Apportioned kWh/Year
Connected to dwelling's electricity meter
Electricity Generation

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data



| | | | |
|----------------------|--|----------------|-----------------|
| Property Reference | 009423 - HT - WAB - SEMI | Issued on Date | 04/11/2024 |
| Assessment Reference | Ideal HP290 | Prop Type Ref | HT - WAB - SEMI |
| Property | Plot , HT - WAB - SEMI, Land off Thurnscoe Bridge Lane | | |

| | | | | | |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating | 92 A | DER | 2.20 | TER | 9.81 |
| Environmental | 98 A | % DER < TER | | | 77.57 |
| CO ₂ Emissions (t/year) | 0.13 | DFEE | 33.05 | TFEE | 38.36 |
| Compliance Check | See BREL | % DFEE < TFEE | | | 13.84 |
| % DPER < TPER | 52.34 | DPER | 24.97 | TPER | 52.39 |

| | | | |
|------------------|--------------------|-------------|-----------|
| Assessor Details | Mr. George Leadley | Assessor ID | P719-0001 |
| Client | | | |

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

| | | |
|----------------------------|-------------------------|---------------------|
| Orientation | East | |
| Property Tenture | ND | |
| Transaction Type | 6 | |
| Terrain Type | Suburban | |
| 1.0 Property Type | Bungalow, Semi-Detached | |
| Which Floor | 0 | |
| 2.0 Number of Storeys | 1 | |
| 3.0 Date Built | 2024 | |
| 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 | 211.21 | 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: | 22.62 m | 61.05 m ² | 2.31 m |

| | | |
|-----------------|-------|----------------|
| 8.0 Living Area | 13.91 | 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 | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.24 | 60.00 | 52.26 | 39.95 | 0.00 | None | 12.31 | 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 | Filled Cavity with Edge Sealing | Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill | 0.00 | 110.00 | 20.54 | 0.00 | None |

| Description | Construction | Kappa (kJ/m ² K) | Area (m ²) |
|-----------------------|-----------------------------------|-----------------------------|------------------------|
| Ground Floor - Timber | Plasterboard on timber frame | 9.00 | 86.26 |
| Ground Floor - Block | Dense block, plasterboard on dabs | 75.00 | 31.69 |

| 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 | 0.09 | 9.00 | 61.05 | 61.05 | None | 0.00 | Enter Gross Area | 0.00 |

| Description | Type | Storey Index | Construction | U-Value (W/m ² K) | Shelter Code | Shelter Factor | Kappa (kJ/m ² K) | Area (m ²) |
|--------------|----------------------|-----------------|------------------------------------|------------------------------|--------------|----------------|-----------------------------|------------------------|
| Ground Floor | Ground Floor - Solid | Lowest occupied | Suspended concrete floor, carpeted | 0.10 | None | 0.00 | 75.00 | 60.47 |

Summary for Input Data



12.0 Opening Types

| Description | Data Source | Type | Glazing | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|-------------|---------------------------|-------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Solid Doors | Manufacturer | Solid Door | | | | 0.00 | | | 1.30 |
| Windows | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.38 | | 1.00 | 0.86 |
| Patio Doors | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.35 | | 1.00 | 0.89 |
| Rooflights | Manufacturer | Roof Window | Double Low-E Soft 0.05 | | | 0.63 | | 0.70 | 1.30 |

13.0 Openings

| Name | Opening Type | Location | Orientation | Area (m²) | Pitch |
|------------------|--------------|---------------|-------------|-----------|-------|
| Front Door | Solid Doors | External Wall | East | 2.15 | 0 |
| Front Windows | Windows | External Wall | East | 3.33 | 0 |
| LH Windows | Windows | External Wall | South | 1.36 | 0 |
| Rear Windows | Windows | External Wall | West | 2.14 | 0 |
| Rear Patio Doors | Patio Doors | External Wall | West | 3.33 | 0 |

14.0 Conservatory

15.0 Draught Proofing

 %

16.0 Draught Lobby

17.0 Thermal Bridging

17.1 List of Bridges

| Bridge Type | Source Type | Length | Psi | Adjusted Reference: | Imported |
|--|--------------------------|--------|------|---------------------|----------|
| E1 Steel lintel with perforated steel base plate | Non Gov Approved Schemes | 8.05 | 0.27 | 0.27 Knauf | No |
| E3 Sill | Non Gov Approved Schemes | 5.44 | 0.02 | 0.02 Knauf | No |
| E4 Jamb | Non Gov Approved Schemes | 18.30 | 0.02 | 0.02 Knauf | No |
| E5 Ground floor (normal) | Independently assessed | 8.89 | 0.04 | 0.04 FES - Para | No |
| E10 Eaves (insulation at ceiling level) | Non Gov Approved Schemes | 11.45 | 0.04 | 0.04 Knauf | No |
| E16 Corner (normal) | Non Gov Approved Schemes | 4.62 | 0.04 | 0.04 Knauf | No |
| E18 Party wall between dwellings | Non Gov Approved Schemes | 4.62 | 0.04 | 0.04 Knauf | No |
| P1 Party wall - Ground floor | Independently assessed | 8.89 | 0.07 | 0.07 FES | No |
| P4 Party wall - Roof (insulation at ceiling level) | Non Gov Approved Schemes | 8.89 | 0.09 | 0.09 Knauf | No |
| E5 Ground floor (normal) | Independently assessed | 13.73 | 0.06 | 0.06 FES - Perp | No |
| E12 Gable (insulation at ceiling level) | Independently assessed | 11.18 | 0.04 | 0.04 Knauf | No |

Y-value

 W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

| | |
|--|---|
| Mechanical Ventilation System Present | <input type="text" value="Yes"/> |
| Approved Installation | <input type="text" value="Yes"/> |
| Mechanical Ventilation data Type | <input type="text" value="Database"/> |
| Type | <input type="text" value="Mechanical extract ventilation - decentralised"/> |
| MV Reference Number | <input type="text" value="500776"/> |
| Duct Type | <input type="text" value="Flexible"/> |
| Wet Rooms | <input type="text" value="2"/> |
| SFP from Installer Commissioning Certificate | <input type="text" value="No"/> |

19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

| | |
|--|--------------------------------|
| Number of open chimneys | <input type="text" value="0"/> |
| Number of open flues | <input type="text" value="0"/> |
| Number of chimneys/flues attached to closed fire | <input type="text" value="0"/> |
| Number of flues attached to solid fuel boiler | <input type="text" value="0"/> |
| Number of flues attached to other heater | <input type="text" value="0"/> |
| Number of blocked chimneys | <input type="text" value="0"/> |

Summary for Input Data



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 |
|-------------------|----------|-------|----------|-------|
| Internal Lighting | 108.00 | 8.00 | 864.00 | 8 |
| External Lighting | 102.50 | 4.00 | 410.00 | 1 |

24.0 Main Heating 1

Percentage of Heat %

Database Ref. No.

Fuel Type

SAP Code

In Winter

In Summer

Model Name

Manufacturer

System Type

Controls SAP Code

PCDF Controls

Delayed Start Stat

Burner Control

HETAS approved System

Is MHS Pumped

Heating Pump Age

Heat Emitter

Flow Temperature

Flow Temperature Value

25.0 Main Heating 2

26.0 Heat Networks

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

27.0 Secondary Heating

28.0 Water Heating

Water Heating

SAP Code

Flue Gas Heat Recovery System

Waste Water Heat Recovery Instantaneous System 1

Waste Water Heat Recovery Instantaneous System 2

Summary for Input Data

| | |
|--|------------|
| Waste Water Heat Recovery Storage System | No |
| Solar Panel | No |
| Water use <= 125 litres/person/day | Yes |
| Summer Immersion | No |
| Cold Water Source | From mains |
| Bath Count | 1 |
| Baths connected to WWHRS | 0 |
| Supplementary Immersion | No |
| Immersion Only Heating Hot Water | No |

28.1 Showers

| Description | Shower Type | Flow Rate [l/min] | Rated Power [kW] | Connected | Connected To |
|-------------|---|-------------------|------------------|-----------|------------------------|
| Shower | Combi boiler or unvented hot water system | 9.00 | | Yes | Instantaneous System 1 |

28.3 Waste Water Heat Recovery System Instantaneous System 1

| | |
|-------------|---|
| Database ID | 80140 |
| Brand Model | RECOUP, Easyfit+ |
| Details | Year: 2017 + current Efficiency: 40.7 Utilisation factor: 0.956 |

29.0 Hot Water Cylinder

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

31.0 Thermal Store

| | |
|------------------------|------------------------|
| Thermal Store | None |
| Thermal Store Pipework | within a single casing |

32.0 Photovoltaic Unit

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

| PV Cells kWp | Orientation | Elevation | Overshading | FGHRS | MCS Certificate | Overshading Factor | MCS Certificate Reference | Panel Manufacturer |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 0.67 | East | 30° | None Or Little | No | No | 1.00 | | |

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 | 009423 - HT - Wentbridge - DET | Issued on Date | 04/11/2024 |
| Assessment Reference | Ideal HP290 | Prop Type Ref | HT- Wentbridge - DET |
| Property | Plot , HT - Wentbridge - DET, Land off Thurnscoe Bridge Lane | | |

| | | | | | |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating | 87 B | DER | 2.79 | TER | 11.25 |
| Environmental | 97 A | % DER < TER | | | 75.20 |
| CO ₂ Emissions (t/year) | 0.29 | DFEE | 40.62 | TFEE | 44.06 |
| Compliance Check | See BREL | % DFEE < TFEE | | | 7.81 |
| % DPER < TPER | 46.87 | DPER | 31.30 | TPER | 58.91 |

| | | | |
|------------------|--------------------|-------------|-----------|
| Assessor Details | Mr. George Leadley | Assessor ID | P719-0001 |
| Client | | | |

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

| | |
|--------------------------------|----------------------------|
| Orientation | East |
| 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 | 2024 |
| 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 | 181.89 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 | Unheated Space Floor Area | Average Storey Height |
|------------------|---------------------|----------------------|---------------------------|-----------------------|
| Ground floor: | 32.62 m | 46.29 m ² | 13.59 m ² | 2.59 m |
| 1st Storey: | 32.62 m | 59.88 m ² | | 2.34 m |

| | |
|-----------------|----------------------|
| 8.0 Living Area | 11.84 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 | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.24 | 60.00 | 141.19 | 120.14 | 0.00 | None | 21.05 | Enter Gross Area |
| | Garage Wall | Solid Wall | Solid wall : plasterboard on dabs, 200 mm dense block, insulated externally | 0.24 | 150.00 | 19.81 | 19.81 | 0.70 | Garage Single 1 Inside | 0.00 | Enter Gross Area |

| 9.2 Internal Walls | Description | Construction | Kappa (kJ/m ² K) | Area (m ²) |
|--------------------|-----------------------|-----------------------------------|-----------------------------|------------------------|
| | Ground Floor - Timber | Plasterboard on timber frame | 9.00 | 62.32 |
| | Ground Floor - Block | Dense block, plasterboard on dabs | 75.00 | 24.92 |
| | First Floor - Timber | Plasterboard on timber frame | 9.00 | 129.87 |

| 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 | 0.09 | 9.00 | 59.88 | 59.88 | None | 0.00 | Enter Gross Area | 0.00 |

| 10.2 Internal Ceilings | Description | Storey | Construction | Area (m ²) |
|------------------------|--------------|-----------------|--|------------------------|
| | Ground Floor | Lowest occupied | Plasterboard ceiling, carpeted chipboard floor | 46.29 |

| | |
|-----------------------|--|
| 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) |
|--------------------|------------------------|-----------------|---|-----------------|------------------------|----------------|----------------|-----------|
| Ground Floor | Ground Floor - Solid | Lowest occupied | Suspended concrete floor, carpeted | 0.11 | None | 0.00 | 75.00 | 46.29 |
| Floor Above Garage | Exposed Floor - Timber | +1 | Timber exposed floor, insulation between joists | 0.15 | Garage Single 1 Inside | 0.70 | 20.00 | 13.59 |

11.2 Internal Floors

| Description | Storey Index | Construction | Kappa (kJ/m²K) | Area (m²) |
|-------------|--------------|--|----------------|-----------|
| First Floor | | Plasterboard ceiling, carpeted chipboard floor | 9.00 | 46.29 |

12.0 Opening Types

| Description | Data Source | Type | Glazing | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value (W/m²K) |
|-------------|---------------------------|------------|------------------------|-------------|--------------|---------|------------|--------------|-----------------|
| Solid Doors | Manufacturer | Solid Door | | | | 0.00 | | | 1.30 |
| Windows | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.38 | | 1.00 | 0.86 |
| Patio Doors | BFRC, BSI or CERTASS data | Window | Triple Low-E Soft 0.05 | | | 0.35 | | 1.00 | 0.89 |

13.0 Openings

| Name | Opening Type | Location | Orientation | Area (m²) | Pitch |
|------------------|--------------|---------------|-------------|-----------|-------|
| Front Door | Solid Doors | External Wall | East | 2.15 | 0 |
| Front Windows | Windows | External Wall | East | 6.79 | 0 |
| LH Windows | Windows | External Wall | South | 0.72 | 0 |
| Rear Windows | Windows | External Wall | West | 6.77 | 0 |
| Rear Patio Doors | Patio Doors | External Wall | West | 3.80 | 0 |
| RH Windows | Windows | External Wall | North | 0.82 | 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 |
|--|--------------------------|--------|-------|-------------------------|----------|
| E1 Steel lintel with perforated steel base plate | Non Gov Approved Schemes | 15.76 | 0.27 | 0.27 Knauf PSI Details | No |
| E3 Sill | Non Gov Approved Schemes | 12.92 | 0.02 | 0.02 Knauf PSI Details | No |
| E4 Jamb | Non Gov Approved Schemes | 31.50 | 0.02 | 0.02 Knauf PSI Details | No |
| E5 Ground floor (normal) | Independently assessed | 9.99 | 0.04 | 0.04 FES - Para | No |
| E5 Ground floor (normal) | Independently assessed | 14.99 | 0.06 | 0.06 FES - Perp | No |
| E20 Exposed floor (normal) | Independently assessed | 7.64 | 0.05 | 0.05 FES | No |
| E21 Exposed floor (inverted) | Independently assessed | 7.64 | 0.02 | 0.02 FES | No |
| E6 Intermediate floor within a dwelling | Non Gov Approved Schemes | 24.98 | 0.00 | 0.00 Knauf PSI Details | No |
| E10 Eaves (insulation at ceiling level) | Non Gov Approved Schemes | 14.32 | 0.04 | 0.04 Knauf PSI Details | No |
| E12 Gable (insulation at ceiling level) | Non Gov Approved Schemes | 18.30 | 0.04 | 0.04 Knauf PSI Details | No |
| E16 Corner (normal) | Non Gov Approved Schemes | 22.08 | 0.04 | 0.04 Knauf PSI Details | No |
| E16 Corner (normal) | Table K1 - Default | 5.18 | 0.18 | 0.18 | No |
| E17 Corner (inverted – internal area greater than external area) | Non Gov Approved Schemes | 4.93 | -0.09 | -0.09 Knauf PSI Details | No |
| E17 Corner (inverted – internal area greater than external area) | Table K1 - Default | 2.59 | 0.00 | 0.00 Default | No |
| E5 Ground floor (normal) | Independently assessed | 7.64 | 0.05 | 0.05 FES - Garage | No |

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

| | |
|--|---|
| Mechanical Ventilation System Present | <input type="text" value="Yes"/> |
| Approved Installation | <input type="text" value="Yes"/> |
| Mechanical Ventilation data Type | <input type="text" value="Database"/> |
| Type | <input type="text" value="Mechanical extract ventilation - decentralised"/> |
| MV Reference Number | <input type="text" value="500776"/> |
| Duct Type | <input type="text" value="Flexible"/> |
| Wet Rooms | <input type="text" value="4"/> |
| SFP from Installer Commissioning Certificate | <input type="text" value="No"/> |

19.1 Mechanical extract ventilation - Decentralised

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

Summary for Input Data



0.08 Through Wall Fan 2
Other Wet Room

20.0 Fans, Open Fireplaces, Flues

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

21.0 Fixed Cooling System

No

22.0 Pressure Testing

Yes

| | | |
|---------------------------|-------------|---|
| Designed AP ₅₀ | 4.00 | 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 |
|-------------------|----------|-------|----------|-------|
| Internal Lighting | 108.00 | 8.00 | 864.00 | 13 |
| External Lighting | 102.50 | 4.00 | 410.00 | 1 |

24.0 Main Heating 1

Database

| | | |
|------------------------|------------------------|---|
| Percentage of Heat | 100.00 | % |
| Database Ref. No. | 107972 | |
| Fuel Type | Electricity | |
| SAP Code | 104 | |
| In Winter | 297.54 | |
| In Summer | 202.59 | |
| Model Name | HP290 Monobloc 6kW | |
| Manufacturer | Midea | |
| System Type | Heat Pump | |
| Controls SAP Code | 2207 | |
| PCDF Controls | 0 | |
| Delayed Start Stat | Yes | |
| Burner Control | On/Off | |
| HETAS approved System | No | |
| Is MHS Pumped | Pump in unheated space | |
| Heating Pump Age | 2013 or later | |
| Heat Emitter | Radiators | |
| 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 | | | | | | | | |

Summary for Input Data

Heat source 5 None

27.0 Secondary Heating

28.0 Water Heating

Water Heating

SAP Code

Flue Gas Heat Recovery System

Waste Water Heat Recovery Instantaneous System 1

Waste Water Heat Recovery Instantaneous System 2

Waste Water Heat Recovery Storage System

Solar Panel

Water use <= 125 litres/person/day

Summer Immersion

Cold Water Source

Bath Count

Baths connected to WWHRS

Supplementary Immersion

Immersion Only Heating Hot Water

28.1 Showers

| Description | Shower Type | Flow Rate [l/min] | Rated Power [kW] | Connected | Connected To |
|-----------------|---|-------------------|------------------|-----------|------------------------|
| Shower en-suite | Combi boiler or unvented hot water system | 9.00 | 9.30 | Yes | Instantaneous System 1 |
| | Combi boiler or unvented hot water system | 9.00 | 9.30 | No | |

28.3 Waste Water Heat Recovery System Instantaneous System 1

Database ID

Brand Model

Details

29.0 Hot Water Cylinder

Cylinder Stat

Cylinder In Heated Space

Independent Time Control

Insulation Type

Insulation Thickness

Cylinder Volume L

Loss kWh/day

Pipes insulation

In Airing Cupboard

31.0 Thermal Store

Thermal Store Pipework

32.0 Photovoltaic Unit

Export Capable Meter?

Connected To Dwelling

Diverter

Battery Capacity [kWh]

| PV Cells kWp | Orientation | Elevation | Overshading | FGHRS | MCS Certificate | Overshading Factor | MCS Certificate Reference | Panel Manufacturer |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 1.20 | East | 30° | None Or Little | No | No | 1.00 | | |

34.0 Small-scale Hydro

Electricity Generated

Summary for Input Data



Apportioned kWh/Year
Connected to dwelling's electricity meter
Electricity Generation

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None