

# Energy Statement

## Energy and Carbon Reduction

Fenay Bridge

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Issue: Initial

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**PLANNING**



**DESIGN**



**ON-CONSTRUCTION**



**EXISTING BUILDINGS**

**Project name:** Fenay Bridge

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

Dean Shores

George Leadley

Sam Palmer

**Summary of changes:**

N/A

# Contents

| Section                                    | Page |
|--------------------------------------------|------|
| Company Profile                            | 4    |
| Introduction                               | 5    |
| Sustainable Design                         | 6    |
| Material Selection                         | 6    |
| Flood Risk                                 | 7    |
| Pollution during construction              | 7    |
| Health & Wellbeing                         | 7    |
| Water Efficiency                           | 8    |
| Renewable Technologies                     | 10   |
| Solar Thermal                              | 10   |
| Photovoltaic Panels                        | 11   |
| Air Source Heat Pump                       | 11   |
| Energy Strategy                            | 13   |
| The Context                                | 13   |
| Proposed Strategy                          | 14   |
| Establishing a Baseline                    | 15   |
| Fabric and Building Services Specification | 16   |
| Reduced Emission Rate & Energy Requirement | 17   |
| Evaluation                                 | 18   |
| Appendix A                                 | 19   |

# 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 Homes by Honey to accompany the planning application for the proposed development known as Fenay Bridge.

The development proposals will see the construction of 67 new dwellings, consisting of detached, semi detached and terraces.

This report reviews the proposed energy and carbon reduction strategy advanced by Homes by Honey 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 CO<sub>2</sub> 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.

# 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. Homes by Honey 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 Homes by Honey 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 Homes by Honey 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)           | 6                  | <b>1.46</b> | <b>0.00</b>  | 5.84                      |
|                              | Part Flush (litres)           | 2.6                | <b>2.96</b> | <b>0.00</b>  | 7.70                      |
| Taps (excluding kitchen tap) | Flow rate (litres/minute)     | 6                  | <b>1.58</b> | <b>1.58</b>  | 11.06                     |
| Baths (where shower present) | Capacity to overflow (litres) | 180                | <b>0.11</b> | <b>0.00</b>  | 19.80                     |
| Showers (where bath present) | Flow rate (litres/minute)     | 9                  | <b>4.37</b> | <b>0.00</b>  | 39.33                     |
| Kitchen sink tap             | Flow rate (litres/minute)     | 6                  | <b>0.44</b> | <b>10.36</b> | 13.00                     |
| Washing Machine              | Litres/kg dry load            | 8.17               | <b>2.1</b>  | <b>0.00</b>  | 17.16                     |
| Dishwasher                   | Litres/place setting          | 1.25               | <b>3.60</b> | <b>0.00</b>  | 4.50                      |
| <b>Total</b>                 |                               |                    |             |              | <b>118.38</b>             |

|                                                 |               |
|-------------------------------------------------|---------------|
| Contribution from Greywater (litres/person/day) | 0             |
| Contribution from Rainwater (litres/person/day) | 0             |
| <b>Total Internal Water Consumption</b>         | <b>118.36</b> |
| Normalisation Factor                            | 0.91          |
| Water Consumption with Normalisation Factor     | 107.743       |
| External Use                                    | 5.00          |
| <b>Part G Water Consumption</b>                 | <b>112.73</b> |

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 proposed development, the site layout and orientation a two panel systems is 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 CO<sub>2</sub> 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 Homes by Honey have confirmed that PV will be installed on all plots.

Table 6 which is located on page 16 confirms the PV array required on a housetype and dwelling type basis.



## 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 20m<sup>2</sup> of floor space.



## 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, Homes by Honey 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.

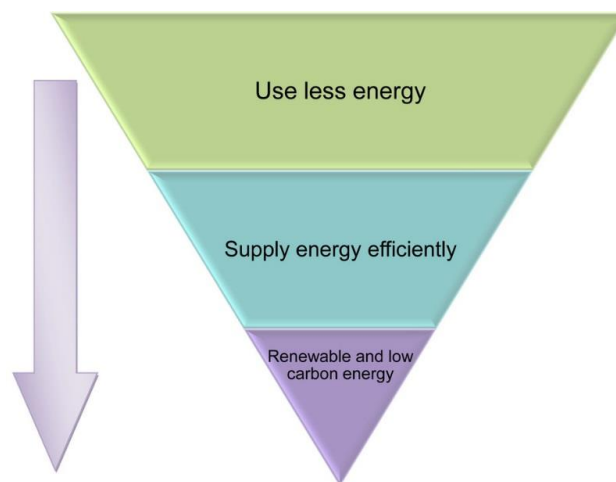
The proposed dwellings were modelled in SAP10 to determine the energy consumption and corresponding CO2 emissions of the development. Standard Assessment Procedure, or SAP, is the Government's approved methodology for the calculation of energy consumption and CO2 emissions for new build dwellings.

In line with best practice the proposed energy strategy for Fenay Bridge 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.**

Homes by Honey have confirmed Lean measures equal to a 5.59% reduction in fabric heat loss across the building envelope. This greatly reduces the need for energy within a dwelling.

#### **Be Clean.**

Homes by Honey 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.**

Homes by Honey 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 Homes by Honey 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 CO<sub>2</sub> 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 - The Linden - Det     | 3         | 3,699.31                         | 19,320.19                       |
| HT - The Eucalyptus - Det | 5         | 5,917.40                         | 30,964.89                       |
| HT - The Ironbark - DET   | 7         | 8,482.71                         | 44,493.79                       |
| HT - The Jamun - Det      | 2         | 2,481.75                         | 13,015.30                       |
| HT - The Lavender - Det   | 5         | 7,451.60                         | 39,138.10                       |
| HT - The Macadamia - END  | 4         | 4,950.98                         | 25,937.36                       |
| HT - The Manuka - End     | 4         | 4,987.37                         | 26,073.13                       |
| HT - The Rosemary - DET   | 1         | 1,254.84                         | 6,553.35                        |
| HT - The Sage - Det       | 4         | 5,328.13                         | 27,859.96                       |
| HT - The Tupilo - Det     | 4         | 5,195.34                         | 27,097.16                       |
| HT - The Chestnut - End   | 4         | 3,864.54                         | 20,190.72                       |
| HT - The Avocado - End    | 15        | 13,618.53                        | 71,323.09                       |
| HT - The Avocado - Mid    | 2         | 1,651.11                         | 8,632.81                        |
| HT - The Blueberry - End  | 2         | 1,927.48                         | 10,067.29                       |
| HT - The Buckwheat - End  | 1         | 964.29                           | 5,040.31                        |
| HT - The Dandelion - Det  | 4         | 4,484.40                         | 23,458.00                       |
| <b>Total</b>              | <b>67</b> | <b>76,259.78</b>                 | <b>399,165.46</b>               |

Table 4 – Baseline Energy Consumption & CO<sub>2</sub>

The calculations summarised in the table above confirm Fenay Bridge has a baseline site wide energy requirement of 399,165.46 kWh/year and an associated CO<sub>2</sub> emission rate of 76,259.78 kgCO<sub>2</sub>/year.

## Fabric and Building Services Specification

Homes by Honey 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 <sup>2</sup> K                       | 0.19W/m <sup>2</sup> K                       |
| Roof                      | 0.16W/m <sup>2</sup> K                       | 0.10W/m <sup>2</sup> K                       |
| Floor                     | 0.20W/m <sup>2</sup> K                       | 0.12W/m <sup>2</sup> K                       |
| Glazing & Doors           | 1.80W/m <sup>2</sup> K                       | 1.20/1.30W/m <sup>2</sup> K                  |
| Air Test                  | 8.00m <sup>3</sup> /h.m <sup>2</sup> at 50Pa | 4.00m <sup>3</sup> /h.m <sup>2</sup> 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;

- Homes by Honey 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.

| Housetype  | Dwelling Type | Total kWp |
|------------|---------------|-----------|
| Linden     | Det           | 3.20      |
| Eucalyptus | Det           | 2.80      |
| Ironbark   | Det           | 3.20      |
| Jamun      | Det           | 3.60      |
| Lavender   | Det           | 2.80      |
| Macadamia  | End           | 2.00      |
| Manuka     | End           | 2.40      |
| Rosemary   | Det           | 3.60      |
| Sage       | Det           | 3.60      |
| Tupilo     | Det           | 3.60      |
| Chestnut   | End           | 2.00      |
| Avocado    | End           | 2.00      |
| Avocado    | Mid           | 2.00      |
| Blueberry  | End           | 2.40      |
| Buckwheat  | End           | 2.40      |
| Dandelion  | Det           | 2.40      |

**Table 6 – PV Array**

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.



# 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 - The Linden - Det     | 3         | 3,646.06                         | 19,199.48                       |
| HT - The Eucalyptus - Det | 5         | 5,762.08                         | 30,373.65                       |
| HT - The Ironbark - DET   | 7         | 8,401.85                         | 44,251.21                       |
| HT - The Jamun - Det      | 2         | 2,403.99                         | 12,664.26                       |
| HT - The Lavender - Det   | 5         | 7,262.44                         | 38,387.20                       |
| HT - The Macadamia - END  | 4         | 4,725.32                         | 25,025.69                       |
| HT - The Manuka - End     | 4         | 4,692.59                         | 24,713.37                       |
| HT - The Rosemary - DET   | 1         | 1,237.08                         | 6,503.87                        |
| HT - The Sage - Det       | 4         | 5,194.92                         | 27,327.15                       |
| HT - The Tupilo - Det     | 4         | 5,000.24                         | 26,255.42                       |
| HT - The Chestnut - End   | 4         | 3,797.53                         | 20,034.35                       |
| HT - The Avocado - End    | 15        | 13,006.22                        | 68,662.73                       |
| HT - The Avocado - Mid    | 2         | 1,580.73                         | 8,330.18                        |
| HT - The Blueberry - End  | 2         | 1,851.33                         | 9,754.77                        |
| HT - The Buckwheat - End  | 1         | 925.43                           | 4,869.81                        |
| HT - The Dandelion - Det  | 4         | 4,432.60                         | 23,369.20                       |
| <b>Total</b>              | <b>67</b> | <b>73,920.41</b>                 | <b>389,722.36</b>               |

**Table 7 – Reduced Emission Rate & Energy Requirement**

The calculations summarised in the table above confirm Fenay Bridge has a reduced energy requirement of 389,722.36 kWh/year and an associated emission rate of 73,920.41 kgCO<sub>2</sub>/year. These are respectively 2.37% and 3.07% reductions over the baseline calculated previously.

In order to comply with the planning requirements, it is necessary for this development to show measures have been taken to ensure high energy efficiency and best practice with regards to energy consumption inline with the Energy Hierarchy.

# Evaluation

The FES Group was instructed by Homes by Honey to review the performance of the proposed Energy Strategy for the development at Fenay Bridge. The energy strategy was detailed previously but can be best summarised as follows;

- Homes by Honey proposes an energy strategy, which addresses the two policy concerns of sustainable design and construction: climate change and energy security.
- Homes by Honey 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 3.07% and the proposed energy demand by 2.37% This is a significant betterment and demonstrates that the proposed development will have a reduced reliance on national resources (gas and electricity).

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 Homes by Honey.

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   | 007837 - The Jamun - Det |               | Issued on Date       | 15/09/2023 |
| Assessment Reference | As Designed - As         | Prop Type Ref | 007837 The Jamun DET |            |
| Property             | Plot , Fenay Bridge      |               |                      |            |

|                                    |          |               |       |      |       |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating                         | 94 A     | DER           | 10.82 | TER  | 11.17 |
| Environmental                      | 90 B     | % DER < TER   |       |      | 3.13  |
| CO <sub>2</sub> Emissions (t/year) | 1.21     | DFEE          | 40.90 | TFEE | 44.05 |
| Compliance Check                   | See BREL | % DFEE < TFEE |       |      | 7.15  |
| % DPER < TPER                      | 2.69     | DPER          | 57.00 | TPER | 58.58 |

|                  |                 |             |           |
|------------------|-----------------|-------------|-----------|
| Assessor Details | Mr. Dean Shores | Assessor ID | W976-0001 |
| Client           |                 |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | East                |        |
| Property Tenture               | 1                   |        |
| 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                 | 2022                |        |
| 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                   | N/A                 | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | Yes                 |        |

| 7.0 Measurements | Heat Loss Perimeter | Internal Floor Area  | Unheated Space Floor Area | Average Storey Height |
|------------------|---------------------|----------------------|---------------------------|-----------------------|
| Basement:        | 0.00 m              | 0.00 m <sup>2</sup>  |                           | 0.00 m                |
| Ground floor:    | 27.74 m             | 45.80 m <sup>2</sup> | 19.49 m <sup>2</sup>      | 2.70 m                |
| 1st Storey:      | 34.20 m             | 65.29 m <sup>2</sup> |                           | 2.38 m                |
| 2nd Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  |                           | 0.00 m                |
| 3rd Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  |                           | 0.00 m                |
| 4th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  |                           | 0.00 m                |
| 5th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  |                           | 0.00 m                |
| 6th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  |                           | 0.00 m                |
| 7th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  |                           | 0.00 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 36.99 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls |             |                                                                                     |                              |                             |                             |                             |             |                        |          |                       |
|--------------------|-------------|-------------------------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|------------------------|----------|-----------------------|
| Description        | Type        | Construction                                                                        | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter                | Openings | Area Calculation Type |
| External Wall      | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.19                         | 60.00                       | 140.19                      | 120.48                      | 0.00        | None                   | 19.71    | Enter Gross Area      |
| Garage Wall        | Solid Wall  | Solid wall : dense plaster, insulation, any outside structure                       | 0.26                         | 17.00                       | 16.20                       | 16.20                       | 0.55        | Garage Single 2 Inside | 0.00     | Enter Gross Area      |

| 9.1 Party Walls |                                 |                                                                                 |                              |                             |                        |             |         |
|-----------------|---------------------------------|---------------------------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
| Description     | Type                            | Construction                                                                    | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
| Party Wall      | Filled Cavity with Edge Sealing | Plasterboard on dabs mounted on cement render on both sides, AAC blocks, cavity | 0.00                         | 45.00                       | 39.55                  | 0.00        | None    |

| 9.2 Internal Walls |                              |  |  | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------------|------------------------------|--|--|-----------------------------|------------------------|
| Description        | Construction                 |  |  |                             |                        |
| Internal Wall GF   | Plasterboard on timber frame |  |  | 9.00                        | 78.44                  |
| Internal Wall FF   | Plasterboard on timber frame |  |  | 9.00                        | 131.53                 |

# Summary for Input Data

## 10.0 External Roofs

| Description   | Type                   | Construction                             | U-Value<br>(W/m²K) | Kappa<br>(kJ/m²K) | Gross<br>Area(m²) | Nett<br>Area<br>(m²) | Shelter<br>Code | Shelter<br>Factor | Calculation<br>Type | Openings |
|---------------|------------------------|------------------------------------------|--------------------|-------------------|-------------------|----------------------|-----------------|-------------------|---------------------|----------|
| External Roof | External Plane<br>Roof | Plasterboard, insulated at ceiling level | 0.10               | 9.00              | 65.29             | 65.29                | None            | 0.00              | Enter Gross<br>Area | 0.00     |

## 10.2 Internal Ceilings

| Description         | Storey          | Construction                                   | Area (m²) |
|---------------------|-----------------|------------------------------------------------|-----------|
| Internal Ceiling GF | Lowest occupied | Plasterboard ceiling, carpeted chipboard floor | 45.80     |

## 11.0 Heat Loss Floors

| Description       | Type                      | Storey Index    | Construction                                    | U-Value<br>(W/m²K) | Shelter Code           | Shelter<br>Factor | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|---------------------------|-----------------|-------------------------------------------------|--------------------|------------------------|-------------------|-------------------|-----------|
| Heatloss Floor GF | Ground Floor - Solid      | Lowest occupied | Suspended concrete floor, carpeted              | 0.12               | None                   | 0.00              | 75.00             | 45.80     |
| Exposed Floor     | Exposed Floor -<br>Timber | +1              | Timber exposed floor, insulation between joists | 0.13               | Garage Single 2 Inside | 0.55              | 20.00             | 19.49     |

## 11.2 Internal Floors

| Description       | Storey<br>Index | Construction                                   | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|-----------------|------------------------------------------------|-------------------|-----------|
| Internal Floor FF |                 | Plasterboard ceiling, carpeted chipboard floor | 9.00              | 42.57     |

## 12.0 Opening Types

| Description      | Data Source                  | Type             | Glazing                | Glazing<br>Gap | Filling<br>Type | G-value | Frame<br>Type | Frame<br>Factor | U Value<br>(W/m²K) |
|------------------|------------------------------|------------------|------------------------|----------------|-----------------|---------|---------------|-----------------|--------------------|
| Windows          | BFRC, BSI or<br>CERTASS data | Window           | Double Low-E Soft 0.05 |                | Air Filled      | 0.52    | Wood          | 1.00            | 1.22               |
| Doors            | Manufacturer                 | Solid Door       |                        |                | Air Filled      | 0.00    | Wood          | 0.70            | 1.20               |
| Patio Doors      | BFRC, BSI or<br>CERTASS data | Window           | Double Low-E Soft 0.05 |                | Air Filled      | 0.31    | Wood          | 1.00            | 1.30               |
| Half Glazed Door | Manufacturer                 | Half Glazed Door | Double Low-E Soft 0.05 |                | Air Filled      | 0.63    | Wood          | 0.70            | 1.20               |

## 13.0 Openings

| Name             | Opening Type | Location      | Orientation | Area (m²) | Pitch |
|------------------|--------------|---------------|-------------|-----------|-------|
| Front Door       | Doors        | External Wall | East        | 2.15      | 0     |
| Front Window     | Windows      | External Wall | East        | 8.02      | 0     |
| Rear Windows     | Windows      | External Wall | West        | 3.07      | 0     |
| Rear Patio Doors | Patio Doors  | External Wall | West        | 5.69      | 0     |
| RHS Windows      | Windows      | External Wall | North       | 0.78      | 0     |

## 14.0 Conservatory

## 15.0 Draught Proofing

 %

## 16.0 Draught Lobby

## 17.0 Thermal Bridging

### 17.1 List of Bridges

| Bridge Type                                                      | Source Type            | Length | Psi  | Adjusted Reference: | Imported |
|------------------------------------------------------------------|------------------------|--------|------|---------------------|----------|
| E1 Steel lintel with perforated steel base plate                 | Independently assessed | 12.25  | 0.17 | 0.17 CBA            | No       |
| E3 Sill                                                          | Independently assessed | 8.18   | 0.01 | 0.01 CBA            | No       |
| E4 Jamb                                                          | Independently assessed | 27.04  | 0.01 | 0.01 CBA            | No       |
| E5 Ground floor (normal)                                         | Independently assessed | 21.74  | 0.07 | 0.07 CBA            | No       |
| E6 Intermediate floor within a dwelling                          | Independently assessed | 21.74  | 0.01 | 0.01 CBA            | No       |
| E10 Eaves (insulation at ceiling level)                          | Independently assessed | 16.88  | 0.06 | 0.06 CBA            | No       |
| E12 Gable (insulation at ceiling level)                          | Independently assessed | 17.38  | 0.08 | 0.08 CBA            | No       |
| E16 Corner (normal)                                              | Independently assessed | 20.00  | 0.05 | 0.05 CBA            | No       |
| E20 Exposed floor (normal)                                       | Independently assessed | 12.50  | 0.10 | 0.10                | No       |
| E21 Exposed floor (inverted)                                     | Independently assessed | 5.98   | 0.11 | 0.11                | No       |
| E17 Corner (inverted – internal area greater than external area) | Independently assessed | 5.08   | 0.08 | 0.08                | No       |
| E5 Ground floor (normal)                                         | Independently assessed | 6.00   | 0.07 | 0.07                | No       |
| E16 Corner (normal)                                              | Independently assessed | 2.70   | 0.05 | 0.05                | No       |

Y-value  W/m²K

## 18.0 Pressure Testing

|                           |                                          |                   |
|---------------------------|------------------------------------------|-------------------|
| Designed AP <sub>50</sub> | <input type="text" value="4.00"/>        | m³/(h.m²) @ 50 Pa |
| Property Tested?          | <input type="text" value="Yes"/>         |                   |
| Test Method               | <input type="text" value="Blower Door"/> |                   |
| As Built AP <sub>50</sub> | <input type="text" value="0.10"/>        | m³/(h.m²) @ 50 Pa |

## 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"/> |

# Summary for Input Data

|                                              |                                                |
|----------------------------------------------|------------------------------------------------|
| Type                                         | Mechanical extract ventilation - decentralised |
| MV Reference Number                          | 500787                                         |
| Duct Type                                    | Flexible                                       |
| MVHR Efficiency                              | 0.00                                           |
| Wet Rooms                                    | 4                                              |
| SFP from Installer Commissioning Certificate | No                                             |

## 19.1 Mechanical extract ventilation - Decentralised

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

## 20.0 Fans, Open Fireplaces, Flues

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

## 22.0 Lighting

|                   |                    |                   |             |                  |             |
|-------------------|--------------------|-------------------|-------------|------------------|-------------|
| No Fixed Lighting | No                 |                   |             |                  |             |
|                   | Name<br>Downlights | Efficacy<br>80.00 | Power<br>28 | Capacity<br>2240 | Count<br>12 |

## 24.0 Main Heating 1

|                       |                      |   |
|-----------------------|----------------------|---|
|                       | Database             |   |
| Percentage of Heat    | 100.00               | % |
| Database Ref. No.     | 19003                |   |
| Fuel Type             | Mains gas            |   |
| SAP Code              | 0                    |   |
| In Winter             | 89.00                |   |
| In Summer             | 98.90                |   |
| Model Name            | LOGIC CODE COMBI2    |   |
| Manufacturer          | Ideal Boilers        |   |
| System Type           | Combi boiler         |   |
| Controls SAP Code     | 2110                 |   |
| Delayed Start Stat    | Yes                  |   |
| Burner Control        | Modulating           |   |
| HETAS approved System | No                   |   |
| Oil Pump Inside       | No                   |   |
| FI Case               | 0.00                 |   |
| Flue Type             | Balanced             |   |
| Fan Assisted Flue     | Yes                  |   |
| Is MHS Pumped         | Pump in heated space |   |
| Heating Pump Age      | 2013 or later        |   |
| Heat Emitter          | Radiators            |   |
| Flow Temperature      | Unknown              |   |
| Boiler Interlock      | Yes                  |   |
| Combi boiler type     | Standard Combi       |   |
| Combi keep hot type   | None                 |   |

|                     |      |
|---------------------|------|
| 25.0 Main Heating 2 | None |
|---------------------|------|

|                    |      |
|--------------------|------|
| 26.0 Heat Networks | None |
|--------------------|------|

## 28.0 Water Heating



# Summary for Input Data

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

## 28.1 Showers

| Description | Shower Type                               | Flow Rate [l/min] | Rated Power [kW] | Connected | Connected To           |
|-------------|-------------------------------------------|-------------------|------------------|-----------|------------------------|
| Shower 1    | Combi boiler or unvented hot water system | 11.00             |                  | Yes       | Instantaneous System 1 |
| Shower 2    | Combi boiler or unvented hot water system | 11.00             | 9.30             | No        |                        |

## 28.2 Flue Gas Heat Recovery System

|             |   |
|-------------|---|
| Database ID | 0 |
| Brand Model |   |
| Details     |   |

## 28.3 Waste Water Heat Recovery System

## 29.0 Hot Water Cylinder

|                          |      |
|--------------------------|------|
|                          | None |
| Cylinder Stat            | No   |
| Cylinder In Heated Space | No   |
| Independent Time Control | No   |
| In Airing Cupboard       | No   |

## 31.0 Thermal Store

|  |      |
|--|------|
|  | None |
|--|------|

## 32.0 Photovoltaic Unit

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

| PV Cells kWp | Orientation | Elevation | Overshading    | FGHRS | MCS Certificate | Overshading Factor | MCS Certificate Reference | Panel Manufacturer |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 3.60         | East        | 30°       | None Or Little | No    | No              | 1.00               |                           | N/a                |

## 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   | 007837 - The Lavender - Det |               | Issued on Date          | 15/09/2023 |
| Assessment Reference | As Designed - As            | Prop Type Ref | 007837 The Lavender DET |            |
| Property             | Plot , Fenay Bridge         |               |                         |            |

|                                    |          |               |       |      |       |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating                         | 91 B     | DER           | 12.67 | TER  | 13.00 |
| Environmental                      | 88 B     | % DER < TER   |       |      | 2.54  |
| CO <sub>2</sub> Emissions (t/year) | 1.47     | DFEE          | 45.78 | TFEE | 49.80 |
| Compliance Check                   | See BREL | % DFEE < TFEE |       |      | 8.07  |
| % DPER < TPER                      | 1.92     | DPER          | 66.97 | TPER | 68.28 |

|                  |                 |             |           |
|------------------|-----------------|-------------|-----------|
| Assessor Details | Mr. Dean Shores | Assessor ID | W976-0001 |
| Client           |                 |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | East                |        |
| Property Tenture               | 1                   |        |
| 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                 | 2022                |        |
| 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                   | N/A                 | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | Yes                 |        |

| 7.0 Measurements | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------------|----------------------|-----------------------|
| Basement:        | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| Ground floor:    | 36.24 m             | 55.30 m <sup>2</sup> | 2.70 m                |
| 1st Storey:      | 32.24 m             | 59.34 m <sup>2</sup> | 2.38 m                |
| 2nd Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 3rd Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 4th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 5th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 6th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 7th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 52.31 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls | Description   | Type        | Construction                                                                        | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter                | Openings | Area Calculation Type |
|--------------------|---------------|-------------|-------------------------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|------------------------|----------|-----------------------|
|                    | External Wall | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.19                         | 60.00                       | 152.06                      | 130.60                      | 0.00        | None                   | 21.46    | Enter Gross Area      |
|                    | Garage Wall   | Cavity Wall | Cavity wall : dense plaster, AAC block, filled cavity, any outside structure        | 0.19                         | 70.00                       | 7.76                        | 7.76                        | 0.55        | Garage Single 2 Inside | 0.00     | Enter Gross Area      |
|                    | Garage Wall   | Solid Wall  | Solid wall : dense plaster, insulation, any outside structure                       | 0.26                         | 17.00                       | 21.71                       | 21.71                       | 0.55        | Garage Single 2 Inside | 0.00     | Enter Gross Area      |

| 9.1 Party Walls | Description | Type                            | Construction                                                                    | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|-----------------|-------------|---------------------------------|---------------------------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
|                 | Party Wall  | Filled Cavity with Edge Sealing | Plasterboard on dabs mounted on cement render on both sides, AAC blocks, cavity | 0.00                         | 45.00                       | 39.55                  | 0.00        | None    |

| 9.2 Internal Walls | Description      | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------------|------------------|------------------------------|-----------------------------|------------------------|
|                    | Internal Wall GF | Plasterboard on timber frame | 9.00                        | 72.94                  |
|                    | Internal Wall FF | Plasterboard on timber frame | 9.00                        | 143.11                 |

# Summary for Input Data

## 10.0 External Roofs

| Description   | Type           | Construction                             | U-Value<br>(W/m²K) | Kappa<br>(kJ/m²K) | Gross<br>Area(m²) | Nett<br>Area<br>(m²) | Shelter<br>Code | Shelter<br>Factor | Calculation<br>Type | Openings |
|---------------|----------------|------------------------------------------|--------------------|-------------------|-------------------|----------------------|-----------------|-------------------|---------------------|----------|
| External Roof | External Plane | Plasterboard, insulated at ceiling level | 0.10               | 9.00              | 59.34             | 59.34                | None            | 0.00              | Enter Gross Area    | 0.00     |
| GF Roof       | External Plane | Plasterboard, insulated at ceiling level | 0.10               | 9.00              | 15.54             | 15.54                | None            | 0.00              | Enter Gross Area    | 0.00     |

## 10.2 Internal Ceilings

| Description         | Storey          | Construction                                   | Area (m²) |
|---------------------|-----------------|------------------------------------------------|-----------|
| Internal Ceiling GF | Lowest occupied | Plasterboard ceiling, carpeted chipboard floor | 38.78     |

## 11.0 Heat Loss Floors

| Description       | Type                   | Storey Index    | Construction                                    | U-Value<br>(W/m²K) | Shelter Code           | Shelter<br>Factor | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|------------------------|-----------------|-------------------------------------------------|--------------------|------------------------|-------------------|-------------------|-----------|
| Heatloss Floor GF | Ground Floor - Solid   | Lowest occupied | Suspended concrete floor, carpeted              | 0.12               | None                   | 0.00              | 75.00             | 55.33     |
| Exposed Floor     | Exposed Floor - Timber | +1              | Timber exposed floor, insulation between joists | 0.13               | Garage Single 2 Inside | 0.55              | 20.00             | 19.56     |

## 11.2 Internal Floors

| Description       | Storey Index | Construction                                   | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|--------------|------------------------------------------------|-------------------|-----------|
| Internal Floor FF |              | Plasterboard ceiling, carpeted chipboard floor | 9.00              | 39.78     |

## 12.0 Opening Types

| Description | Data Source               | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value<br>(W/m²K) |
|-------------|---------------------------|------------|------------------------|-------------|--------------|---------|------------|--------------|--------------------|
| Windows     | BFRC, BSI or CERTASS data | Window     | Double Low-E Soft 0.05 |             | Air Filled   | 0.52    | Wood       | 1.00         | 1.22               |
| Doors       | Manufacturer              | Solid Door |                        |             | Air Filled   | 0.00    | Wood       | 0.70         | 1.20               |
| Patio Doors | BFRC, BSI or CERTASS data | Window     | Double Low-E Soft 0.05 |             | Air Filled   | 0.31    | Wood       | 1.00         | 1.30               |

## 13.0 Openings

| Name             | Opening Type | Location      | Orientation | Area (m²) | Pitch |
|------------------|--------------|---------------|-------------|-----------|-------|
| Front Door       | Doors        | External Wall | East        | 2.15      | 0     |
| Front Window     | Windows      | External Wall | East        | 7.68      | 0     |
| Rear Windows     | Windows      | External Wall | West        | 5.17      | 0     |
| Rear Patio Doors | Patio Doors  | External Wall | West        | 5.69      | 0     |
| RHS Windows      | Windows      | External Wall | North       | 0.77      | 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                 | Independently assessed | 14.00  | 0.17 | 0.17     | CBA        | No       |
| E3 Sill                                                          | Independently assessed | 10.03  | 0.01 | 0.01     | CBA        | No       |
| E4 Jamb                                                          | Independently assessed | 33.34  | 0.01 | 0.01     | CBA        | No       |
| E5 Ground floor (normal)                                         | Independently assessed | 28.15  | 0.07 | 0.07     | CBA        | No       |
| E6 Intermediate floor within a dwelling                          | Independently assessed | 14.54  | 0.01 | 0.01     | CBA        | No       |
| E10 Eaves (insulation at ceiling level)                          | Independently assessed | 23.50  | 0.06 | 0.06     | CBA        | No       |
| E12 Gable (insulation at ceiling level)                          | Independently assessed | 21.18  | 0.08 | 0.08     | CBA        | No       |
| E16 Corner (normal)                                              | Independently assessed | 26.36  | 0.05 | 0.05     | CBA        | No       |
| E20 Exposed floor (normal)                                       | Independently assessed | 9.26   | 0.10 | 0.10     |            | No       |
| E21 Exposed floor (inverted)                                     | Independently assessed | 9.26   | 0.11 | 0.11     |            | No       |
| E17 Corner (inverted – internal area greater than external area) | Table K1 - Default     | 7.46   | 0.00 | 0.00     |            | No       |
| E5 Ground floor (normal)                                         | Independently assessed | 8.09   | 0.07 | 0.07     |            | No       |
| E24 Eaves (insulation at ceiling level - inverted)               | Table K1 - Default     | 8.44   | 0.15 | 0.15     |            | No       |
| E16 Corner (normal)                                              | Table K1 - Default     | 2.70   | 0.18 | 0.18     |            | No       |

|         |                                   |       |
|---------|-----------------------------------|-------|
| Y-value | <input type="text" value="0.00"/> | W/m²K |
|---------|-----------------------------------|-------|

## 18.0 Pressure Testing

|                           |                                          |                   |
|---------------------------|------------------------------------------|-------------------|
| Designed AP <sub>50</sub> | <input type="text" value="4.00"/>        | m³/(h.m²) @ 50 Pa |
| Property Tested?          | <input type="text" value="Yes"/>         |                   |
| Test Method               | <input type="text" value="Blower Door"/> |                   |
| As Built AP <sub>50</sub> | <input type="text" value="0.10"/>        | m³/(h.m²) @ 50 Pa |

## 19.0 Mechanical Ventilation

| Mechanical Ventilation                |                                  |
|---------------------------------------|----------------------------------|
| Mechanical Ventilation System Present | <input type="text" value="Yes"/> |
| Approved Installation                 | <input type="text" value="Yes"/> |

# Summary for Input Data

|                                              |                                                |
|----------------------------------------------|------------------------------------------------|
| Mechanical Ventilation data Type             | Database                                       |
| Type                                         | Mechanical extract ventilation - decentralised |
| MV Reference Number                          | 500787                                         |
| Duct Type                                    | Flexible                                       |
| MVHR Efficiency                              | 0.00                                           |
| Wet Rooms                                    | 4                                              |
| SFP from Installer Commissioning Certificate | No                                             |

## 19.1 Mechanical extract ventilation - Decentralised

| SFP  | Fan/Room Type                   | Count |
|------|---------------------------------|-------|
| 0.13 | 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     |
| 0.10 | Through Wall Fan Kitchen        | 1     |
| 0.10 | Through Wall Fan Other Wet Room | 1     |

## 20.0 Fans, Open Fireplaces, Flues

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

## 22.0 Lighting

|                   |                    |                   |             |                  |             |
|-------------------|--------------------|-------------------|-------------|------------------|-------------|
| No Fixed Lighting | No                 |                   |             |                  |             |
|                   | Name<br>Downlights | Efficacy<br>80.00 | Power<br>28 | Capacity<br>2240 | Count<br>12 |

## 24.0 Main Heating 1

|                       |                      |   |
|-----------------------|----------------------|---|
| Percentage of Heat    | 100.00               | % |
| Database Ref. No.     | 19003                |   |
| Fuel Type             | Mains gas            |   |
| SAP Code              | 0                    |   |
| In Winter             | 89.00                |   |
| In Summer             | 98.90                |   |
| Model Name            | LOGIC CODE COMBI2    |   |
| Manufacturer          | Ideal Boilers        |   |
| System Type           | Combi boiler         |   |
| Controls SAP Code     | 2110                 |   |
| Delayed Start Stat    | Yes                  |   |
| Burner Control        | Modulating           |   |
| HETAS approved System | No                   |   |
| Oil Pump Inside       | No                   |   |
| FI Case               | 0.00                 |   |
| Flue Type             | Balanced             |   |
| Fan Assisted Flue     | Yes                  |   |
| Is MHS Pumped         | Pump in heated space |   |
| Heating Pump Age      | 2013 or later        |   |
| Heat Emitter          | Radiators            |   |
| Flow Temperature      | Unknown              |   |
| Boiler Interlock      | Yes                  |   |
| Combi boiler type     | Standard Combi       |   |
| Combi keep hot type   | None                 |   |

|                     |      |
|---------------------|------|
| 25.0 Main Heating 2 | None |
|---------------------|------|

|                    |      |
|--------------------|------|
| 26.0 Heat Networks | None |
|--------------------|------|

# Summary for Input Data

## 28.0 Water Heating

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

## 28.1 Showers

| Description | Shower Type                               | Flow Rate [l/min] | Rated Power [kW] | Connected | Connected To           |
|-------------|-------------------------------------------|-------------------|------------------|-----------|------------------------|
| Shower 1    | Combi boiler or unvented hot water system | 11.00             |                  | Yes       | Instantaneous System 1 |
| Shower 2    | Combi boiler or unvented hot water system | 11.00             |                  | No        |                        |

## 28.2 Flue Gas Heat Recovery System

|             |   |
|-------------|---|
| Database ID | 0 |
| Brand Model |   |
| Details     |   |

## 28.3 Waste Water Heat Recovery System

## 29.0 Hot Water Cylinder

|                          |      |
|--------------------------|------|
|                          | None |
| Cylinder Stat            | No   |
| Cylinder In Heated Space | No   |
| Independent Time Control | No   |
| In Airing Cupboard       | No   |

## 31.0 Thermal Store

|  |      |
|--|------|
|  | None |
|--|------|

## 32.0 Photovoltaic Unit

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

| PV Cells kWp | Orientation | Elevation | Overshading    | FGHRS | MCS Certificate | Overshading Factor | MCS Certificate Reference | Panel Manufacturer |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 2.80         | East        | 45°       | None Or Little | No    | No              | 1.00               |                           | N/a                |

## 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   | 007837 - The Macadamia - END |               | Issued on Date           | 15/09/2023 |
| Assessment Reference | As Designed - As             | Prop Type Ref | 007837 The Macadamia END |            |
| Property             | Plot , Fenay Bridge          |               |                          |            |

|                                    |          |               |       |      |       |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating                         | 92 A     | DER           | 10.47 | TER  | 10.97 |
| Environmental                      | 90 B     | % DER < TER   |       |      | 4.56  |
| CO <sub>2</sub> Emissions (t/year) | 1.18     | DFEE          | 33.79 | TFEE | 35.73 |
| Compliance Check                   | See BREL | % DFEE < TFEE |       |      | 5.43  |
| % DPER < TPER                      | 3.52     | DPER          | 55.45 | TPER | 57.47 |

|                  |                 |             |           |
|------------------|-----------------|-------------|-----------|
| Assessor Details | Mr. Dean Shores | Assessor ID | W976-0001 |
| Client           |                 |             |           |

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

|                                |                      |        |
|--------------------------------|----------------------|--------|
| Orientation                    | East                 |        |
| Property Tenture               | 1                    |        |
| 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                 | 2022                 |        |
| 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                   | N/A                  | kJ/m²K |
|                                |                      |        |
| 7.0 Electricity Tariff         | Standard             |        |
| Smart electricity meter fitted | Yes                  |        |
| Smart gas meter fitted         | Yes                  |        |

| 7.0 Measurements |                     |                      |                       |
|------------------|---------------------|----------------------|-----------------------|
|                  | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
| Basement:        | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| Ground floor:    | 17.36 m             | 37.61 m <sup>2</sup> | 2.38 m                |
| 1st Storey:      | 17.36 m             | 37.61 m <sup>2</sup> | 2.70 m                |
| 2nd Storey:      | 17.36 m             | 37.61 m <sup>2</sup> | 2.70 m                |
| 3rd Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 4th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 5th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 6th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 7th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 12.25 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls |             |                                                                                                                 |                              |                             |                             |                             |             |         |          |                       |
|--------------------|-------------|-----------------------------------------------------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
| Description        | Type        | Construction                                                                                                    | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
| External Wall      | Cavity Wall | Cavity wall; plasterboard on dabs or battens, lightweight aggregate block, filled cavity, any outside structure | 0.19                         | 110.00                      | 135.13                      | 116.85                      | 0.00        | None    | 18.28    | Enter Gross Area      |

| 9.1 Party Walls |                                 |                                                                                             |                              |                             |                        |             |         |  |  |
|-----------------|---------------------------------|---------------------------------------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|--|--|
| Description     | Type                            | Construction                                                                                | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | 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                      | 64.99                  | 0.00        | None    |  |  |

| 9.2 Internal Walls |                              |                             |                        |  |
|--------------------|------------------------------|-----------------------------|------------------------|--|
| Description        | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |  |
| Internal Wall GF   | Plasterboard on timber frame | 9.00                        | 92.01                  |  |
| Internal Wall FF   | Plasterboard on timber frame | 9.00                        | 62.15                  |  |
| Internal Wall SF   | Plasterboard on timber frame | 9.00                        | 68.85                  |  |

|                     |  |
|---------------------|--|
| 10.0 External Roofs |  |
|---------------------|--|

# Summary for Input Data



| Description   | Type                | Construction                             | U-Value<br>(W/m²K) | Kappa<br>(kJ/m²K) | Gross<br>Area(m²) | Nett<br>Area<br>(m²) | Shelter<br>Code | Shelter<br>Factor | Calculation<br>Type | Openings |
|---------------|---------------------|------------------------------------------|--------------------|-------------------|-------------------|----------------------|-----------------|-------------------|---------------------|----------|
| External Roof | External Plane Roof | Plasterboard, insulated at ceiling level | 0.10               | 9.00              | 37.61             | 37.61                | None            | 0.00              | Enter Gross Area    | 0.00     |

## 10.2 Internal Ceilings

| Description         | Storey          | Construction                                   | Area (m²) |
|---------------------|-----------------|------------------------------------------------|-----------|
| Internal Ceiling GF | Lowest occupied | Plasterboard ceiling, carpeted chipboard floor | 37.61     |
| Internal Ceiling FF | +1              | Plasterboard ceiling, carpeted chipboard floor | 37.61     |

## 11.0 Heat Loss Floors

| Description       | Type                 | Storey Index    | Construction                       | U-Value<br>(W/m²K) | Shelter Code | Shelter<br>Factor | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|----------------------|-----------------|------------------------------------|--------------------|--------------|-------------------|-------------------|-----------|
| Heatloss Floor GF | Ground Floor - Solid | Lowest occupied | Suspended concrete floor, carpeted | 0.12               | None         | 0.00              | 75.00             | 37.61     |

## 11.2 Internal Floors

| Description       | Storey Index | Construction                                   | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|--------------|------------------------------------------------|-------------------|-----------|
| Internal Floor FF |              | Plasterboard ceiling, carpeted chipboard floor | 9.00              | 37.61     |
| Internal Floor SF |              | Plasterboard ceiling, carpeted chipboard floor | 9.00              | 37.61     |

## 12.0 Opening Types

| Description | Data Source               | Type       | Glazing                | Glazing<br>Gap | Filling<br>Type | G-value | Frame<br>Type | Frame<br>Factor | U Value<br>(W/m²K) |
|-------------|---------------------------|------------|------------------------|----------------|-----------------|---------|---------------|-----------------|--------------------|
| Windows     | BFRC, BSI or CERTASS data | Window     | Double Low-E Soft 0.05 |                | Air Filled      | 0.52    | Wood          | 1.00            | 1.22               |
| Doors       | Manufacturer              | Solid Door |                        |                | Air Filled      | 0.00    | Wood          | 0.70            | 1.20               |
| Patio Doors | BFRC, BSI or CERTASS data | Window     | Double Low-E Soft 0.05 |                | Air Filled      | 0.31    | Wood          | 1.00            | 1.30               |

## 13.0 Openings

| Name             | Opening Type | Location      | Orientation | Area (m²) | Pitch |
|------------------|--------------|---------------|-------------|-----------|-------|
| Front Door       | Doors        | External Wall | East        | 2.15      | 0     |
| Front Window     | Windows      | External Wall | East        | 4.32      | 0     |
| LHS Window       | Windows      | External Wall | South       | 1.54      | 0     |
| Rear Windows     | Windows      | External Wall | West        | 4.58      | 0     |
| Rear Patio Doors | Patio Doors  | External Wall | West        | 5.69      | 0     |

## 14.0 Conservatory

## 15.0 Draught Proofing

 %

## 16.0 Draught Lobby

## 17.0 Thermal Bridging

### 17.1 List of Bridges

| Bridge Type                                          | Source Type              | Length | Psi  | Adjusted | Reference:       | Imported |
|------------------------------------------------------|--------------------------|--------|------|----------|------------------|----------|
| E1 Steel lintel with perforated steel base plate     | Independently assessed   | 12.60  | 0.17 | 0.17     | CBA              | No       |
| E3 Sill                                              | Independently assessed   | 8.87   | 0.01 | 0.01     | CBA              | No       |
| E4 Jamb                                              | Independently assessed   | 30.00  | 0.01 | 0.01     | CBA              | No       |
| E5 Ground floor (normal)                             | Independently assessed   | 17.36  | 0.07 | 0.07     | CBA              | No       |
| E6 Intermediate floor within a dwelling              | Independently assessed   | 34.71  | 0.01 | 0.01     | CBA              | No       |
| E10 Eaves (insulation at ceiling level)              | Independently assessed   | 9.01   | 0.06 | 0.06     | CBA              | No       |
| E12 Gable (insulation at ceiling level)              | Independently assessed   | 8.35   | 0.08 | 0.08     | CBA              | No       |
| E16 Corner (normal)                                  | Independently assessed   | 15.57  | 0.05 | 0.05     | CBA              | No       |
| E18 Party wall between dwellings                     | Independently assessed   | 15.57  | 0.03 | 0.03     | CBA              | No       |
| P1 Party wall - Ground floor                         | Non Gov Approved Schemes | 8.35   | 0.12 | 0.12     | Besblock Example | No       |
| P4 Party wall - Roof (insulation at ceiling level)   | Independently assessed   | 8.35   | 0.08 | 0.08     | CBA              | No       |
| P2 Party wall - Intermediate floor within a dwelling | Table K1 - Default       | 16.70  | 0.00 | 0.00     |                  | No       |

|         |                                   |       |
|---------|-----------------------------------|-------|
| Y-value | <input type="text" value="0.00"/> | W/m²K |
|---------|-----------------------------------|-------|

## 18.0 Pressure Testing

|                           |                                          |                   |
|---------------------------|------------------------------------------|-------------------|
| Designed AP <sub>50</sub> | <input type="text" value="4.00"/>        | m³/(h.m²) @ 50 Pa |
| Property Tested?          | <input type="text" value="Yes"/>         |                   |
| Test Method               | <input type="text" value="Blower Door"/> |                   |
| As Built AP <sub>50</sub> | <input type="text" value="0.10"/>        | m³/(h.m²) @ 50 Pa |

## 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="500787"/>                                         |
| Duct Type                             | <input type="text" value="Flexible"/>                                       |



# Summary for Input Data

|                                              |      |
|----------------------------------------------|------|
| MVHR Efficiency                              | 0.00 |
| Wet Rooms                                    | 4    |
| SFP from Installer Commissioning Certificate | No   |

## 19.1 Mechanical extract ventilation - Decentralised

| SFP  | Fan/Room Type                      | Count |
|------|------------------------------------|-------|
| 0.13 | In Room Fan<br>Kitchen             | 0     |
| 0.11 | In Room Fan Other<br>Wet Room      | 0     |
| 0.00 | In Duct Fan Kitchen                | 0     |
| 0.00 | In Duct Fan Other<br>Wet Room      | 0     |
| 0.10 | Through Wall Fan<br>Kitchen        | 1     |
| 0.10 | Through Wall Fan<br>Other Wet Room | 3     |

## 20.0 Fans, Open Fireplaces, Flues

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

## 22.0 Lighting

| No Fixed Lighting | No       |       |          |       |  |
|-------------------|----------|-------|----------|-------|--|
| Name              | Efficacy | Power | Capacity | Count |  |
| Downlights        | 80.00    | 28    | 2240     | 14    |  |

## 24.0 Main Heating 1

|                       |                      |   |
|-----------------------|----------------------|---|
| Database              |                      |   |
| Percentage of Heat    | 100.00               | % |
| Database Ref. No.     | 19003                |   |
| Fuel Type             | Mains gas            |   |
| SAP Code              | 0                    |   |
| In Winter             | 89.00                |   |
| In Summer             | 98.90                |   |
| Model Name            | LOGIC CODE COMBI2    |   |
| Manufacturer          | Ideal Boilers        |   |
| System Type           | Combi boiler         |   |
| Controls SAP Code     | 2110                 |   |
| Delayed Start Stat    | Yes                  |   |
| Burner Control        | Modulating           |   |
| HETAS approved System | No                   |   |
| Oil Pump Inside       | No                   |   |
| FI Case               | 0.00                 |   |
| Flue Type             | Balanced             |   |
| Fan Assisted Flue     | Yes                  |   |
| Is MHS Pumped         | Pump in heated space |   |
| Heating Pump Age      | 2013 or later        |   |
| Heat Emitter          | Radiators            |   |
| Flow Temperature      | Unknown              |   |
| Boiler Interlock      | Yes                  |   |
| Combi boiler type     | Standard Combi       |   |
| Combi keep hot type   | None                 |   |

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

# Summary for Input Data

Heat source 4 None  
Heat source 5 None

## 28.0 Water Heating

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

## 28.1 Showers

| Description | Shower Type                               | Flow Rate [l/min] | Rated Power [kW] | Connected | Connected To           |
|-------------|-------------------------------------------|-------------------|------------------|-----------|------------------------|
| Shower 1    | Combi boiler or unvented hot water system | 11.00             |                  | Yes       | Instantaneous System 1 |

## 28.2 Flue Gas Heat Recovery System

|             |   |
|-------------|---|
| Database ID | 0 |
| Brand Model |   |
| Details     |   |

## 28.3 Waste Water Heat Recovery System

## 29.0 Hot Water Cylinder

|                          |      |
|--------------------------|------|
|                          | None |
| Cylinder Stat            | No   |
| Cylinder In Heated Space | No   |
| Independent Time Control | No   |
| In Airing Cupboard       | No   |

## 31.0 Thermal Store

|  |      |
|--|------|
|  | None |
|--|------|

## 32.0 Photovoltaic Unit

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

| PV Cells kWp | Orientation | Elevation | Overshading    | FGHRS | MCS Certificate | Overshading Factor | MCS Certificate Reference | Panel Manufacturer |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 2.00         | East        | 30°       | None Or Little | No    | No              | 1.00               |                           | N/a                |

## 34.0 Small-scale Hydro

|                                           |        |     |     |     |     |     |     |     |     |  |          |
|-------------------------------------------|--------|-----|-----|-----|-----|-----|-----|-----|-----|--|----------|
| Electricity Generated                     | 0.00   |     |     |     |     |     |     |     |     |  | kWh/Year |
| Apportioned                               | 0.00   |     |     |     |     |     |     |     |     |  |          |
| Connected to dwelling's electricity meter | Yes    |     |     |     |     |     |     |     |     |  |          |
| Electricity Generation                    | Annual |     |     |     |     |     |     |     |     |  |          |
| Jan                                       | Feb    | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct |  |          |

## Recommendations

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

# Summary for Input Data

|                      |                           |               |                       |            |
|----------------------|---------------------------|---------------|-----------------------|------------|
| Property Reference   | 007837 - The Manuka - End |               | Issued on Date        | 15/09/2023 |
| Assessment Reference | As Designed - As          | Prop Type Ref | 007837 The Manuka END |            |
| Property             | Plot , Fenay Bridge       |               |                       |            |

|                                    |          |               |       |      |       |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating                         | 93 A     | DER           | 9.87  | TER  | 10.49 |
| Environmental                      | 91 B     | % DER < TER   |       |      | 5.91  |
| CO <sub>2</sub> Emissions (t/year) | 1.18     | DFEE          | 33.88 | TFEE | 36.05 |
| Compliance Check                   | See BREL | % DFEE < TFEE |       |      | 6.01  |
| % DPER < TPER                      | 5.22     | DPER          | 51.98 | TPER | 54.84 |

|                  |                 |             |           |
|------------------|-----------------|-------------|-----------|
| Assessor Details | Mr. Dean Shores | Assessor ID | W976-0001 |
| Client           |                 |             |           |

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

|                                |                      |        |
|--------------------------------|----------------------|--------|
| Orientation                    | East                 |        |
| Property Tenture               | 1                    |        |
| 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                 | 2022                 |        |
| 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                   | N/A                  | kJ/m²K |
|                                |                      |        |
| 7.0 Electricity Tariff         | Standard             |        |
| Smart electricity meter fitted | Yes                  |        |
| Smart gas meter fitted         | Yes                  |        |

| 7.0 Measurements | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------------|----------------------|-----------------------|
| Basement:        | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| Ground floor:    | 19.83 m             | 39.44 m <sup>2</sup> | 2.72 m                |
| 1st Storey:      | 19.83 m             | 41.81 m <sup>2</sup> | 2.36 m                |
| 2nd Storey:      | 17.36 m             | 37.61 m <sup>2</sup> | 2.70 m                |
| 3rd Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 4th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 5th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 6th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 7th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 11.49 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls | Description   | Type        | Construction                                                                        | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
|--------------------|---------------|-------------|-------------------------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
|                    | External Wall | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.19                         | 60.00                       | 147.71                      | 118.96                      | 0.00        | None    | 28.75    | Enter Gross Area      |

| 9.1 Party Walls | Description | Type                            | Construction                                                                    | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
|-----------------|-------------|---------------------------------|---------------------------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
|                 | Party Wall  | Filled Cavity with Edge Sealing | Plasterboard on dabs mounted on cement render on both sides, AAC blocks, cavity | 0.00                         | 45.00                       | 64.99                  | 0.00        | None    |

| 9.2 Internal Walls | Description      | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
|--------------------|------------------|------------------------------|-----------------------------|------------------------|
|                    | Internal Wall GF | Plasterboard on timber frame | 9.00                        | 81.87                  |
|                    | Internal Wall FF | Plasterboard on timber frame | 9.00                        | 76.79                  |
|                    | Internal Wall SF | Plasterboard on timber frame | 9.00                        | 91.26                  |

| 10.0 External Roofs |  |
|---------------------|--|
|---------------------|--|

# Summary for Input Data

| Description   | Type                | Construction                             | U-Value<br>(W/m²K) | Kappa<br>(kJ/m²K) | Gross<br>Area(m²) | Nett<br>Area<br>(m²) | Shelter<br>Code | Shelter<br>Factor | Calculation<br>Type | Openings |
|---------------|---------------------|------------------------------------------|--------------------|-------------------|-------------------|----------------------|-----------------|-------------------|---------------------|----------|
| External Roof | External Plane Roof | Plasterboard, insulated at ceiling level | 0.10               | 9.00              | 37.61             | 37.61                | None            | 0.00              | Enter Gross Area    | 0.00     |

### 10.2 Internal Ceilings

| Description         | Storey          | Construction                                   | Area (m²) |
|---------------------|-----------------|------------------------------------------------|-----------|
| Internal Ceiling GF | Lowest occupied | Plasterboard ceiling, carpeted chipboard floor | 39.44     |
| Internal Ceiling FF | +1              | Plasterboard ceiling, carpeted chipboard floor | 37.61     |

### 11.0 Heat Loss Floors

| Description       | Type                 | Storey Index    | Construction                       | U-Value<br>(W/m²K) | Shelter Code | Shelter Factor | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|----------------------|-----------------|------------------------------------|--------------------|--------------|----------------|-------------------|-----------|
| Heatloss Floor GF | Ground Floor - Solid | Lowest occupied | Suspended concrete floor, carpeted | 0.12               | None         | 0.00           | 75.00             | 39.44     |

### 11.2 Internal Floors

| Description       | Storey Index | Construction                                   | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|--------------|------------------------------------------------|-------------------|-----------|
| Internal Floor FF |              | Plasterboard ceiling, carpeted chipboard floor | 9.00              | 41.81     |
| Internal Floor SF |              | Plasterboard ceiling, carpeted chipboard floor | 9.00              | 37.61     |

### 12.0 Opening Types

| Description | Data Source               | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value<br>(W/m²K) |
|-------------|---------------------------|------------|------------------------|-------------|--------------|---------|------------|--------------|--------------------|
| Windows     | BFRC, BSI or CERTASS data | Window     | Double Low-E Soft 0.05 |             | Air Filled   | 0.52    | Wood       | 1.00         | 1.22               |
| Doors       | Manufacturer              | Solid Door |                        |             | Air Filled   | 0.00    | Wood       | 0.70         | 1.20               |
| Patio Doors | BFRC, BSI or CERTASS data | Window     | Double Low-E Soft 0.05 |             | Air Filled   | 0.31    | Wood       | 1.00         | 1.30               |

### 13.0 Openings

| Name             | Opening Type | Location      | Orientation | Area (m²) | Pitch |
|------------------|--------------|---------------|-------------|-----------|-------|
| Front Door       | Doors        | External Wall | South       | 2.15      | 0     |
| LHS Windows      | Windows      | External Wall | South       | 11.29     | 0     |
| Front Windows    | Windows      | External Wall | East        | 6.02      | 0     |
| Rear Windows     | Windows      | External Wall | West        | 3.60      | 0     |
| Rear Patio Doors | Patio Doors  | External Wall | West        | 5.69      | 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                 | Independently assessed   | 18.73  | 0.17 | 0.17     | CBA              | No       |
| E3 Sill                                                          | Independently assessed   | 15.00  | 0.01 | 0.01     | CBA              | No       |
| E4 Jamb                                                          | Independently assessed   | 49.06  | 0.01 | 0.01     | CBA              | No       |
| E5 Ground floor (normal)                                         | Independently assessed   | 19.83  | 0.07 | 0.07     | CBA              | No       |
| E6 Intermediate floor within a dwelling                          | Independently assessed   | 37.19  | 0.01 | 0.01     | CBA              | No       |
| E10 Eaves (insulation at ceiling level)                          | Independently assessed   | 16.69  | 0.06 | 0.06     | CBA              | No       |
| E12 Gable (insulation at ceiling level)                          | Independently assessed   | 9.01   | 0.08 | 0.08     | CBA              | No       |
| E16 Corner (normal)                                              | Independently assessed   | 25.47  | 0.05 | 0.05     | CBA              | No       |
| E18 Party wall between dwellings                                 | Independently assessed   | 32.27  | 0.03 | 0.03     | CBA              | No       |
| P1 Party wall - Ground floor                                     | Non Gov Approved Schemes | 8.35   | 0.12 | 0.12     | Besblock Example | No       |
| P2 Party wall - Intermediate floor within a dwelling             | Table K1 - Default       | 8.35   | 0.00 | 0.00     |                  | No       |
| E17 Corner (inverted – internal area greater than external area) | Independently assessed   | 10.17  | 0.08 | 0.08     |                  | No       |

Y-value

0.00

 W/m²K
  

### 18.0 Pressure Testing

Yes

Designed AP<sub>50</sub>

4.00

 m³/(h.m²) @ 50 Pa

Property Tested?

Yes

Test Method

Blower Door

As Built AP<sub>50</sub>

0.10

 m³/(h.m²) @ 50 Pa
  

### 19.0 Mechanical Ventilation

#### Mechanical Ventilation

Mechanical Ventilation System Present

Yes

Approved Installation

Yes

Mechanical Ventilation data Type

Database

Type

Mechanical extract ventilation - decentralised

MV Reference Number

500787

# Summary for Input Data

|                                              |          |
|----------------------------------------------|----------|
| Duct Type                                    | Flexible |
| MVHR Efficiency                              | 0.00     |
| Wet Rooms                                    | 4        |
| SFP from Installer Commissioning Certificate | No       |

## 19.1 Mechanical extract ventilation - Decentralised

| SFP  | Fan/Room Type       | Count |
|------|---------------------|-------|
| 0.13 | 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            |       |
| 0.10 | Through Wall Fan    | 1     |
|      | Kitchen             |       |
| 0.10 | Through Wall Fan    | 4     |
|      | Other Wet Room      |       |

## 20.0 Fans, Open Fireplaces, Flues

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

## 22.0 Lighting

| No Fixed Lighting | No       |       |          |       |  |
|-------------------|----------|-------|----------|-------|--|
| Name              | Efficacy | Power | Capacity | Count |  |
| Downlights        | 80.00    | 28    | 2240     | 15    |  |

## 24.0 Main Heating 1

|                       |                      |   |
|-----------------------|----------------------|---|
| Database              |                      |   |
| Percentage of Heat    | 100.00               | % |
| Database Ref. No.     | 19003                |   |
| Fuel Type             | Mains gas            |   |
| SAP Code              | 0                    |   |
| In Winter             | 89.00                |   |
| In Summer             | 98.90                |   |
| Model Name            | LOGIC CODE COMBI2    |   |
| Manufacturer          | Ideal Boilers        |   |
| System Type           | Combi boiler         |   |
| Controls SAP Code     | 2110                 |   |
| Delayed Start Stat    | Yes                  |   |
| Burner Control        | Modulating           |   |
| HETAS approved System | No                   |   |
| Oil Pump Inside       | No                   |   |
| FI Case               | 0.00                 |   |
| Flue Type             | Balanced             |   |
| Fan Assisted Flue     | Yes                  |   |
| Is MHS Pumped         | Pump in heated space |   |
| Heating Pump Age      | 2013 or later        |   |
| Heat Emitter          | Radiators            |   |
| Flow Temperature      | Unknown              |   |
| Boiler Interlock      | Yes                  |   |
| Combi boiler type     | Standard Combi       |   |
| Combi keep hot type   | None                 |   |

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

# Summary for Input Data

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

## 28.0 Water Heating

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

## 28.1 Showers

| Description | Shower Type                               | Flow Rate [l/min] | Rated Power [kW] | Connected | Connected To           |
|-------------|-------------------------------------------|-------------------|------------------|-----------|------------------------|
| Shower 1    | Combi boiler or unvented hot water system | 11.00             |                  | Yes       | Instantaneous System 1 |

## 28.2 Flue Gas Heat Recovery System

|             |   |
|-------------|---|
| Database ID | 0 |
| Brand Model |   |
| Details     |   |

## 28.3 Waste Water Heat Recovery System

## 29.0 Hot Water Cylinder

|                          |      |
|--------------------------|------|
|                          | None |
| Cylinder Stat            | No   |
| Cylinder In Heated Space | No   |
| Independent Time Control | No   |
| In Airing Cupboard       | No   |

## 31.0 Thermal Store

|  |      |
|--|------|
|  | None |
|--|------|

## 32.0 Photovoltaic Unit

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

| PV Cells kWp | Orientation | Elevation | Overshading    | FGHRS | MCS Certificate | Overshading Factor | MCS Certificate Reference | Panel Manufacturer |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 2.40         | East        | 30°       | None Or Little | No    | No              | 1.00               |                           | N/a                |

## 34.0 Small-scale Hydro

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

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

## Recommendations

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

# Summary for Input Data

|                      |                             |               |                         |            |
|----------------------|-----------------------------|---------------|-------------------------|------------|
| Property Reference   | 007837 - The Rosemary - DET |               | Issued on Date          | 15/09/2023 |
| Assessment Reference | As Designed - As            | Prop Type Ref | 007837 The Rosemary DET |            |
| Property             | Plot , Fenay Bridge         |               |                         |            |

|                                    |          |               |       |      |       |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating                         | 94 A     | DER           | 9.75  | TER  | 9.89  |
| Environmental                      | 91 B     | % DER < TER   |       |      | 1.42  |
| CO <sub>2</sub> Emissions (t/year) | 1.25     | DFEE          | 37.01 | TFEE | 39.20 |
| Compliance Check                   | See BREL | % DFEE < TFEE |       |      | 5.60  |
| % DPER < TPER                      | 0.75     | DPER          | 51.26 | TPER | 51.65 |

|                  |                 |             |           |
|------------------|-----------------|-------------|-----------|
| Assessor Details | Mr. Dean Shores | Assessor ID | W976-0001 |
| Client           |                 |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | East                |        |
| Property Tenture               | 1                   |        |
| 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                 | 2022                |        |
| 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                   | N/A                 | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | Yes                 |        |

| 7.0 Measurements |                     |                      |                       |
|------------------|---------------------|----------------------|-----------------------|
|                  | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
| Basement:        | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| Ground floor:    | 31.90 m             | 63.44 m <sup>2</sup> | 2.38 m                |
| 1st Storey:      | 31.90 m             | 63.44 m <sup>2</sup> | 2.70 m                |
| 2nd Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 3rd Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 4th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 5th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 6th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 7th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 12.52 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls |             |                                                                                     |                              |                             |                             |                             |             |         |          |                       |
|--------------------|-------------|-------------------------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
| Description        | Type        | Construction                                                                        | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
| External Wall      | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.19                         | 60.00                       | 162.05                      | 137.53                      | 0.00        | None    | 24.52    | Enter Gross Area      |

| 9.1 Party Walls |                                 |                                                                                 |                              |                             |                        |             |         |  |  |
|-----------------|---------------------------------|---------------------------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|--|--|
| Description     | Type                            | Construction                                                                    | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |  |  |
| Party Wall      | Filled Cavity with Edge Sealing | Plasterboard on dabs mounted on cement render on both sides, AAC blocks, cavity | 0.00                         | 45.00                       | 39.55                  | 0.00        | None    |  |  |

| 9.2 Internal Walls |                              |  |  |  |  |                             |                        |  |  |
|--------------------|------------------------------|--|--|--|--|-----------------------------|------------------------|--|--|
| Description        | Construction                 |  |  |  |  | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |  |  |
| Internal Wall GF   | Plasterboard on timber frame |  |  |  |  | 9.00                        | 97.32                  |  |  |
| Internal Wall FF   | Plasterboard on timber frame |  |  |  |  | 9.00                        | 140.24                 |  |  |

## 10.0 External Roofs



# Summary for Input Data



| Description   | Type                | Construction                             | U-Value<br>(W/m²K) | Kappa<br>(kJ/m²K) | Gross<br>Area(m²) | Nett<br>Area<br>(m²) | Shelter<br>Code | Shelter<br>Factor | Calculation<br>Type | Openings |
|---------------|---------------------|------------------------------------------|--------------------|-------------------|-------------------|----------------------|-----------------|-------------------|---------------------|----------|
| External Roof | External Plane Roof | Plasterboard, insulated at ceiling level | 0.10               | 9.00              | 63.44             | 63.44                | None            | 0.00              | Enter Gross Area    | 0.00     |

## 10.2 Internal Ceilings

| Description         | Storey          | Construction                                   | Area (m²) |
|---------------------|-----------------|------------------------------------------------|-----------|
| Internal Ceiling GF | Lowest occupied | Plasterboard ceiling, carpeted chipboard floor | 63.44     |

## 11.0 Heat Loss Floors

| Description       | Type                 | Storey Index    | Construction                       | U-Value<br>(W/m²K) | Shelter Code | Shelter Factor | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|----------------------|-----------------|------------------------------------|--------------------|--------------|----------------|-------------------|-----------|
| Heatloss Floor GF | Ground Floor - Solid | Lowest occupied | Suspended concrete floor, carpeted | 0.12               | None         | 0.00           | 75.00             | 63.44     |

## 11.2 Internal Floors

| Description       | Storey Index | Construction                                   | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|--------------|------------------------------------------------|-------------------|-----------|
| Internal Floor FF |              | Plasterboard ceiling, carpeted chipboard floor | 9.00              | 63.44     |

## 12.0 Opening Types

| Description      | Data Source               | Type             | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value<br>(W/m²K) |
|------------------|---------------------------|------------------|------------------------|-------------|--------------|---------|------------|--------------|--------------------|
| Windows          | BFRC, BSI or CERTASS data | Window           | Double Low-E Soft 0.05 |             | Air Filled   | 0.52    | Wood       | 1.00         | 1.22               |
| Doors            | Manufacturer              | Solid Door       |                        |             | Air Filled   | 0.00    | Wood       | 0.70         | 1.20               |
| Patio Doors      | BFRC, BSI or CERTASS data | Window           | Double Low-E Soft 0.05 |             | Air Filled   | 0.31    | Wood       | 1.00         | 1.30               |
| Half Glazed Door | Manufacturer              | Half Glazed Door | Double Low-E Soft 0.05 |             | Air Filled   | 0.63    | Wood       | 0.70         | 1.30               |

## 13.0 Openings

| Name             | Opening Type | Location      | Orientation | Area (m²) | Pitch |
|------------------|--------------|---------------|-------------|-----------|-------|
| Front Door       | Doors        | External Wall | East        | 2.15      | 0     |
| Front Window     | Windows      | External Wall | East        | 10.46     | 0     |
| Rear Windows     | Windows      | External Wall | West        | 4.68      | 0     |
| Rear Patio Doors | Patio Doors  | External Wall | West        | 5.69      | 0     |
| LHS Windows      | Windows      | External Wall | South       | 0.77      | 0     |
| RHS Windows      | Windows      | External Wall | North       | 0.77      | 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 | Independently assessed | 15.66  | 0.17 | 0.17     | CBA        | No       |
| E3 Sill                                          | Independently assessed | 11.59  | 0.01 | 0.01     | CBA        | No       |
| E4 Jamb                                          | Independently assessed | 35.20  | 0.01 | 0.01     | CBA        | No       |
| E5 Ground floor (normal)                         | Independently assessed | 31.90  | 0.07 | 0.07     | CBA        | No       |
| E6 Intermediate floor within a dwelling          | Independently assessed | 31.90  | 0.01 | 0.01     | CBA        | No       |
| E10 Eaves (insulation at ceiling level)          | Independently assessed | 15.16  | 0.06 | 0.06     | CBA        | No       |
| E12 Gable (insulation at ceiling level)          | Independently assessed | 16.74  | 0.08 | 0.08     | CBA        | No       |
| E16 Corner (normal)                              | Independently assessed | 20.32  | 0.05 | 0.05     | CBA        | No       |

Y-value  W/m²K

## 18.0 Pressure Testing

|                           |                                          |                   |
|---------------------------|------------------------------------------|-------------------|
| Designed AP <sub>50</sub> | <input type="text" value="4.00"/>        | m³/(h.m²) @ 50 Pa |
| Property Tested?          | <input type="text" value="Yes"/>         |                   |
| Test Method               | <input type="text" value="Blower Door"/> |                   |
| As Built AP <sub>50</sub> | <input type="text" value="0.10"/>        | m³/(h.m²) @ 50 Pa |

## 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="500787"/>                                         |
| Duct Type                             | <input type="text" value="Flexible"/>                                       |
| MVHR Efficiency                       | <input type="text" value="0.00"/>                                           |
| Wet Rooms                             | <input type="text" value="4"/>                                              |

# Summary for Input Data

SFP from Installer Commissioning Certificate

No

## 19.1 Mechanical extract ventilation - Decentralised

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

## 20.0 Fans, Open Fireplaces, Flues

### 21.0 Fixed Cooling System

No

### 22.0 Lighting

No Fixed Lighting

No

| Name       | Efficacy | Power | Capacity | Count |
|------------|----------|-------|----------|-------|
| Downlights | 80.00    | 28    | 2240     | 18    |

### 24.0 Main Heating 1

|                       |                      |
|-----------------------|----------------------|
| Database              |                      |
| Percentage of Heat    | 100.00 %             |
| Database Ref. No.     | 19003                |
| Fuel Type             | Mains gas            |
| SAP Code              | 0                    |
| In Winter             | 89.00                |
| In Summer             | 98.90                |
| Model Name            | LOGIC CODE COMBI2    |
| Manufacturer          | Ideal Boilers        |
| System Type           | Combi boiler         |
| Controls SAP Code     | 2110                 |
| Delayed Start Stat    | Yes                  |
| Burner Control        | Modulating           |
| HETAS approved System | No                   |
| Oil Pump Inside       | No                   |
| FI Case               | 0.00                 |
| Flue Type             | Balanced             |
| Fan Assisted Flue     | Yes                  |
| Is MHS Pumped         | Pump in heated space |
| Heating Pump Age      | 2013 or later        |
| Heat Emitter          | Radiators            |
| Flow Temperature      | Unknown              |
| Boiler Interlock      | Yes                  |
| Combi boiler type     | Standard Combi       |
| Combi keep hot type   | None                 |

### 25.0 Main Heating 2

None

### 26.0 Heat Networks

None

### 28.0 Water Heating

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

# Summary for Input Data

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

## 28.1 Showers

| Description | Shower Type                               | Flow Rate [l/min] | Rated Power [kW] | Connected | Connected To           |
|-------------|-------------------------------------------|-------------------|------------------|-----------|------------------------|
| Shower 1    | Combi boiler or unvented hot water system | 11.00             |                  | Yes       | Instantaneous System 1 |
| Shower 2    | Combi boiler or unvented hot water system | 11.00             |                  | No        |                        |

## 28.2 Flue Gas Heat Recovery System

|             |   |
|-------------|---|
| Database ID | 0 |
| Brand Model |   |
| Details     |   |

## 28.3 Waste Water Heat Recovery System

## 29.0 Hot Water Cylinder

|                          |    |
|--------------------------|----|
| Cylinder Stat            | No |
| Cylinder In Heated Space | No |
| Independent Time Control | No |
| In Airing Cupboard       | No |

## 31.0 Thermal Store

None

## 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 |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 3.60         | East        | 45°       | None Or Little | No    | No              | 1.00               |                           | N/a                |

## 34.0 Small-scale Hydro

|                                           |        |
|-------------------------------------------|--------|
| 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   | 007837 - The Sage - Det |               | Issued on Date      | 15/09/2023 |
| Assessment Reference | As Designed - As        | Prop Type Ref | 007837 The Sage DET |            |
| Property             | Plot , Fenay Bridge     |               |                     |            |

|                                    |          |               |       |      |       |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating                         | 94 A     | DER           | 10.14 | TER  | 10.40 |
| Environmental                      | 90 B     | % DER < TER   |       |      | 2.50  |
| CO <sub>2</sub> Emissions (t/year) | 1.32     | DFEE          | 39.69 | TFEE | 41.86 |
| Compliance Check                   | See BREL | % DFEE < TFEE |       |      | 5.18  |
| % DPER < TPER                      | 1.92     | DPER          | 53.34 | TPER | 54.38 |

|                  |                 |             |           |
|------------------|-----------------|-------------|-----------|
| Assessor Details | Mr. Dean Shores | Assessor ID | W976-0001 |
| Client           |                 |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | East                |        |
| Property Tenture               | 1                   |        |
| 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                 | 2022                |        |
| 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                   | N/A                 | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | Yes                 |        |

| 7.0 Measurements |                     |                      |                       |
|------------------|---------------------|----------------------|-----------------------|
|                  | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
| Basement:        | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| Ground floor:    | 36.32 m             | 64.04 m <sup>2</sup> | 2.38 m                |
| 1st Storey:      | 36.32 m             | 64.04 m <sup>2</sup> | 2.70 m                |
| 2nd Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 3rd Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 4th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 5th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 6th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 7th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 11.59 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls |             |                                                                                     |                              |                             |                             |                             |             |         |          |                       |
|--------------------|-------------|-------------------------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
| Description        | Type        | Construction                                                                        | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
| External Wall      | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.19                         | 60.00                       | 184.66                      | 156.23                      | 0.00        | None    | 28.43    | Enter Gross Area      |

| 9.1 Party Walls |                                 |                                                                                 |                              |                             |                        |             |         |  |  |
|-----------------|---------------------------------|---------------------------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|--|--|
| Description     | Type                            | Construction                                                                    | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |  |  |
| Party Wall      | Filled Cavity with Edge Sealing | Plasterboard on dabs mounted on cement render on both sides, AAC blocks, cavity | 0.00                         | 45.00                       | 39.55                  | 0.00        | None    |  |  |

| 9.2 Internal Walls |                              |                             |                        |  |
|--------------------|------------------------------|-----------------------------|------------------------|--|
| Description        | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |  |
| Internal Wall GF   | Plasterboard on timber frame | 9.00                        | 100.57                 |  |
| Internal Wall FF   | Plasterboard on timber frame | 9.00                        | 164.86                 |  |

## 10.0 External Roofs

# Summary for Input Data

| Description   | Type                | Construction                             | U-Value<br>(W/m²K) | Kappa<br>(kJ/m²K) | Gross<br>Area(m²) | Nett<br>Area<br>(m²) | Shelter<br>Code | Shelter<br>Factor | Calculation<br>Type | Openings |
|---------------|---------------------|------------------------------------------|--------------------|-------------------|-------------------|----------------------|-----------------|-------------------|---------------------|----------|
| External Roof | External Plane Roof | Plasterboard, insulated at ceiling level | 0.10               | 9.00              | 64.04             | 64.04                | None            | 0.00              | Enter Gross Area    | 0.00     |

## 10.2 Internal Ceilings

| Description         | Storey          | Construction                                   | Area (m²) |
|---------------------|-----------------|------------------------------------------------|-----------|
| Internal Ceiling GF | Lowest occupied | Plasterboard ceiling, carpeted chipboard floor | 64.04     |

## 11.0 Heat Loss Floors

| Description       | Type                 | Storey Index    | Construction                       | U-Value<br>(W/m²K) | Shelter Code | Shelter Factor | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|----------------------|-----------------|------------------------------------|--------------------|--------------|----------------|-------------------|-----------|
| Heatloss Floor GF | Ground Floor - Solid | Lowest occupied | Suspended concrete floor, carpeted | 0.12               | None         | 0.00           | 75.00             | 64.04     |

## 11.2 Internal Floors

| Description       | Storey Index | Construction                                   | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|--------------|------------------------------------------------|-------------------|-----------|
| Internal Floor FF |              | Plasterboard ceiling, carpeted chipboard floor | 9.00              | 64.04     |

## 12.0 Opening Types

| Description      | Data Source               | Type             | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value<br>(W/m²K) |
|------------------|---------------------------|------------------|------------------------|-------------|--------------|---------|------------|--------------|--------------------|
| Windows          | BFRC, BSI or CERTASS data | Window           | Double Low-E Soft 0.05 |             | Air Filled   | 0.52    | Wood       | 1.00         | 1.22               |
| Doors            | Manufacturer              | Solid Door       |                        |             | Air Filled   | 0.00    | Wood       | 0.70         | 1.20               |
| Patio Doors      | BFRC, BSI or CERTASS data | Window           | Double Low-E Soft 0.05 |             | Air Filled   | 0.31    | Wood       | 1.00         | 1.30               |
| Half Glazed Door | Manufacturer              | Half Glazed Door | Double Low-E Soft 0.05 |             | Air Filled   | 0.63    | Wood       | 0.70         | 1.20               |

## 13.0 Openings

| Name             | Opening Type     | Location      | Orientation | Area (m²) | Pitch |
|------------------|------------------|---------------|-------------|-----------|-------|
| Front Door       | Doors            | External Wall | East        | 2.15      | 0     |
| Front Window     | Windows          | External Wall | East        | 11.12     | 0     |
| Rear Windows     | Windows          | External Wall | West        | 4.39      | 0     |
| Rear Patio Doors | Patio Doors      | External Wall | West        | 5.69      | 0     |
| Rear Door        | Half Glazed Door | External Wall | West        | 2.15      | 0     |
| LHS Window       | Windows          | External Wall | South       | 2.23      | 0     |
| RHS Window       | Windows          | External Wall | North       | 0.70      | 0     |

## 14.0 Conservatory

## 15.0 Draught Proofing

 %

## 16.0 Draught Lobby

## 17.0 Thermal Bridging

## 17.1 List of Bridges

| Bridge Type                                                      | Source Type            | Length | Psi  | Adjusted Reference: | Imported |
|------------------------------------------------------------------|------------------------|--------|------|---------------------|----------|
| E1 Steel lintel with perforated steel base plate                 | Independently assessed | 18.27  | 0.17 | 0.17 CBA            | No       |
| E3 Sill                                                          | Independently assessed | 13.23  | 0.01 | 0.01 CBA            | No       |
| E4 Jamb                                                          | Independently assessed | 45.86  | 0.01 | 0.01 CBA            | No       |
| E5 Ground floor (normal)                                         | Independently assessed | 36.32  | 0.07 | 0.07 CBA            | No       |
| E6 Intermediate floor within a dwelling                          | Independently assessed | 36.32  | 0.01 | 0.01 CBA            | No       |
| E10 Eaves (insulation at ceiling level)                          | Independently assessed | 18.00  | 0.06 | 0.06 CBA            | No       |
| E12 Gable (insulation at ceiling level)                          | Independently assessed | 18.31  | 0.08 | 0.08 CBA            | No       |
| E16 Corner (normal)                                              | Independently assessed | 30.51  | 0.05 | 0.05 CBA            | No       |
| E17 Corner (inverted – internal area greater than external area) | Table K1 - Default     | 10.17  | 0.00 | 0.00                | No       |

Y-value  W/m²K

## 18.0 Pressure Testing

Designed AP<sub>50</sub>  m³/(h.m²) @ 50 Pa

Property Tested?

Test Method

As Built AP<sub>50</sub>  m³/(h.m²) @ 50 Pa

## 19.0 Mechanical Ventilation

### Mechanical Ventilation

Mechanical Ventilation System Present

Approved Installation

Mechanical Ventilation data Type

Type

MV Reference Number

Duct Type

# Summary for Input Data



|                                              |      |
|----------------------------------------------|------|
| MVHR Efficiency                              | 0.00 |
| Wet Rooms                                    | 3    |
| SFP from Installer Commissioning Certificate | No   |

## 19.1 Mechanical extract ventilation - Decentralised

| SFP  | Fan/Room Type                      | Count |
|------|------------------------------------|-------|
| 0.13 | In Room Fan<br>Kitchen             | 0     |
| 0.11 | In Room Fan Other<br>Wet Room      | 0     |
| 0.00 | In Duct Fan Kitchen                | 0     |
| 0.00 | In Duct Fan Other<br>Wet Room      | 0     |
| 0.10 | Through Wall Fan<br>Kitchen        | 1     |
| 0.10 | Through Wall Fan<br>Other Wet Room | 3     |

## 20.0 Fans, Open Fireplaces, Flues

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

## 22.0 Lighting

| No Fixed Lighting | No       |       |          |       |  |
|-------------------|----------|-------|----------|-------|--|
| Name              | Efficacy | Power | Capacity | Count |  |
| Downlights        | 80.00    | 28    | 2240     | 16    |  |

## 24.0 Main Heating 1

|                       |                      |   |  |  |
|-----------------------|----------------------|---|--|--|
| Database              |                      |   |  |  |
| Percentage of Heat    | 100.00               | % |  |  |
| Database Ref. No.     | 19003                |   |  |  |
| Fuel Type             | Mains gas            |   |  |  |
| SAP Code              | 0                    |   |  |  |
| In Winter             | 89.00                |   |  |  |
| In Summer             | 98.90                |   |  |  |
| Model Name            | LOGIC CODE COMBI2    |   |  |  |
| Manufacturer          | Ideal Boilers        |   |  |  |
| System Type           | Combi boiler         |   |  |  |
| Controls SAP Code     | 2110                 |   |  |  |
| Delayed Start Stat    | Yes                  |   |  |  |
| Burner Control        | Modulating           |   |  |  |
| HETAS approved System | No                   |   |  |  |
| Oil Pump Inside       | No                   |   |  |  |
| FI Case               | 0.00                 |   |  |  |
| Flue Type             | Balanced             |   |  |  |
| Fan Assisted Flue     | Yes                  |   |  |  |
| Is MHS Pumped         | Pump in heated space |   |  |  |
| Heating Pump Age      | 2013 or later        |   |  |  |
| Heat Emitter          | Radiators            |   |  |  |
| Flow Temperature      | Unknown              |   |  |  |
| Boiler Interlock      | Yes                  |   |  |  |
| Combi boiler type     | Standard Combi       |   |  |  |
| Combi keep hot type   | None                 |   |  |  |

|                     |      |
|---------------------|------|
| 25.0 Main Heating 2 | None |
|---------------------|------|

|                    |      |
|--------------------|------|
| 26.0 Heat Networks | None |
|--------------------|------|

## 28.0 Water Heating

|                               |                |
|-------------------------------|----------------|
| Water Heating                 | Main Heating 1 |
| SAP Code                      | 901            |
| Flue Gas Heat Recovery System | Yes            |

# Summary for Input Data

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

## 28.1 Showers

| Description | Shower Type                               | Flow Rate [l/min] | Rated Power [kW] | Connected | Connected To           |
|-------------|-------------------------------------------|-------------------|------------------|-----------|------------------------|
| Shower 1    | Combi boiler or unvented hot water system | 11.00             |                  | Yes       | Instantaneous System 1 |
| Shower 2    | Combi boiler or unvented hot water system | 11.00             |                  | No        |                        |

## 28.2 Flue Gas Heat Recovery System

|             |   |
|-------------|---|
| Database ID | 0 |
| Brand Model |   |
| Details     |   |

## 28.3 Waste Water Heat Recovery System

## 29.0 Hot Water Cylinder

|                          |      |
|--------------------------|------|
| Cylinder Stat            | None |
| Cylinder In Heated Space | No   |
| Independent Time Control | No   |
| In Airing Cupboard       | No   |

## 31.0 Thermal Store

|      |
|------|
| None |
|------|

## 32.0 Photovoltaic Unit

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

| PV Cells kWp | Orientation | Elevation | Overshading    | FGHRS | MCS Certificate | Overshading Factor | MCS Certificate Reference | Panel Manufacturer |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 3.60         | East        | 30°       | None Or Little | No    | No              | 1.00               |                           | N/a                |

## 34.0 Small-scale Hydro

|                                           |        |
|-------------------------------------------|--------|
| Electricity Generated                     | None   |
| Apportioned                               | 0.00   |
| Connected to dwelling's electricity meter | 0.00   |
| Electricity Generation                    | Yes    |
|                                           | 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   | 007837 - The Tupilo - Det |               | Issued on Date        | 15/09/2023 |
| Assessment Reference | As Designed - As          | Prop Type Ref | 007837 The Tupelo DET |            |
| Property             | Plot , Fenay Bridge       |               |                       |            |

|                                    |          |               |       |      |       |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating                         | 95 A     | DER           | 8.97  | TER  | 9.32  |
| Environmental                      | 91 B     | % DER < TER   |       |      | 3.76  |
| CO <sub>2</sub> Emissions (t/year) | 1.27     | DFEE          | 34.03 | TFEE | 36.49 |
| Compliance Check                   | See BREL | % DFEE < TFEE |       |      | 6.76  |
| % DPER < TPER                      | 3.10     | DPER          | 47.10 | TPER | 48.61 |

|                  |                 |             |           |
|------------------|-----------------|-------------|-----------|
| Assessor Details | Mr. Dean Shores | Assessor ID | W976-0001 |
| Client           |                 |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | East                |        |
| Property Tenture               | 1                   |        |
| 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                 | 2022                |        |
| 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                   | N/A                 | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | Yes                 |        |

| 7.0 Measurements | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
|------------------|---------------------|----------------------|-----------------------|
| Basement:        | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| Ground floor:    | 36.54 m             | 59.76 m <sup>2</sup> | 2.72 m                |
| 1st Storey:      | 36.54 m             | 79.60 m <sup>2</sup> | 2.37 m                |
| 2nd Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 3rd Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 4th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 5th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 6th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 7th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 14.33 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls |             |                                                                                     |                              |                             |                             |                             |             |                        |          |                       |
|--------------------|-------------|-------------------------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|------------------------|----------|-----------------------|
| Description        | Type        | Construction                                                                        | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter                | Openings | Area Calculation Type |
| External Wall      | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.19                         | 60.00                       | 73.88                       | 50.16                       | 0.00        | None                   | 23.72    | Enter Gross Area      |
| Garage Wall        | Solid Wall  | Solid wall : dense plaster, insulation, any outside structure                       | 0.26                         | 17.00                       | 25.59                       | 25.59                       | 0.55        | Garage Single 2 Inside | 0.00     | Enter Gross Area      |

| 9.1 Party Walls |                                 |                                                                                 |                              |                             |                        |             |         |  |  |
|-----------------|---------------------------------|---------------------------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|--|--|
| Description     | Type                            | Construction                                                                    | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |  |  |
| Party Wall      | Filled Cavity with Edge Sealing | Plasterboard on dabs mounted on cement render on both sides, AAC blocks, cavity | 0.00                         | 45.00                       | 39.55                  | 0.00        | None    |  |  |

| 9.2 Internal Walls |                              |  |  |  |  |                             |                        |  |  |
|--------------------|------------------------------|--|--|--|--|-----------------------------|------------------------|--|--|
| Description        | Construction                 |  |  |  |  | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |  |  |
| Internal Wall GF   | Plasterboard on timber frame |  |  |  |  | 9.00                        | 99.28                  |  |  |
| Internal Wall FF   | Plasterboard on timber frame |  |  |  |  | 9.00                        | 178.13                 |  |  |

| 10.0 External Roofs |  |  |  |  |  |  |  |  |  |
|---------------------|--|--|--|--|--|--|--|--|--|
|---------------------|--|--|--|--|--|--|--|--|--|



# Summary for Input Data



| Description   | Type                | Construction                             | U-Value<br>(W/m²K) | Kappa<br>(kJ/m²K) | Gross<br>Area(m²) | Nett<br>Area<br>(m²) | Shelter<br>Code | Shelter<br>Factor | Calculation<br>Type | Openings |
|---------------|---------------------|------------------------------------------|--------------------|-------------------|-------------------|----------------------|-----------------|-------------------|---------------------|----------|
| External Roof | External Plane Roof | Plasterboard, insulated at ceiling level | 0.10               | 9.00              | 79.60             | 79.60                | None            | 0.00              | Enter Gross Area    | 0.00     |

## 10.2 Internal Ceilings

| Description         | Storey          | Construction                                   | Area (m²) |
|---------------------|-----------------|------------------------------------------------|-----------|
| Internal Ceiling GF | Lowest occupied | Plasterboard ceiling, carpeted chipboard floor | 59.76     |

## 11.0 Heat Loss Floors

| Description       | Type                   | Storey Index    | Construction                                    | U-Value<br>(W/m²K) | Shelter Code           | Shelter Factor | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|------------------------|-----------------|-------------------------------------------------|--------------------|------------------------|----------------|-------------------|-----------|
| Heatloss Floor GF | Ground Floor - Solid   | Lowest occupied | Suspended concrete floor, carpeted              | 0.12               | None                   | 0.00           | 75.00             | 59.76     |
| Exposed Floor     | Exposed Floor - Timber | +1              | Timber exposed floor, insulation between joists | 0.13               | Garage Single 2 Inside | 0.55           | 20.00             | 19.84     |

## 11.2 Internal Floors

| Description       | Storey Index | Construction                                   | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|--------------|------------------------------------------------|-------------------|-----------|
| Internal Floor FF |              | Plasterboard ceiling, carpeted chipboard floor | 9.00              | 79.60     |

## 12.0 Opening Types

| Description | Data Source               | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value<br>(W/m²K) |
|-------------|---------------------------|------------|------------------------|-------------|--------------|---------|------------|--------------|--------------------|
| Windows     | BFRC, BSI or CERTASS data | Window     | Double Low-E Soft 0.05 |             | Air Filled   | 0.52    | Wood       | 1.00         | 1.22               |
| Doors       | Manufacturer              | Solid Door |                        |             | Air Filled   | 0.00    | Wood       | 0.70         | 1.20               |
| Patio Doors | BFRC, BSI or CERTASS data | Window     | Double Low-E Soft 0.05 |             | Air Filled   | 0.31    | Wood       | 1.00         | 1.30               |

## 13.0 Openings

| Name             | Opening Type | Location      | Orientation | Area (m²) | Pitch |
|------------------|--------------|---------------|-------------|-----------|-------|
| Front Door       | Doors        | External Wall | East        | 2.15      | 0     |
| Front Window     | Windows      | External Wall | East        | 8.01      | 0     |
| Rear Windows     | Windows      | External Wall | West        | 6.38      | 0     |
| Rear Patio Doors | Patio Doors  | External Wall | West        | 5.69      | 0     |
| LHS Windows      | Windows      | External Wall | South       | 1.49      | 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                 | Independently assessed | 15.99  | 0.17 | 0.17 CBA            | No       |
| E3 Sill                                                          | Independently assessed | 10.90  | 0.01 | 0.01 CBA            | No       |
| E4 Jamb                                                          | Independently assessed | 37.66  | 0.01 | 0.01 CBA            | No       |
| E5 Ground floor (normal)                                         | Independently assessed | 27.14  | 0.07 | 0.07 CBA            | No       |
| E6 Intermediate floor within a dwelling                          | Independently assessed | 36.54  | 0.01 | 0.01 CBA            | No       |
| E10 Eaves (insulation at ceiling level)                          | Independently assessed | 17.82  | 0.06 | 0.06 CBA            | No       |
| E12 Gable (insulation at ceiling level)                          | Independently assessed | 18.72  | 0.08 | 0.08 CBA            | No       |
| E16 Corner (normal)                                              | Independently assessed | 28.16  | 0.05 | 0.05 CBA            | No       |
| E20 Exposed floor (normal)                                       | Independently assessed | 9.40   | 0.10 | 0.10                | No       |
| E21 Exposed floor (inverted)                                     | Independently assessed | 9.40   | 0.11 | 0.11                | No       |
| E17 Corner (inverted – internal area greater than external area) | Table K1 - Default     | 5.09   | 0.00 | 0.00                | No       |
| E5 Ground floor (normal)                                         | Table K1 - Default     | 9.40   | 0.32 | 0.32 Garage         | No       |

|         |                                   |       |
|---------|-----------------------------------|-------|
| Y-value | <input type="text" value="0.00"/> | W/m²K |
|---------|-----------------------------------|-------|

## 18.0 Pressure Testing

|                           |                                          |                   |
|---------------------------|------------------------------------------|-------------------|
| Designed AP <sub>50</sub> | <input type="text" value="Yes"/>         |                   |
| Property Tested?          | <input type="text" value="4.00"/>        | m³/(h.m²) @ 50 Pa |
| Test Method               | <input type="text" value="Blower Door"/> |                   |
| As Built AP <sub>50</sub> | <input type="text" value="Yes"/>         |                   |
|                           | <input type="text" value="0.10"/>        | m³/(h.m²) @ 50 Pa |

## 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="500787"/>                                         |

# Summary for Input Data

|                                              |          |
|----------------------------------------------|----------|
| Duct Type                                    | Flexible |
| MVHR Efficiency                              | 0.00     |
| Wet Rooms                                    | 3        |
| SFP from Installer Commissioning Certificate | No       |

## 19.1 Mechanical extract ventilation - Decentralised

| SFP  | Fan/Room Type       | Count |
|------|---------------------|-------|
| 0.13 | In Room Fan         | 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            |       |
| 0.10 | Through Wall Fan    | 1     |
|      | Kitchen             |       |
| 0.10 | Through Wall Fan    | 3     |
|      | Other Wet Room      |       |

## 20.0 Fans, Open Fireplaces, Flues

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

## 22.0 Lighting

| No Fixed Lighting | No       |       |          |       |  |
|-------------------|----------|-------|----------|-------|--|
| Name              | Efficacy | Power | Capacity | Count |  |
| Downlights        | 80.00    | 28    | 2240     | 16    |  |

## 24.0 Main Heating 1

|                       |                      |   |  |  |
|-----------------------|----------------------|---|--|--|
| Database              |                      |   |  |  |
| Percentage of Heat    | 100.00               | % |  |  |
| Database Ref. No.     | 19003                |   |  |  |
| Fuel Type             | Mains gas            |   |  |  |
| SAP Code              | 0                    |   |  |  |
| In Winter             | 89.00                |   |  |  |
| In Summer             | 98.90                |   |  |  |
| Model Name            | LOGIC CODE COMBI2    |   |  |  |
| Manufacturer          | Ideal Boilers        |   |  |  |
| System Type           | Combi boiler         |   |  |  |
| Controls SAP Code     | 2110                 |   |  |  |
| Delayed Start Stat    | Yes                  |   |  |  |
| Burner Control        | Modulating           |   |  |  |
| HETAS approved System | No                   |   |  |  |
| Oil Pump Inside       | No                   |   |  |  |
| FI Case               | 0.00                 |   |  |  |
| Flue Type             | Balanced             |   |  |  |
| Fan Assisted Flue     | Yes                  |   |  |  |
| Is MHS Pumped         | Pump in heated space |   |  |  |
| Heating Pump Age      | 2013 or later        |   |  |  |
| Heat Emitter          | Radiators            |   |  |  |
| Flow Temperature      | Unknown              |   |  |  |
| Boiler Interlock      | Yes                  |   |  |  |
| Combi boiler type     | Standard Combi       |   |  |  |
| Combi keep hot type   | None                 |   |  |  |

|                     |      |
|---------------------|------|
| 25.0 Main Heating 2 | None |
|---------------------|------|

|                    |      |
|--------------------|------|
| 26.0 Heat Networks | None |
|--------------------|------|

## 28.0 Water Heating

|               |                |
|---------------|----------------|
| Water Heating | Main Heating 1 |
| SAP Code      | 901            |

# Summary for Input Data

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

## 28.1 Showers

| Description | Shower Type                               | Flow Rate<br>[l/min] | Rated Power<br>[kW] | Connected | Connected To           |
|-------------|-------------------------------------------|----------------------|---------------------|-----------|------------------------|
| Shower 1    | Combi boiler or unvented hot water system | 11.00                |                     | Yes       | Instantaneous System 1 |
| Shower 2    | Combi boiler or unvented hot water system | 11.00                |                     | No        |                        |

## 28.2 Flue Gas Heat Recovery System

|             |   |
|-------------|---|
| Database ID | 0 |
| Brand Model |   |
| Details     |   |

## 28.3 Waste Water Heat Recovery System

## 29.0 Hot Water Cylinder

|                          |    |
|--------------------------|----|
| Cylinder Stat            | No |
| Cylinder In Heated Space | No |
| Independent Time Control | No |
| In Airing Cupboard       | No |

## 31.0 Thermal Store

|      |
|------|
| None |
|------|

## 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 |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 3.60         | East        | 45°       | None Or Little | No    | No              | 1.00               |                           | N/a                |

## 34.0 Small-scale Hydro

|                                           |        |
|-------------------------------------------|--------|
| 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   | 008737 - The Chestnut - End |               | Issued on Date          | 15/09/2023 |
| Assessment Reference | As Designed - As            | Prop Type Ref | 007837 The Chestnut END |            |
| Property             | Plot , Fenay Bridge         |               |                         |            |

|                                    |          |               |       |      |       |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating                         | 92 A     | DER           | 11.90 | TER  | 12.11 |
| Environmental                      | 90 B     | % DER < TER   |       |      | 1.73  |
| CO <sub>2</sub> Emissions (t/year) | 0.95     | DFEE          | 36.37 | TFEE | 38.41 |
| Compliance Check                   | See BREL | % DFEE < TFEE |       |      | 5.31  |
| % DPER < TPER                      | 0.77     | DPER          | 62.78 | TPER | 63.27 |

|                  |                 |             |           |
|------------------|-----------------|-------------|-----------|
| Assessor Details | Mr. Dean Shores | Assessor ID | W976-0001 |
| Client           |                 |             |           |

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

|                                |                      |        |
|--------------------------------|----------------------|--------|
| Orientation                    | East                 |        |
| Property Tenture               | 1                    |        |
| 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                 | 2022                 |        |
| 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                   | N/A                  | kJ/m²K |
|                                |                      |        |
| 7.0 Electricity Tariff         | Standard             |        |
| Smart electricity meter fitted | Yes                  |        |
| Smart gas meter fitted         | Yes                  |        |

| 7.0 Measurements |                     |                     |                       |
|------------------|---------------------|---------------------|-----------------------|
|                  | Heat Loss Perimeter | Internal Floor Area | Average Storey Height |
| Basement:        | 0.00 m              | 0.00 m²             | 0.00 m                |
| Ground floor:    | 18.03 m             | 39.89 m²            | 2.38 m                |
| 1st Storey:      | 18.03 m             | 39.89 m²            | 2.70 m                |
| 2nd Storey:      | 0.00 m              | 0.00 m²             | 0.00 m                |
| 3rd Storey:      | 0.00 m              | 0.00 m²             | 0.00 m                |
| 4th Storey:      | 0.00 m              | 0.00 m²             | 0.00 m                |
| 5th Storey:      | 0.00 m              | 0.00 m²             | 0.00 m                |
| 6th Storey:      | 0.00 m              | 0.00 m²             | 0.00 m                |
| 7th Storey:      | 0.00 m              | 0.00 m²             | 0.00 m                |

|                 |       |    |
|-----------------|-------|----|
| 8.0 Living Area | 32.95 | m² |
|-----------------|-------|----|

| 9.0 External Walls |             |                                                                                     |                 |                |                |                |             |         |          |                       |
|--------------------|-------------|-------------------------------------------------------------------------------------|-----------------|----------------|----------------|----------------|-------------|---------|----------|-----------------------|
| Description        | Type        | Construction                                                                        | U-Value (W/m²K) | Kappa (kJ/m²K) | Gross Area(m²) | Nett Area (m²) | Shelter Res | Shelter | Openings | Area Calculation Type |
| External Wall      | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.19            | 60.00          | 91.61          | 73.80          | 0.00        | None    | 17.81    | Enter Gross Area      |

| 9.1 Party Walls |                                 |                                                                                 |                 |                |           |             |         |  |  |
|-----------------|---------------------------------|---------------------------------------------------------------------------------|-----------------|----------------|-----------|-------------|---------|--|--|
| Description     | Type                            | Construction                                                                    | U-Value (W/m²K) | Kappa (kJ/m²K) | Area (m²) | Shelter Res | Shelter |  |  |
| Party Wall      | Filled Cavity with Edge Sealing | Plasterboard on dabs mounted on cement render on both sides, AAC blocks, cavity | 0.00            | 45.00          | 39.55     | 0.00        | None    |  |  |

| 9.2 Internal Walls |                              |                |           |  |
|--------------------|------------------------------|----------------|-----------|--|
| Description        | Construction                 | Kappa (kJ/m²K) | Area (m²) |  |
| Internal Wall GF   | Plasterboard on timber frame | 9.00           | 53.17     |  |
| Internal Wall FF   | Plasterboard on timber frame | 9.00           | 120.15    |  |

## 10.0 External Roofs

# Summary for Input Data



| Description   | Type                   | Construction                             | U-Value<br>(W/m²K) | Kappa<br>(kJ/m²K) | Gross<br>Area(m²) | Nett<br>Area<br>(m²) | Shelter<br>Code | Shelter<br>Factor | Calculation<br>Type | Openings |
|---------------|------------------------|------------------------------------------|--------------------|-------------------|-------------------|----------------------|-----------------|-------------------|---------------------|----------|
| External Roof | External Plane<br>Roof | Plasterboard, insulated at ceiling level | 0.10               | 9.00              | 39.89             | 39.89                | None            | 0.00              | Enter Gross<br>Area | 0.00     |

## 10.2 Internal Ceilings

| Description         | Storey          | Construction                                   | Area (m²) |
|---------------------|-----------------|------------------------------------------------|-----------|
| Internal Ceiling GF | Lowest occupied | Plasterboard ceiling, carpeted chipboard floor | 39.89     |

## 11.0 Heat Loss Floors

| Description       | Type                 | Storey Index    | Construction                       | U-Value<br>(W/m²K) | Shelter Code | Shelter<br>Factor | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|----------------------|-----------------|------------------------------------|--------------------|--------------|-------------------|-------------------|-----------|
| Heatloss Floor GF | Ground Floor - Solid | Lowest occupied | Suspended concrete floor, carpeted | 0.12               | None         | 0.00              | 75.00             | 39.89     |

## 11.2 Internal Floors

| Description       | Storey Index | Construction                                   | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|--------------|------------------------------------------------|-------------------|-----------|
| Internal Floor FF |              | Plasterboard ceiling, carpeted chipboard floor | 9.00              | 39.89     |

## 12.0 Opening Types

| Description | Data Source                  | Type       | Glazing                | Glazing<br>Gap | Filling<br>Type | G-value | Frame<br>Type | Frame<br>Factor | U Value<br>(W/m²K) |
|-------------|------------------------------|------------|------------------------|----------------|-----------------|---------|---------------|-----------------|--------------------|
| Windows     | BFRC, BSI or<br>CERTASS data | Window     | Double Low-E Soft 0.05 |                | Air Filled      | 0.52    | Wood          | 1.00            | 1.22               |
| Doors       | Manufacturer                 | Solid Door |                        |                | Air Filled      | 0.00    | Wood          | 0.70            | 1.20               |
| Patio Doors | BFRC, BSI or<br>CERTASS data | Window     | Double Low-E Soft 0.05 |                | Air Filled      | 0.31    | Wood          | 1.00            | 1.30               |

## 13.0 Openings

| Name             | Opening Type | Location      | Orientation | Area (m²) | Pitch |
|------------------|--------------|---------------|-------------|-----------|-------|
| Front Door       | Doors        | External Wall | East        | 2.15      | 0     |
| Front Window     | Windows      | External Wall | East        | 5.35      | 0     |
| LHS Window       | Windows      | External Wall | South       | 1.56      | 0     |
| Rear Windows     | Windows      | External Wall | West        | 3.06      | 0     |
| Rear Patio Doors | Patio Doors  | External Wall | West        | 5.69      | 0     |

## 14.0 Conservatory

## 15.0 Draught Proofing

 %

## 16.0 Draught Lobby

## 17.0 Thermal Bridging

## 17.1 List of Bridges

| Bridge Type                                          | Source Type              | Length | Psi  | Adjusted Reference:   | Imported |
|------------------------------------------------------|--------------------------|--------|------|-----------------------|----------|
| E1 Steel lintel with perforated steel base plate     | Independently assessed   | 11.23  | 0.17 | 0.17 CBA              | No       |
| E3 Sill                                              | Independently assessed   | 7.49   | 0.01 | 0.01 CBA              | No       |
| E4 Jamb                                              | Independently assessed   | 26.44  | 0.01 | 0.01 CBA              | No       |
| E5 Ground floor (normal)                             | Independently assessed   | 18.03  | 0.07 | 0.07 CBA              | No       |
| E6 Intermediate floor within a dwelling              | Independently assessed   | 18.03  | 0.01 | 0.01 CBA              | No       |
| E10 Eaves (insulation at ceiling level)              | Independently assessed   | 10.25  | 0.06 | 0.06 CBA              | No       |
| E12 Gable (insulation at ceiling level)              | Independently assessed   | 7.78   | 0.08 | 0.08 CBA              | No       |
| E16 Corner (normal)                                  | Independently assessed   | 10.16  | 0.05 | 0.05 CBA              | No       |
| E18 Party wall between dwellings                     | Independently assessed   | 10.16  | 0.03 | 0.03 CBA              | No       |
| P1 Party wall - Ground floor                         | Non Gov Approved Schemes | 7.78   | 0.12 | 0.12 Besblock Example | No       |
| P4 Party wall - Roof (insulation at ceiling level)   | Independently assessed   | 7.78   | 0.08 | 0.08 CBA              | No       |
| P2 Party wall - Intermediate floor within a dwelling | Table K1 - Default       | 7.78   | 0.00 | 0.00                  | No       |

|         |                                   |       |
|---------|-----------------------------------|-------|
| Y-value | <input type="text" value="0.00"/> | W/m²K |
|---------|-----------------------------------|-------|

## 18.0 Pressure Testing

|                           |                                          |                   |
|---------------------------|------------------------------------------|-------------------|
| Designed AP <sub>50</sub> | <input type="text" value="4.00"/>        | m³/(h.m²) @ 50 Pa |
| Property Tested?          | <input type="text" value="Yes"/>         |                   |
| Test Method               | <input type="text" value="Blower Door"/> |                   |
| As Built AP <sub>50</sub> | <input type="text" value="0.10"/>        | m³/(h.m²) @ 50 Pa |

## 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="500787"/>                                         |
| Duct Type                             | <input type="text" value="Flexible"/>                                       |
| MVHR Efficiency                       | <input type="text" value="0.00"/>                                           |

# Summary for Input Data

Wet Rooms

SFP from Installer Commissioning Certificate

## 19.1 Mechanical extract ventilation - Decentralised

| SFP  | Fan/Room Type                   | Count |
|------|---------------------------------|-------|
| 0.13 | 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     |
| 0.10 | Through Wall Fan Kitchen        | 1     |
| 0.10 | Through Wall Fan Other Wet Room | 1     |

## 20.0 Fans, Open Fireplaces, Flues

21.0 Fixed Cooling System

## 22.0 Lighting

| No Fixed Lighting | <input type="text" value="No"/> |       |          |       |  |
|-------------------|---------------------------------|-------|----------|-------|--|
| Name              | Efficacy                        | Power | Capacity | Count |  |
| Downlights        | 80.00                           | 28    | 2240     | 12    |  |

## 24.0 Main Heating 1

|                       |                      |  |   |  |  |
|-----------------------|----------------------|--|---|--|--|
| Database              |                      |  |   |  |  |
| Percentage of Heat    | 100.00               |  | % |  |  |
| Database Ref. No.     | 19003                |  |   |  |  |
| Fuel Type             | Mains gas            |  |   |  |  |
| SAP Code              | 0                    |  |   |  |  |
| In Winter             | 89.00                |  |   |  |  |
| In Summer             | 98.90                |  |   |  |  |
| Model Name            | LOGIC CODE COMBI2    |  |   |  |  |
| Manufacturer          | Ideal Boilers        |  |   |  |  |
| System Type           | Combi boiler         |  |   |  |  |
| Controls SAP Code     | 2110                 |  |   |  |  |
| Delayed Start Stat    | Yes                  |  |   |  |  |
| Burner Control        | Modulating           |  |   |  |  |
| HETAS approved System | No                   |  |   |  |  |
| Oil Pump Inside       | No                   |  |   |  |  |
| FI Case               | 0.00                 |  |   |  |  |
| Flue Type             | Balanced             |  |   |  |  |
| Fan Assisted Flue     | Yes                  |  |   |  |  |
| Is MHS Pumped         | Pump in heated space |  |   |  |  |
| Heating Pump Age      | 2013 or later        |  |   |  |  |
| Heat Emitter          | Radiators            |  |   |  |  |
| Flow Temperature      | Unknown              |  |   |  |  |
| Boiler Interlock      | Yes                  |  |   |  |  |
| Combi boiler type     | Standard Combi       |  |   |  |  |
| Combi keep hot type   | None                 |  |   |  |  |

25.0 Main Heating 2

26.0 Heat Networks

## 28.0 Water Heating

|                                                  |                |
|--------------------------------------------------|----------------|
| Water Heating                                    | Main Heating 1 |
| SAP Code                                         | 901            |
| Flue Gas Heat Recovery System                    | Yes            |
| Waste Water Heat Recovery Instantaneous System 1 | No             |

# Summary for Input Data

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

## 28.1 Showers

| Description | Shower Type                               | Flow Rate [l/min] | Rated Power [kW] | Connected | Connected To           |
|-------------|-------------------------------------------|-------------------|------------------|-----------|------------------------|
| Shower 1    | Combi boiler or unvented hot water system | 11.00             |                  | Yes       | Instantaneous System 1 |
| Shower 2    | Combi boiler or unvented hot water system | 11.00             |                  | No        |                        |

## 28.2 Flue Gas Heat Recovery System

|             |   |
|-------------|---|
| Database ID | 0 |
| Brand Model |   |
| Details     |   |

## 28.3 Waste Water Heat Recovery System

|                          |      |
|--------------------------|------|
| 29.0 Hot Water Cylinder  | None |
| Cylinder Stat            | No   |
| Cylinder In Heated Space | No   |
| Independent Time Control | No   |
| In Airing Cupboard       | No   |

## 31.0 Thermal Store

|      |
|------|
| None |
|------|

## 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 |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 2.00         | East        | 30°       | None Or Little | No    | No              | 1.00               |                           | N/a                |

## 34.0 Small-scale Hydro

|                                           |        |
|-------------------------------------------|--------|
| 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   | 008737 - The Avocado - End |               | Issued on Date     | 15/09/2023 |
| Assessment Reference | As Designed - As           | Prop Type Ref | 007837 Avocado END |            |
| Property             | Plot , Fenay Bridge        |               |                    |            |

|                                    |          |               |       |      |       |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating                         | 92 A     | DER           | 12.32 | TER  | 12.90 |
| Environmental                      | 90 B     | % DER < TER   |       |      | 4.50  |
| CO <sub>2</sub> Emissions (t/year) | 0.87     | DFEE          | 36.83 | TFEE | 38.62 |
| Compliance Check                   | See BREL | % DFEE < TFEE |       |      | 4.61  |
| % DPER < TPER                      | 3.73     | DPER          | 65.04 | TPER | 67.56 |

|                  |                 |             |           |
|------------------|-----------------|-------------|-----------|
| Assessor Details | Mr. Dean Shores | Assessor ID | W976-0001 |
| Client           |                 |             |           |

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

|                                |                      |        |
|--------------------------------|----------------------|--------|
| Orientation                    | East                 |        |
| Property Tenture               | 1                    |        |
| 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                 | 2022                 |        |
| 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                   | N/A                  | kJ/m²K |
|                                |                      |        |
| 7.0 Electricity Tariff         | Standard             |        |
| Smart electricity meter fitted | Yes                  |        |
| Smart gas meter fitted         | Yes                  |        |

| 7.0 Measurements |                     |                      |                       |
|------------------|---------------------|----------------------|-----------------------|
|                  | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
| Basement:        | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| Ground floor:    | 16.80 m             | 35.19 m <sup>2</sup> | 2.38 m                |
| 1st Storey:      | 16.80 m             | 35.19 m <sup>2</sup> | 2.70 m                |
| 2nd Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 3rd Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 4th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 5th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 6th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 7th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 28.57 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls |             |                                                                                     |                              |                             |                             |                             |             |         |          |                       |
|--------------------|-------------|-------------------------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
| Description        | Type        | Construction                                                                        | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
| External Wall      | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.19                         | 60.00                       | 85.41                       | 71.73                       | 0.00        | None    | 13.68    | Enter Gross Area      |

| 9.1 Party Walls |                                 |                                                                                 |                              |                             |                        |             |         |  |  |
|-----------------|---------------------------------|---------------------------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|--|--|
| Description     | Type                            | Construction                                                                    | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |  |  |
| Party Wall      | Filled Cavity with Edge Sealing | Plasterboard on dabs mounted on cement render on both sides, AAC blocks, cavity | 0.00                         | 45.00                       | 40.73                  | 0.00        | None    |  |  |

| 9.2 Internal Walls |                              |                             |                        |  |
|--------------------|------------------------------|-----------------------------|------------------------|--|
| Description        | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |  |
| Internal Wall GF   | Plasterboard on timber frame | 9.00                        | 56.07                  |  |
| Internal Wall FF   | Plasterboard on timber frame | 9.00                        | 82.73                  |  |

## 10.0 External Roofs



# Summary for Input Data



| Description   | Type                   | Construction                             | U-Value<br>(W/m²K) | Kappa<br>(kJ/m²K) | Gross<br>Area(m²) | Nett<br>Area<br>(m²) | Shelter<br>Code | Shelter<br>Factor | Calculation<br>Type | Openings |
|---------------|------------------------|------------------------------------------|--------------------|-------------------|-------------------|----------------------|-----------------|-------------------|---------------------|----------|
| External Roof | External Plane<br>Roof | Plasterboard, insulated at ceiling level | 0.10               | 9.00              | 35.19             | 35.19                | None            | 0.00              | Enter Gross<br>Area | 0.00     |

## 10.2 Internal Ceilings

| Description         | Storey          | Construction                                   | Area (m²) |
|---------------------|-----------------|------------------------------------------------|-----------|
| Internal Ceiling GF | Lowest occupied | Plasterboard ceiling, carpeted chipboard floor | 35.19     |

## 11.0 Heat Loss Floors

| Description       | Type                 | Storey Index    | Construction                       | U-Value<br>(W/m²K) | Shelter Code | Shelter<br>Factor | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|----------------------|-----------------|------------------------------------|--------------------|--------------|-------------------|-------------------|-----------|
| Heatloss Floor GF | Ground Floor - Solid | Lowest occupied | Suspended concrete floor, carpeted | 0.12               | None         | 0.00              | 75.00             | 35.19     |

## 11.2 Internal Floors

| Description       | Storey Index | Construction                                   | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|--------------|------------------------------------------------|-------------------|-----------|
| Internal Floor FF |              | Plasterboard ceiling, carpeted chipboard floor | 9.00              | 35.19     |

## 12.0 Opening Types

| Description | Data Source                  | Type       | Glazing                | Glazing<br>Gap | Filling<br>Type | G-value | Frame<br>Type | Frame<br>Factor | U Value<br>(W/m²K) |
|-------------|------------------------------|------------|------------------------|----------------|-----------------|---------|---------------|-----------------|--------------------|
| Windows     | BFRC, BSI or<br>CERTASS data | Window     | Double Low-E Soft 0.05 |                | Air Filled      | 0.52    | Wood          | 1.00            | 1.22               |
| Doors       | Manufacturer                 | Solid Door |                        |                | Air Filled      | 0.00    | Wood          | 0.70            | 1.20               |
| Patio Doors | BFRC, BSI or<br>CERTASS data | Window     | Double Low-E Soft 0.05 |                | Air Filled      | 0.31    | Wood          | 1.00            | 1.30               |

## 13.0 Openings

| Name             | Opening Type | Location      | Orientation | Area (m²) | Pitch |
|------------------|--------------|---------------|-------------|-----------|-------|
| Front Door       | Doors        | External Wall | East        | 2.15      | 0     |
| Front Window     | Windows      | External Wall | East        | 2.77      | 0     |
| LHS Window       | Windows      | External Wall | South       | 0.77      | 0     |
| Rear Windows     | Windows      | External Wall | West        | 2.30      | 0     |
| Rear Patio Doors | Patio Doors  | External Wall | West        | 5.69      | 0     |

## 14.0 Conservatory

## 15.0 Draught Proofing

 %

## 16.0 Draught Lobby

## 17.0 Thermal Bridging

## 17.1 List of Bridges

| Bridge Type                                          | Source Type            | Length | Psi  | Adjusted Reference:   | Imported |
|------------------------------------------------------|------------------------|--------|------|-----------------------|----------|
| E1 Steel lintel with perforated steel base plate     | Independently assessed | 8.52   | 0.17 | 0.17 CBA              | No       |
| E3 Sill                                              | Independently assessed | 4.78   | 0.01 | 0.01 CBA              | No       |
| E4 Jamb                                              | Independently assessed | 23.24  | 0.01 | 0.01 CBA              | No       |
| E5 Ground floor (normal)                             | Independently assessed | 16.80  | 0.07 | 0.07 CBA              | No       |
| E6 Intermediate floor within a dwelling              | Independently assessed | 16.80  | 0.01 | 0.01 CBA              | No       |
| E10 Eaves (insulation at ceiling level)              | Independently assessed | 8.79   | 0.06 | 0.06 CBA              | No       |
| E12 Gable (insulation at ceiling level)              | Independently assessed | 8.01   | 0.08 | 0.08 CBA              | No       |
| E16 Corner (normal)                                  | Independently assessed | 10.17  | 0.05 | 0.05 CBA              | No       |
| E18 Party wall between dwellings                     | Independently assessed | 10.17  | 0.03 | 0.03 CBA              | No       |
| P1 Party wall - Ground floor                         | Independently assessed | 8.01   | 0.12 | 0.12 Besblock Example | No       |
| P4 Party wall - Roof (insulation at ceiling level)   | Independently assessed | 8.01   | 0.08 | 0.08 CBA              | No       |
| P2 Party wall - Intermediate floor within a dwelling | Table K1 - Default     | 8.01   | 0.00 | 0.00                  | No       |

|         |                                   |       |
|---------|-----------------------------------|-------|
| Y-value | <input type="text" value="0.00"/> | W/m²K |
|---------|-----------------------------------|-------|

## 18.0 Pressure Testing

|                           |                                          |                   |
|---------------------------|------------------------------------------|-------------------|
| Designed AP <sub>50</sub> | <input type="text" value="4.00"/>        | m³/(h.m²) @ 50 Pa |
| Property Tested?          | <input type="text" value="Yes"/>         |                   |
| Test Method               | <input type="text" value="Blower Door"/> |                   |
| As Built AP <sub>50</sub> | <input type="text" value="0.10"/>        | m³/(h.m²) @ 50 Pa |

## 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="500787"/>                                         |
| Duct Type                             | <input type="text" value="Flexible"/>                                       |
| MVHR Efficiency                       | <input type="text" value="0.00"/>                                           |

# Summary for Input Data

Wet Rooms

SFP from Installer Commissioning Certificate

## 19.1 Mechanical extract ventilation - Decentralised

| SFP  | Fan/Room Type                   | Count |
|------|---------------------------------|-------|
| 0.13 | 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     |
| 0.10 | Through Wall Fan Kitchen        | 1     |
| 0.10 | Through Wall Fan Other Wet Room | 0     |

## 20.0 Fans, Open Fireplaces, Flues

21.0 Fixed Cooling System

## 22.0 Lighting

| No Fixed Lighting | <input type="text" value="No"/> |       |          |       |  |
|-------------------|---------------------------------|-------|----------|-------|--|
| Name              | Efficacy                        | Power | Capacity | Count |  |
| Downlights        | 80.00                           | 28    | 2240     | 7     |  |

## 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="19003"/>                |   |
| Fuel Type             | <input type="text" value="Mains gas"/>            |   |
| SAP Code              | <input type="text" value="0"/>                    |   |
| In Winter             | <input type="text" value="89.00"/>                |   |
| In Summer             | <input type="text" value="98.90"/>                |   |
| Model Name            | <input type="text" value="LOGIC CODE COMBI2"/>    |   |
| Manufacturer          | <input type="text" value="Ideal Boilers"/>        |   |
| System Type           | <input type="text" value="Combi boiler"/>         |   |
| Controls SAP Code     | <input type="text" value="2110"/>                 |   |
| Delayed Start Stat    | <input type="text" value="Yes"/>                  |   |
| Burner Control        | <input type="text" value="Modulating"/>           |   |
| HETAS approved System | <input type="text" value="No"/>                   |   |
| Oil Pump Inside       | <input type="text" value="No"/>                   |   |
| FI Case               | <input type="text" value="0.00"/>                 |   |
| Flue Type             | <input type="text" value="Balanced"/>             |   |
| Fan Assisted Flue     | <input type="text" value="Yes"/>                  |   |
| 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="Unknown"/>              |   |
| Boiler Interlock      | <input type="text" value="Yes"/>                  |   |
| Combi boiler type     | <input type="text" value="Standard Combi"/>       |   |
| Combi keep hot type   | <input type="text" value="None"/>                 |   |

25.0 Main Heating 2

26.0 Heat Networks

## 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="Yes"/>            |
| Waste Water Heat Recovery Instantaneous System 1 | <input type="text" value="No"/>             |

# Summary for Input Data

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

## 28.1 Showers

| Description | Shower Type                               | Flow Rate [l/min] | Rated Power [kW] | Connected | Connected To           |
|-------------|-------------------------------------------|-------------------|------------------|-----------|------------------------|
| Shower 1    | Combi boiler or unvented hot water system | 11.00             |                  | Yes       | Instantaneous System 1 |

## 28.2 Flue Gas Heat Recovery System

|             |   |
|-------------|---|
| Database ID | 0 |
| Brand Model |   |
| Details     |   |

## 28.3 Waste Water Heat Recovery System

### 29.0 Hot Water Cylinder

|                          |      |
|--------------------------|------|
| Cylinder Stat            | None |
| Cylinder In Heated Space | No   |
| Independent Time Control | No   |
| In Airing Cupboard       | No   |

### 31.0 Thermal Store

|      |
|------|
| None |
|------|

### 32.0 Photovoltaic Unit

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

| PV Cells kWp | Orientation | Elevation | Overshading    | FGHRS | MCS Certificate | Overshading Factor | MCS Certificate Reference | Panel Manufacturer |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 2.00         | East        | 30°       | None Or Little | No    | No              | 1.00               |                           | N/a                |

### 34.0 Small-scale Hydro

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

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

## Recommendations

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

# Summary for Input Data

|                      |                            |               |                    |            |
|----------------------|----------------------------|---------------|--------------------|------------|
| Property Reference   | 008737 - The Avocado - Mid |               | Issued on Date     | 15/09/2023 |
| Assessment Reference | As Designed                | Prop Type Ref | 007837 Avocado MID |            |
| Property             | Plot , Fenay Bridge        |               |                    |            |

|                                    |          |               |       |      |       |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating                         | 93 A     | DER           | 11.23 | TER  | 11.73 |
| Environmental                      | 91 B     | % DER < TER   |       |      | 4.26  |
| CO <sub>2</sub> Emissions (t/year) | 0.79     | DFEE          | 31.89 | TFEE | 33.19 |
| Compliance Check                   | See BREL | % DFEE < TFEE |       |      | 3.93  |
| % DPER < TPER                      | 3.51     | DPER          | 59.18 | TPER | 61.33 |

|                  |                 |             |           |
|------------------|-----------------|-------------|-----------|
| Assessor Details | Mr. Dean Shores | Assessor ID | W976-0001 |
| Client           |                 |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | East                |        |
| Property Tenture               | 1                   |        |
| 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                 | 2022                |        |
| 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                   | N/A                 | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | Yes                 |        |

| 7.0 Measurements |                     |                      |                       |
|------------------|---------------------|----------------------|-----------------------|
|                  | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
| Basement:        | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| Ground floor:    | 8.79 m              | 35.19 m <sup>2</sup> | 2.38 m                |
| 1st Storey:      | 8.79 m              | 35.19 m <sup>2</sup> | 2.70 m                |
| 2nd Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 3rd Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 4th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 5th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 6th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 7th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 28.57 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls |             |                                                                                     |                              |                             |                             |                             |             |         |          |                       |
|--------------------|-------------|-------------------------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
| Description        | Type        | Construction                                                                        | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
| External Wall      | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.19                         | 60.00                       | 44.68                       | 31.77                       | 0.00        | None    | 12.91    | Enter Gross Area      |

| 9.1 Party Walls |                                 |                                                                                 |                              |                             |                        |             |         |  |  |
|-----------------|---------------------------------|---------------------------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|--|--|
| Description     | Type                            | Construction                                                                    | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |  |  |
| Party Wall      | Filled Cavity with Edge Sealing | Plasterboard on dabs mounted on cement render on both sides, AAC blocks, cavity | 0.00                         | 45.00                       | 81.46                  | 0.00        | None    |  |  |

| 9.2 Internal Walls |                              |                             |                        |  |
|--------------------|------------------------------|-----------------------------|------------------------|--|
| Description        | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |  |
| Internal Wall GF   | Plasterboard on timber frame | 9.00                        | 56.07                  |  |
| Internal Wall FF   | Plasterboard on timber frame | 9.00                        | 82.73                  |  |

## 10.0 External Roofs

# Summary for Input Data



| Description   | Type                   | Construction                             | U-Value<br>(W/m²K) | Kappa<br>(kJ/m²K) | Gross<br>Area(m²) | Nett<br>Area<br>(m²) | Shelter<br>Code | Shelter<br>Factor | Calculation<br>Type | Openings |
|---------------|------------------------|------------------------------------------|--------------------|-------------------|-------------------|----------------------|-----------------|-------------------|---------------------|----------|
| External Roof | External Plane<br>Roof | Plasterboard, insulated at ceiling level | 0.10               | 9.00              | 35.19             | 35.19                | None            | 0.00              | Enter Gross<br>Area | 0.00     |

## 10.2 Internal Ceilings

| Description         | Storey          | Construction                                   | Area (m²) |
|---------------------|-----------------|------------------------------------------------|-----------|
| Internal Ceiling GF | Lowest occupied | Plasterboard ceiling, carpeted chipboard floor | 35.19     |

## 11.0 Heat Loss Floors

| Description       | Type                 | Storey Index    | Construction                       | U-Value<br>(W/m²K) | Shelter Code | Shelter<br>Factor | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|----------------------|-----------------|------------------------------------|--------------------|--------------|-------------------|-------------------|-----------|
| Heatloss Floor GF | Ground Floor - Solid | Lowest occupied | Suspended concrete floor, carpeted | 0.12               | None         | 0.00              | 75.00             | 35.19     |

## 11.2 Internal Floors

| Description       | Storey<br>Index | Construction                                   | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|-----------------|------------------------------------------------|-------------------|-----------|
| Internal Floor FF |                 | Plasterboard ceiling, carpeted chipboard floor | 9.00              | 35.19     |

## 12.0 Opening Types

| Description | Data Source                  | Type       | Glazing                | Glazing<br>Gap | Filling<br>Type | G-value | Frame<br>Type | Frame<br>Factor | U Value<br>(W/m²K) |
|-------------|------------------------------|------------|------------------------|----------------|-----------------|---------|---------------|-----------------|--------------------|
| Windows     | BFRC, BSI or<br>CERTASS data | Window     | Double Low-E Soft 0.05 |                | Air Filled      | 0.52    | Wood          | 1.00            | 1.22               |
| Doors       | Manufacturer                 | Solid Door |                        |                | Air Filled      | 0.00    | Wood          | 0.70            | 1.20               |
| Patio Doors | BFRC, BSI or<br>CERTASS data | Window     | Double Low-E Soft 0.05 |                | Air Filled      | 0.31    | Wood          | 1.00            | 1.30               |

## 13.0 Openings

| Name             | Opening Type | Location      | Orientation | Area (m²) | Pitch |
|------------------|--------------|---------------|-------------|-----------|-------|
| Front Door       | Doors        | External Wall | East        | 2.15      | 0     |
| Front Window     | Windows      | External Wall | East        | 2.77      | 0     |
| Rear Windows     | Windows      | External Wall | West        | 2.30      | 0     |
| Rear Patio Doors | Patio Doors  | External Wall | West        | 5.69      | 0     |

## 14.0 Conservatory

## 15.0 Draught Proofing

 %

## 16.0 Draught Lobby

## 17.0 Thermal Bridging

## 17.1 List of Bridges

| Bridge Type                                          | Source Type            | Length | Psi  | Adjusted | Reference:       | Imported |
|------------------------------------------------------|------------------------|--------|------|----------|------------------|----------|
| E1 Steel lintel with perforated steel base plate     | Independently assessed | 7.83   | 0.17 | 0.17     | CBA              | No       |
| E3 Sill                                              | Independently assessed | 4.10   | 0.01 | 0.01     | CBA              | No       |
| E4 Jamb                                              | Independently assessed | 21.00  | 0.01 | 0.01     | CBA              | No       |
| E5 Ground floor (normal)                             | Independently assessed | 8.79   | 0.07 | 0.07     | CBA              | No       |
| E6 Intermediate floor within a dwelling              | Independently assessed | 8.79   | 0.01 | 0.01     | CBA              | No       |
| E10 Eaves (insulation at ceiling level)              | Independently assessed | 8.79   | 0.06 | 0.06     | CBA              | No       |
| E12 Gable (insulation at ceiling level)              | Independently assessed | 8.01   | 0.08 | 0.08     | CBA              | No       |
| E18 Party wall between dwellings                     | Independently assessed | 20.34  | 0.03 | 0.03     | CBA              | No       |
| P1 Party wall - Ground floor                         | Independently assessed | 16.02  | 0.12 | 0.12     | Besblock Example | No       |
| P4 Party wall - Roof (insulation at ceiling level)   | Independently assessed | 16.02  | 0.08 | 0.08     | CBA              | No       |
| P2 Party wall - Intermediate floor within a dwelling | Table K1 - Default     | 16.02  | 0.00 | 0.00     |                  | No       |

Y-value  W/m²K

## 18.0 Pressure Testing

|                           |                                          |                   |
|---------------------------|------------------------------------------|-------------------|
| Designed AP <sub>50</sub> | <input type="text" value="4.00"/>        | m³/(h.m²) @ 50 Pa |
| Property Tested?          | <input type="text" value="Yes"/>         |                   |
| Test Method               | <input type="text" value="Blower Door"/> |                   |
| As Built AP <sub>50</sub> | <input type="text" value="0.10"/>        | m³/(h.m²) @ 50 Pa |

## 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="500787"/>                                         |
| Duct Type                             | <input type="text" value="Flexible"/>                                       |
| MVHR Efficiency                       | <input type="text" value="0.00"/>                                           |
| Wet Rooms                             | <input type="text" value="2"/>                                              |

# Summary for Input Data

SFP from Installer Commissioning Certificate

No

## 19.1 Mechanical extract ventilation - Decentralised

| SFP  | Fan/Room Type                      | Count |
|------|------------------------------------|-------|
| 0.13 | In Room Fan<br>Kitchen             | 0     |
| 0.11 | In Room Fan Other<br>Wet Room      | 1     |
| 0.00 | In Duct Fan Kitchen                | 0     |
| 0.00 | In Duct Fan Other<br>Wet Room      | 0     |
| 0.10 | Through Wall Fan<br>Kitchen        | 1     |
| 0.10 | Through Wall Fan<br>Other Wet Room | 0     |

## 20.0 Fans, Open Fireplaces, Flues

### 21.0 Fixed Cooling System

No

### 22.0 Lighting

No Fixed Lighting

No

| Name       | Efficacy | Power | Capacity | Count |
|------------|----------|-------|----------|-------|
| Downlights | 80.00    | 28    | 2240     | 7     |

### 24.0 Main Heating 1

|                       |                      |
|-----------------------|----------------------|
| Database              |                      |
| Percentage of Heat    | 100.00 %             |
| Database Ref. No.     | 19003                |
| Fuel Type             | Mains gas            |
| SAP Code              | 0                    |
| In Winter             | 89.00                |
| In Summer             | 98.90                |
| Model Name            | LOGIC CODE COMBI2    |
| Manufacturer          | Ideal Boilers        |
| System Type           | Combi boiler         |
| Controls SAP Code     | 2110                 |
| Delayed Start Stat    | Yes                  |
| Burner Control        | Modulating           |
| HETAS approved System | No                   |
| Oil Pump Inside       | No                   |
| FI Case               | 0.00                 |
| Flue Type             | Balanced             |
| Fan Assisted Flue     | Yes                  |
| Is MHS Pumped         | Pump in heated space |
| Heating Pump Age      | 2013 or later        |
| Heat Emitter          | Radiators            |
| Flow Temperature      | Unknown              |
| Boiler Interlock      | Yes                  |
| Combi boiler type     | Standard Combi       |
| Combi keep hot type   | None                 |

### 25.0 Main Heating 2

None

### 26.0 Heat Networks

None

### 28.0 Water Heating

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

# Summary for Input Data

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

## 28.1 Showers

| Description | Shower Type                               | Flow Rate [l/min] | Rated Power [kW] | Connected | Connected To           |
|-------------|-------------------------------------------|-------------------|------------------|-----------|------------------------|
| Shower 1    | Combi boiler or unvented hot water system | 11.00             |                  | Yes       | Instantaneous System 1 |

## 28.2 Flue Gas Heat Recovery System

|             |   |
|-------------|---|
| Database ID | 0 |
| Brand Model |   |
| Details     |   |

## 28.3 Waste Water Heat Recovery System

|                          |      |
|--------------------------|------|
| 29.0 Hot Water Cylinder  | None |
| Cylinder Stat            | No   |
| Cylinder In Heated Space | No   |
| Independent Time Control | No   |
| In Airing Cupboard       | No   |

|                    |      |
|--------------------|------|
| 31.0 Thermal Store | None |
|--------------------|------|

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

| PV Cells kWp | Orientation | Elevation | Overshading    | FGHRS | MCS Certificate | Overshading Factor | MCS Certificate Reference | Panel Manufacturer |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 2.00         | East        | 30°       | None Or Little | No    | No              | 1.00               |                           | N/a                |

|                                           |        |
|-------------------------------------------|--------|
| 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   | 008737 - The Blueberry - End |               | Issued on Date           | 15/09/2023 |
| Assessment Reference | As Designed - As             | Prop Type Ref | 007837 The Blueberry END |            |
| Property             | Plot , Fenay Bridge          |               |                          |            |

|                                    |          |               |       |      |       |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating                         | 93 A     | DER           | 11.67 | TER  | 12.15 |
| Environmental                      | 90 B     | % DER < TER   |       |      | 3.95  |
| CO <sub>2</sub> Emissions (t/year) | 0.93     | DFEE          | 36.71 | TFEE | 38.46 |
| Compliance Check                   | See BREL | % DFEE < TFEE |       |      | 4.54  |
| % DPER < TPER                      | 3.10     | DPER          | 61.49 | TPER | 63.46 |

|                  |                 |             |           |
|------------------|-----------------|-------------|-----------|
| Assessor Details | Mr. Dean Shores | Assessor ID | W976-0001 |
| Client           |                 |             |           |

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

|                                |                      |        |
|--------------------------------|----------------------|--------|
| Orientation                    | East                 |        |
| Property Tenture               | 1                    |        |
| 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                 | 2022                 |        |
| 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                   | N/A                  | kJ/m²K |
|                                |                      |        |
| 7.0 Electricity Tariff         | Standard             |        |
| Smart electricity meter fitted | Yes                  |        |
| Smart gas meter fitted         | Yes                  |        |

| 7.0 Measurements |                     |                      |                       |
|------------------|---------------------|----------------------|-----------------------|
|                  | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
| Basement:        | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| Ground floor:    | 18.82 m             | 39.66 m <sup>2</sup> | 2.38 m                |
| 1st Storey:      | 18.82 m             | 39.66 m <sup>2</sup> | 2.70 m                |
| 2nd Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 3rd Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 4th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 5th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 6th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 7th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 31.66 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls |             |                                                                                     |                              |                             |                             |                             |             |         |          |                       |
|--------------------|-------------|-------------------------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
| Description        | Type        | Construction                                                                        | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
| External Wall      | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.19                         | 60.00                       | 95.62                       | 75.28                       | 0.00        | None    | 20.34    | Enter Gross Area      |

| 9.1 Party Walls |                                 |                                                                                 |                              |                             |                        |             |         |  |  |
|-----------------|---------------------------------|---------------------------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|--|--|
| Description     | Type                            | Construction                                                                    | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |  |  |
| Party Wall      | Filled Cavity with Edge Sealing | Plasterboard on dabs mounted on cement render on both sides, AAC blocks, cavity | 0.00                         | 45.00                       | 40.69                  | 0.00        | None    |  |  |

| 9.2 Internal Walls |                              |                             |                        |  |
|--------------------|------------------------------|-----------------------------|------------------------|--|
| Description        | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |  |
| Internal Wall GF   | Plasterboard on timber frame | 9.00                        | 49.41                  |  |
| Internal Wall FF   | Plasterboard on timber frame | 9.00                        | 81.75                  |  |

## 10.0 External Roofs



# Summary for Input Data



| Description   | Type                   | Construction                             | U-Value<br>(W/m²K) | Kappa<br>(kJ/m²K) | Gross<br>Area(m²) | Nett<br>Area<br>(m²) | Shelter<br>Code | Shelter<br>Factor | Calculation<br>Type | Openings |
|---------------|------------------------|------------------------------------------|--------------------|-------------------|-------------------|----------------------|-----------------|-------------------|---------------------|----------|
| External Roof | External Plane<br>Roof | Plasterboard, insulated at ceiling level | 0.10               | 9.00              | 39.66             | 39.66                | None            | 0.00              | Enter Gross<br>Area | 0.00     |

## 10.2 Internal Ceilings

| Description         | Storey          | Construction                                   | Area (m²) |
|---------------------|-----------------|------------------------------------------------|-----------|
| Internal Ceiling GF | Lowest occupied | Plasterboard ceiling, carpeted chipboard floor | 39.66     |

## 11.0 Heat Loss Floors

| Description       | Type                 | Storey Index    | Construction                       | U-Value<br>(W/m²K) | Shelter Code | Shelter<br>Factor | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|----------------------|-----------------|------------------------------------|--------------------|--------------|-------------------|-------------------|-----------|
| Heatloss Floor GF | Ground Floor - Solid | Lowest occupied | Suspended concrete floor, carpeted | 0.12               | None         | 0.00              | 75.00             | 39.66     |

## 11.2 Internal Floors

| Description       | Storey Index | Construction                                   | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|--------------|------------------------------------------------|-------------------|-----------|
| Internal Floor FF |              | Plasterboard ceiling, carpeted chipboard floor | 9.00              | 39.66     |

## 12.0 Opening Types

| Description | Data Source                  | Type       | Glazing                | Glazing<br>Gap | Filling<br>Type | G-value | Frame<br>Type | Frame<br>Factor | U Value<br>(W/m²K) |
|-------------|------------------------------|------------|------------------------|----------------|-----------------|---------|---------------|-----------------|--------------------|
| Windows     | BFRC, BSI or<br>CERTASS data | Window     | Double Low-E Soft 0.05 |                | Air Filled      | 0.52    | Wood          | 1.00            | 1.22               |
| Doors       | Manufacturer                 | Solid Door |                        |                | Air Filled      | 0.00    | Wood          | 0.70            | 1.20               |
| Patio Doors | BFRC, BSI or<br>CERTASS data | Window     | Double Low-E Soft 0.05 |                | Air Filled      | 0.31    | Wood          | 1.00            | 1.30               |

## 13.0 Openings

| Name            | Opening Type | Location      | Orientation | Area (m²) | Pitch |
|-----------------|--------------|---------------|-------------|-----------|-------|
| Front Door      | Doors        | External Wall | East        | 2.15      | 0     |
| Front Window    | Windows      | External Wall | East        | 5.72      | 0     |
| LHS Window      | Windows      | External Wall | South       | 2.29      | 0     |
| RHS Windows     | Windows      | External Wall | North       | 4.49      | 0     |
| LHS Patio Doors | Patio Doors  | External Wall | South       | 5.69      | 0     |

## 14.0 Conservatory

## 15.0 Draught Proofing

 %

## 16.0 Draught Lobby

## 17.0 Thermal Bridging

### 17.1 List of Bridges

| Bridge Type                                                      | Source Type              | Length | Psi   | Adjusted Reference:   | Imported |
|------------------------------------------------------------------|--------------------------|--------|-------|-----------------------|----------|
| E1 Steel lintel with perforated steel base plate                 | Independently assessed   | 12.03  | 0.17  | 0.17 CBA              | No       |
| E3 Sill                                                          | Independently assessed   | 8.97   | 0.01  | 0.01 CBA              | No       |
| E4 Jamb                                                          | Independently assessed   | 33.44  | 0.01  | 0.01 CBA              | No       |
| E5 Ground floor (normal)                                         | Independently assessed   | 18.82  | 0.07  | 0.07 CBA              | No       |
| E6 Intermediate floor within a dwelling                          | Independently assessed   | 18.82  | 0.01  | 0.01 CBA              | No       |
| E10 Eaves (insulation at ceiling level)                          | Independently assessed   | 5.63   | 0.06  | 0.06 CBA              | No       |
| E12 Gable (insulation at ceiling level)                          | Independently assessed   | 13.20  | 0.08  | 0.08 CBA              | No       |
| E16 Corner (normal)                                              | Independently assessed   | 20.32  | 0.05  | 0.05 CBA              | No       |
| E18 Party wall between dwellings                                 | Independently assessed   | 10.16  | 0.03  | 0.03 CBA              | No       |
| P1 Party wall - Ground floor                                     | Non Gov Approved Schemes | 8.01   | 0.12  | 0.12 Besblock Example | No       |
| P4 Party wall - Roof (insulation at ceiling level)               | Independently assessed   | 8.01   | 0.08  | 0.08 CBA              | No       |
| P2 Party wall - Intermediate floor within a dwelling             | Table K1 - Default       | 8.01   | 0.00  | 0.00                  | No       |
| E17 Corner (inverted – internal area greater than external area) | Independently assessed   | 10.16  | -0.08 | -0.08 CBA             | No       |

|         |                                   |       |
|---------|-----------------------------------|-------|
| Y-value | <input type="text" value="0.00"/> | W/m²K |
|---------|-----------------------------------|-------|

## 18.0 Pressure Testing

|                           |                                          |                   |
|---------------------------|------------------------------------------|-------------------|
|                           | <input type="text" value="Yes"/>         |                   |
| Designed AP <sub>50</sub> | <input type="text" value="4.00"/>        | m³/(h.m²) @ 50 Pa |
| Property Tested?          | <input type="text" value="Yes"/>         |                   |
| Test Method               | <input type="text" value="Blower Door"/> |                   |
| As Built AP <sub>50</sub> | <input type="text" value="0.10"/>        | m³/(h.m²) @ 50 Pa |

## 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="500787"/>                                         |
| Duct Type                             | <input type="text" value="Flexible"/>                                       |

# Summary for Input Data



|                                              |      |
|----------------------------------------------|------|
| MVHR Efficiency                              | 0.00 |
| Wet Rooms                                    | 3    |
| SFP from Installer Commissioning Certificate | No   |

## 19.1 Mechanical extract ventilation - Decentralised

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

## 20.0 Fans, Open Fireplaces, Flues

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

## 22.0 Lighting

|                   |                    |                   |             |                  |            |
|-------------------|--------------------|-------------------|-------------|------------------|------------|
| No Fixed Lighting | No                 |                   |             |                  |            |
|                   | Name<br>Downlights | Efficacy<br>80.00 | Power<br>28 | Capacity<br>2240 | Count<br>9 |

## 24.0 Main Heating 1

|                       |                      |   |
|-----------------------|----------------------|---|
|                       | Database             |   |
| Percentage of Heat    | 100.00               | % |
| Database Ref. No.     | 19003                |   |
| Fuel Type             | Mains gas            |   |
| SAP Code              | 0                    |   |
| In Winter             | 89.00                |   |
| In Summer             | 98.90                |   |
| Model Name            | LOGIC CODE COMBI2    |   |
| Manufacturer          | Ideal Boilers        |   |
| System Type           | Combi boiler         |   |
| Controls SAP Code     | 2110                 |   |
| Delayed Start Stat    | Yes                  |   |
| Burner Control        | Modulating           |   |
| HETAS approved System | No                   |   |
| Oil Pump Inside       | No                   |   |
| FI Case               | 0.00                 |   |
| Flue Type             | Balanced             |   |
| Fan Assisted Flue     | Yes                  |   |
| Is MHS Pumped         | Pump in heated space |   |
| Heating Pump Age      | 2013 or later        |   |
| Heat Emitter          | Radiators            |   |
| Flow Temperature      | Unknown              |   |
| Boiler Interlock      | Yes                  |   |
| Combi boiler type     | Standard Combi       |   |
| Combi keep hot type   | None                 |   |

|                     |      |
|---------------------|------|
| 25.0 Main Heating 2 | None |
|---------------------|------|

|                    |      |
|--------------------|------|
| 26.0 Heat Networks | None |
|--------------------|------|

## 28.0 Water Heating

|                               |                |
|-------------------------------|----------------|
| Water Heating                 | Main Heating 1 |
| SAP Code                      | 901            |
| Flue Gas Heat Recovery System | Yes            |

# Summary for Input Data

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

## 28.1 Showers

| Description | Shower Type                               | Flow Rate<br>[l/min] | Rated Power<br>[kW] | Connected | Connected To           |
|-------------|-------------------------------------------|----------------------|---------------------|-----------|------------------------|
| Shower 1    | Combi boiler or unvented hot water system | 11.00                |                     | Yes       | Instantaneous System 1 |

## 28.2 Flue Gas Heat Recovery System

|             |   |
|-------------|---|
| Database ID | 0 |
| Brand Model |   |
| Details     |   |

## 28.3 Waste Water Heat Recovery System

## 29.0 Hot Water Cylinder

|                          |      |
|--------------------------|------|
|                          | None |
| Cylinder Stat            | No   |
| Cylinder In Heated Space | No   |
| Independent Time Control | No   |
| In Airing Cupboard       | No   |

## 31.0 Thermal Store

|      |
|------|
| None |
|------|

## 32.0 Photovoltaic Unit

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

| PV Cells kWp | Orientation | Elevation | Overshading    | FGHRS | MCS Certificate | Overshading Factor | MCS Certificate Reference | Panel Manufacturer |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 2.40         | East        | 45°       | None Or Little | No    | No              | 1.00               |                           | N/a                |

## 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   | 008737 - The Buckwheat - End |               | Issued on Date           | 15/09/2023 |
| Assessment Reference | As Designed - As             | Prop Type Ref | 007837 The Buckwheat END |            |
| Property             | Plot , Fenay Bridge          |               |                          |            |

|                                    |          |               |       |      |       |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating                         | 93 A     | DER           | 11.67 | TER  | 12.16 |
| Environmental                      | 90 B     | % DER < TER   |       |      | 4.03  |
| CO <sub>2</sub> Emissions (t/year) | 0.93     | DFEE          | 36.73 | TFEE | 38.50 |
| Compliance Check                   | See BREL | % DFEE < TFEE |       |      | 4.60  |
| % DPER < TPER                      | 3.38     | DPER          | 61.41 | TPER | 63.56 |

|                  |                 |             |           |
|------------------|-----------------|-------------|-----------|
| Assessor Details | Mr. Dean Shores | Assessor ID | W976-0001 |
| Client           |                 |             |           |

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

|                                |                      |        |
|--------------------------------|----------------------|--------|
| Orientation                    | East                 |        |
| Property Tenture               | 1                    |        |
| 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                 | 2022                 |        |
| 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                   | N/A                  | kJ/m²K |
|                                |                      |        |
| 7.0 Electricity Tariff         | Standard             |        |
| Smart electricity meter fitted | Yes                  |        |
| Smart gas meter fitted         | Yes                  |        |

| 7.0 Measurements |                     |                      |                       |
|------------------|---------------------|----------------------|-----------------------|
|                  | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
| Basement:        | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| Ground floor:    | 18.82 m             | 39.65 m <sup>2</sup> | 2.38 m                |
| 1st Storey:      | 18.82 m             | 39.65 m <sup>2</sup> | 2.70 m                |
| 2nd Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 3rd Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 4th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 5th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 6th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 7th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 32.68 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls |             |                                                                                     |                              |                             |                             |                             |             |         |          |                       |
|--------------------|-------------|-------------------------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
| Description        | Type        | Construction                                                                        | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
| External Wall      | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.19                         | 60.00                       | 95.61                       | 75.26                       | 0.00        | None    | 20.35    | Enter Gross Area      |

| 9.1 Party Walls |                                 |                                                                                 |                              |                             |                        |             |         |  |  |
|-----------------|---------------------------------|---------------------------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|--|--|
| Description     | Type                            | Construction                                                                    | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |  |  |
| Party Wall      | Filled Cavity with Edge Sealing | Plasterboard on dabs mounted on cement render on both sides, AAC blocks, cavity | 0.00                         | 45.00                       | 40.69                  | 0.00        | None    |  |  |

| 9.2 Internal Walls |                              |                             |                        |  |
|--------------------|------------------------------|-----------------------------|------------------------|--|
| Description        | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |  |
| Internal Wall GF   | Plasterboard on timber frame | 9.00                        | 61.64                  |  |
| Internal Wall FF   | Plasterboard on timber frame | 9.00                        | 106.27                 |  |

## 10.0 External Roofs

# Summary for Input Data



| Description   | Type                   | Construction                             | U-Value<br>(W/m²K) | Kappa<br>(kJ/m²K) | Gross<br>Area(m²) | Nett<br>Area<br>(m²) | Shelter<br>Code | Shelter<br>Factor | Calculation<br>Type | Openings |
|---------------|------------------------|------------------------------------------|--------------------|-------------------|-------------------|----------------------|-----------------|-------------------|---------------------|----------|
| External Roof | External Plane<br>Roof | Plasterboard, insulated at ceiling level | 0.10               | 9.00              | 39.65             | 39.65                | None            | 0.00              | Enter Gross<br>Area | 0.00     |

## 10.2 Internal Ceilings

| Description         | Storey          | Construction                                   | Area (m²) |
|---------------------|-----------------|------------------------------------------------|-----------|
| Internal Ceiling GF | Lowest occupied | Plasterboard ceiling, carpeted chipboard floor | 39.65     |

## 11.0 Heat Loss Floors

| Description       | Type                 | Storey Index    | Construction                       | U-Value<br>(W/m²K) | Shelter Code | Shelter<br>Factor | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|----------------------|-----------------|------------------------------------|--------------------|--------------|-------------------|-------------------|-----------|
| Heatloss Floor GF | Ground Floor - Solid | Lowest occupied | Suspended concrete floor, carpeted | 0.12               | None         | 0.00              | 75.00             | 39.65     |

## 11.2 Internal Floors

| Description       | Storey Index | Construction                                   | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|--------------|------------------------------------------------|-------------------|-----------|
| Internal Floor FF |              | Plasterboard ceiling, carpeted chipboard floor | 9.00              | 39.65     |

## 12.0 Opening Types

| Description | Data Source                  | Type       | Glazing                | Glazing<br>Gap | Filling<br>Type | G-value | Frame<br>Type | Frame<br>Factor | U Value<br>(W/m²K) |
|-------------|------------------------------|------------|------------------------|----------------|-----------------|---------|---------------|-----------------|--------------------|
| Windows     | BFRC, BSI or<br>CERTASS data | Window     | Double Low-E Soft 0.05 |                | Air Filled      | 0.52    | Wood          | 1.00            | 1.22               |
| Doors       | Manufacturer                 | Solid Door |                        |                | Air Filled      | 0.00    | Wood          | 0.70            | 1.20               |
| Patio Doors | BFRC, BSI or<br>CERTASS data | Window     | Double Low-E Soft 0.05 |                | Air Filled      | 0.31    | Wood          | 1.00            | 1.30               |

## 13.0 Openings

| Name            | Opening Type | Location      | Orientation | Area (m²) | Pitch |
|-----------------|--------------|---------------|-------------|-----------|-------|
| Front Door      | Doors        | External Wall | East        | 2.15      | 0     |
| Front Window    | Windows      | External Wall | East        | 5.72      | 0     |
| LHS Window      | Windows      | External Wall | South       | 2.30      | 0     |
| RHS Windows     | Windows      | External Wall | North       | 4.49      | 0     |
| LHS Patio Doors | Patio Doors  | External Wall | South       | 5.69      | 0     |

## 14.0 Conservatory

## 15.0 Draught Proofing

 %

## 16.0 Draught Lobby

## 17.0 Thermal Bridging

### 17.1 List of Bridges

| Bridge Type                                                      | Source Type              | Length | Psi   | Adjusted Reference:   | Imported |
|------------------------------------------------------------------|--------------------------|--------|-------|-----------------------|----------|
| E1 Steel lintel with perforated steel base plate                 | Independently assessed   | 12.03  | 0.17  | 0.17 CBA              | No       |
| E3 Sill                                                          | Independently assessed   | 8.97   | 0.01  | 0.01 CBA              | No       |
| E4 Jamb                                                          | Independently assessed   | 33.44  | 0.01  | 0.01 CBA              | No       |
| E5 Ground floor (normal)                                         | Independently assessed   | 18.82  | 0.07  | 0.07 CBA              | No       |
| E6 Intermediate floor within a dwelling                          | Independently assessed   | 18.82  | 0.01  | 0.01 CBA              | No       |
| E10 Eaves (insulation at ceiling level)                          | Independently assessed   | 5.62   | 0.06  | 0.06 CBA              | No       |
| E12 Gable (insulation at ceiling level)                          | Independently assessed   | 13.20  | 0.08  | 0.08 CBA              | No       |
| E16 Corner (normal)                                              | Independently assessed   | 20.32  | 0.05  | 0.05 CBA              | No       |
| E18 Party wall between dwellings                                 | Independently assessed   | 10.16  | 0.03  | 0.03 CBA              | No       |
| P1 Party wall - Ground floor                                     | Non Gov Approved Schemes | 8.01   | 0.12  | 0.12 Besblock Example | No       |
| P4 Party wall - Roof (insulation at ceiling level)               | Independently assessed   | 8.01   | 0.08  | 0.08 CBA              | No       |
| P2 Party wall - Intermediate floor within a dwelling             | Table K1 - Default       | 8.01   | 0.00  | 0.00                  | No       |
| E17 Corner (inverted – internal area greater than external area) | Independently assessed   | 10.16  | -0.08 | -0.08 CBA             | No       |

|         |                                   |       |
|---------|-----------------------------------|-------|
| Y-value | <input type="text" value="0.00"/> | W/m²K |
|---------|-----------------------------------|-------|

## 18.0 Pressure Testing

|                           |                                          |                   |
|---------------------------|------------------------------------------|-------------------|
|                           | <input type="text" value="Yes"/>         |                   |
| Designed AP <sub>50</sub> | <input type="text" value="4.00"/>        | m³/(h.m²) @ 50 Pa |
| Property Tested?          | <input type="text" value="Yes"/>         |                   |
| Test Method               | <input type="text" value="Blower Door"/> |                   |
| As Built AP <sub>50</sub> | <input type="text" value="0.10"/>        | m³/(h.m²) @ 50 Pa |

## 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="500787"/>                                         |
| Duct Type                             | <input type="text" value="Flexible"/>                                       |

# Summary for Input Data



|                                              |      |
|----------------------------------------------|------|
| MVHR Efficiency                              | 0.00 |
| Wet Rooms                                    | 3    |
| SFP from Installer Commissioning Certificate | No   |

## 19.1 Mechanical extract ventilation - Decentralised

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

## 20.0 Fans, Open Fireplaces, Flues

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

## 22.0 Lighting

| No Fixed Lighting | No       |       |          |       |  |
|-------------------|----------|-------|----------|-------|--|
| Name              | Efficacy | Power | Capacity | Count |  |
| Downlights        | 80.00    | 28    | 2240     | 10    |  |

## 24.0 Main Heating 1

|                       |                      |   |  |  |
|-----------------------|----------------------|---|--|--|
| Database              |                      |   |  |  |
| Percentage of Heat    | 100.00               | % |  |  |
| Database Ref. No.     | 19003                |   |  |  |
| Fuel Type             | Mains gas            |   |  |  |
| SAP Code              | 0                    |   |  |  |
| In Winter             | 89.00                |   |  |  |
| In Summer             | 98.90                |   |  |  |
| Model Name            | LOGIC CODE COMBI2    |   |  |  |
| Manufacturer          | Ideal Boilers        |   |  |  |
| System Type           | Combi boiler         |   |  |  |
| Controls SAP Code     | 2110                 |   |  |  |
| Delayed Start Stat    | Yes                  |   |  |  |
| Burner Control        | Modulating           |   |  |  |
| HETAS approved System | No                   |   |  |  |
| Oil Pump Inside       | No                   |   |  |  |
| FI Case               | 0.00                 |   |  |  |
| Flue Type             | Balanced             |   |  |  |
| Fan Assisted Flue     | Yes                  |   |  |  |
| Is MHS Pumped         | Pump in heated space |   |  |  |
| Heating Pump Age      | 2013 or later        |   |  |  |
| Heat Emitter          | Radiators            |   |  |  |
| Flow Temperature      | Unknown              |   |  |  |
| Boiler Interlock      | Yes                  |   |  |  |
| Combi boiler type     | Standard Combi       |   |  |  |
| Combi keep hot type   | None                 |   |  |  |

|                     |      |
|---------------------|------|
| 25.0 Main Heating 2 | None |
|---------------------|------|

|                    |      |
|--------------------|------|
| 26.0 Heat Networks | None |
|--------------------|------|

## 28.0 Water Heating

|                               |                |
|-------------------------------|----------------|
| Water Heating                 | Main Heating 1 |
| SAP Code                      | 901            |
| Flue Gas Heat Recovery System | Yes            |

# Summary for Input Data

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

## 28.1 Showers

| Description | Shower Type                               | Flow Rate<br>[l/min] | Rated Power<br>[kW] | Connected | Connected To           |
|-------------|-------------------------------------------|----------------------|---------------------|-----------|------------------------|
| Shower 1    | Combi boiler or unvented hot water system | 11.00                |                     | Yes       | Instantaneous System 1 |

## 28.2 Flue Gas Heat Recovery System

|             |   |
|-------------|---|
| Database ID | 0 |
| Brand Model |   |
| Details     |   |

## 28.3 Waste Water Heat Recovery System

## 29.0 Hot Water Cylinder

|                          |      |
|--------------------------|------|
|                          | None |
| Cylinder Stat            | No   |
| Cylinder In Heated Space | No   |
| Independent Time Control | No   |
| In Airing Cupboard       | No   |

## 31.0 Thermal Store

|      |
|------|
| None |
|------|

## 32.0 Photovoltaic Unit

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

| PV Cells kWp | Orientation | Elevation | Overshading    | FGHRS | MCS Certificate | Overshading Factor | MCS Certificate Reference | Panel Manufacturer |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 2.40         | East        | 45°       | None Or Little | No    | No              | 1.00               |                           | N/a                |

## 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   | 008737 - The Dandelion - Det |               | Issued on Date           | 15/09/2023 |
| Assessment Reference | As Designed - As             | Prop Type Ref | 007837 The Dandelion Det |            |
| Property             | Plot , Fenay Bridge          |               |                          |            |

|                                    |          |               |       |      |       |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating                         | 92 A     | DER           | 11.98 | TER  | 12.12 |
| Environmental                      | 90 B     | % DER < TER   |       |      | 1.16  |
| CO <sub>2</sub> Emissions (t/year) | 1.11     | DFEE          | 39.58 | TFEE | 41.67 |
| Compliance Check                   | See BREL | % DFEE < TFEE |       |      | 5.01  |
| % DPER < TPER                      | 0.37     | DPER          | 63.16 | TPER | 63.40 |

|                  |                 |             |           |
|------------------|-----------------|-------------|-----------|
| Assessor Details | Mr. Dean Shores | Assessor ID | W976-0001 |
| Client           |                 |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | East                |        |
| Property Tenture               | 1                   |        |
| 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                 | 2022                |        |
| 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                   | N/A                 | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | Yes                 |        |

| 7.0 Measurements |                     |                      |                       |
|------------------|---------------------|----------------------|-----------------------|
|                  | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
| Basement:        | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| Ground floor:    | 27.86 m             | 46.25 m <sup>2</sup> | 2.38 m                |
| 1st Storey:      | 27.86 m             | 46.25 m <sup>2</sup> | 2.70 m                |
| 2nd Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 3rd Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 4th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 5th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 6th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 7th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 36.65 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls |             |                                                                                     |                              |                             |                             |                             |             |         |                  |
|--------------------|-------------|-------------------------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|------------------|
| Description        | Type        | Construction                                                                        | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings         |
| External Wall      | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.19                         | 60.00                       | 141.53                      | 123.08                      | 0.00        | None    | 18.45            |
|                    |             |                                                                                     |                              |                             |                             |                             |             |         | Enter Gross Area |

| 9.1 Party Walls |                                 |                                                                                 |                              |                             |                        |             |         |  |  |
|-----------------|---------------------------------|---------------------------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|--|--|
| Description     | Type                            | Construction                                                                    | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |  |  |
| Party Wall      | Filled Cavity with Edge Sealing | Plasterboard on dabs mounted on cement render on both sides, AAC blocks, cavity | 0.00                         | 45.00                       | 43.03                  | 0.00        | None    |  |  |

| 9.2 Internal Walls |                              |  |  |  |  |  |                             |                        |  |
|--------------------|------------------------------|--|--|--|--|--|-----------------------------|------------------------|--|
| Description        | Construction                 |  |  |  |  |  | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |  |
| Internal Wall GF   | Plasterboard on timber frame |  |  |  |  |  | 9.00                        | 79.52                  |  |
| Internal Wall FF   | Plasterboard on timber frame |  |  |  |  |  | 9.00                        | 93.73                  |  |

## 10.0 External Roofs



# Summary for Input Data



| Description   | Type                   | Construction                             | U-Value<br>(W/m²K) | Kappa<br>(kJ/m²K) | Gross<br>Area(m²) | Nett<br>Area<br>(m²) | Shelter<br>Code | Shelter<br>Factor | Calculation<br>Type | Openings |
|---------------|------------------------|------------------------------------------|--------------------|-------------------|-------------------|----------------------|-----------------|-------------------|---------------------|----------|
| External Roof | External Plane<br>Roof | Plasterboard, insulated at ceiling level | 0.10               | 9.00              | 46.25             | 46.25                | None            | 0.00              | Enter Gross<br>Area | 0.00     |

## 10.2 Internal Ceilings

| Description         | Storey          | Construction                                   | Area (m²) |
|---------------------|-----------------|------------------------------------------------|-----------|
| Internal Ceiling GF | Lowest occupied | Plasterboard ceiling, carpeted chipboard floor | 46.25     |

## 11.0 Heat Loss Floors

| Description       | Type                 | Storey Index    | Construction                       | U-Value<br>(W/m²K) | Shelter Code | Shelter<br>Factor | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|----------------------|-----------------|------------------------------------|--------------------|--------------|-------------------|-------------------|-----------|
| Heatloss Floor GF | Ground Floor - Solid | Lowest occupied | Suspended concrete floor, carpeted | 0.12               | None         | 0.00              | 75.00             | 46.25     |

## 11.2 Internal Floors

| Description       | Storey Index | Construction                                   | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|--------------|------------------------------------------------|-------------------|-----------|
| Internal Floor FF |              | Plasterboard ceiling, carpeted chipboard floor | 9.00              | 46.25     |

## 12.0 Opening Types

| Description | Data Source                  | Type       | Glazing                | Glazing<br>Gap | Filling<br>Type | G-value | Frame<br>Type | Frame<br>Factor | U Value<br>(W/m²K) |
|-------------|------------------------------|------------|------------------------|----------------|-----------------|---------|---------------|-----------------|--------------------|
| Windows     | BFRC, BSI or<br>CERTASS data | Window     | Double Low-E Soft 0.05 |                | Air Filled      | 0.52    | Wood          | 1.00            | 1.22               |
| Doors       | Manufacturer                 | Solid Door |                        |                | Air Filled      | 0.00    | Wood          | 0.70            | 1.20               |
| Patio Doors | BFRC, BSI or<br>CERTASS data | Window     | Double Low-E Soft 0.05 |                | Air Filled      | 0.31    | Wood          | 1.00            | 1.30               |

## 13.0 Openings

| Name             | Opening Type | Location      | Orientation | Area (m²) | Pitch |
|------------------|--------------|---------------|-------------|-----------|-------|
| Front Door       | Doors        | External Wall | East        | 2.15      | 0     |
| Front Window     | Windows      | External Wall | East        | 5.97      | 0     |
| LHS Window       | Windows      | External Wall | South       | 0.77      | 0     |
| Rear Windows     | Windows      | External Wall | West        | 3.87      | 0     |
| Rear Patio Doors | Patio Doors  | External Wall | West        | 5.69      | 0     |

## 14.0 Conservatory

## 15.0 Draught Proofing

 %

## 16.0 Draught Lobby

## 17.0 Thermal Bridging

## 17.1 List of Bridges

| Bridge Type                                      | Source Type            | Length | Psi  | Adjusted Reference: | Imported |
|--------------------------------------------------|------------------------|--------|------|---------------------|----------|
| E1 Steel lintel with perforated steel base plate | Independently assessed | 11.57  | 0.17 | 0.17 CBA            | No       |
| E3 Sill                                          | Independently assessed | 7.50   | 0.01 | 0.01 CBA            | No       |
| E4 Jamb                                          | Independently assessed | 26.40  | 0.01 | 0.01 CBA            | No       |
| E5 Ground floor (normal)                         | Independently assessed | 27.86  | 0.07 | 0.07 CBA            | No       |
| E6 Intermediate floor within a dwelling          | Independently assessed | 27.86  | 0.01 | 0.01 CBA            | No       |
| E10 Eaves (insulation at ceiling level)          | Independently assessed | 10.29  | 0.06 | 0.06 CBA            | No       |
| E12 Gable (insulation at ceiling level)          | Independently assessed | 16.94  | 0.08 | 0.08 CBA            | No       |
| E16 Corner (normal)                              | Independently assessed | 20.34  | 0.05 | 0.05 CBA            | No       |

|         |                                   |       |
|---------|-----------------------------------|-------|
| Y-value | <input type="text" value="0.03"/> | W/m²K |
|---------|-----------------------------------|-------|

## 18.0 Pressure Testing

|                           |                                          |                   |
|---------------------------|------------------------------------------|-------------------|
|                           | <input type="text" value="Yes"/>         |                   |
| Designed AP <sub>50</sub> | <input type="text" value="4.00"/>        | m³/(h.m²) @ 50 Pa |
| Property Tested?          | <input type="text" value="Yes"/>         |                   |
| Test Method               | <input type="text" value="Blower Door"/> |                   |
| As Built AP <sub>50</sub> | <input type="text" value="0.10"/>        | m³/(h.m²) @ 50 Pa |

## 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="500787"/>                                         |
| Duct Type                                    | <input type="text" value="Flexible"/>                                       |
| MVHR Efficiency                              | <input type="text" value="0.00"/>                                           |
| Wet Rooms                                    | <input type="text" value="4"/>                                              |
| 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 |
|------|---------------------------------|-------|
| 0.13 | 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     |
| 0.10 | Through Wall Fan Kitchen        | 1     |
| 0.10 | Through Wall Fan Other Wet Room | 2     |

## 20.0 Fans, Open Fireplaces, Flues

### 21.0 Fixed Cooling System

No

### 22.0 Lighting

No Fixed Lighting

No

| Name       | Efficacy | Power | Capacity | Count |
|------------|----------|-------|----------|-------|
| Downlights | 80.00    | 28    | 2240     | 7     |

### 24.0 Main Heating 1

|                       |                      |
|-----------------------|----------------------|
| Database              |                      |
| Percentage of Heat    | 100.00 %             |
| Database Ref. No.     | 19003                |
| Fuel Type             | Mains gas            |
| SAP Code              | 0                    |
| In Winter             | 89.00                |
| In Summer             | 98.90                |
| Model Name            | LOGIC CODE COMBI2    |
| Manufacturer          | Ideal Boilers        |
| System Type           | Combi boiler         |
| Controls SAP Code     | 2110                 |
| Delayed Start Stat    | Yes                  |
| Burner Control        | Modulating           |
| HETAS approved System | No                   |
| Oil Pump Inside       | No                   |
| FI Case               | 0.00                 |
| Flue Type             | Balanced             |
| Fan Assisted Flue     | Yes                  |
| Is MHS Pumped         | Pump in heated space |
| Heating Pump Age      | 2013 or later        |
| Heat Emitter          | Radiators            |
| Flow Temperature      | Unknown              |
| Boiler Interlock      | Yes                  |
| Combi boiler type     | Standard Combi       |
| Combi keep hot type   | None                 |

### 25.0 Main Heating 2

None

### 26.0 Heat Networks

None

### 28.0 Water Heating

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

# Summary for Input Data

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

## 28.1 Showers

| Description | Shower Type                               | Flow Rate [l/min] | Rated Power [kW] | Connected | Connected To           |
|-------------|-------------------------------------------|-------------------|------------------|-----------|------------------------|
| Shower 1    | Combi boiler or unvented hot water system | 11.00             |                  | Yes       | Instantaneous System 1 |

## 28.2 Flue Gas Heat Recovery System

|             |   |
|-------------|---|
| Database ID | 0 |
| Brand Model |   |
| Details     |   |

## 28.3 Waste Water Heat Recovery System

## 29.0 Hot Water Cylinder

|                          |      |
|--------------------------|------|
|                          | None |
| Cylinder Stat            | No   |
| Cylinder In Heated Space | No   |
| Independent Time Control | No   |
| In Airing Cupboard       | No   |

## 31.0 Thermal Store

|  |      |
|--|------|
|  | None |
|--|------|

## 32.0 Photovoltaic Unit

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

| PV Cells kWp | Orientation | Elevation | Overshading    | FGHRS | MCS Certificate | Overshading Factor | MCS Certificate Reference | Panel Manufacturer |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 2.40         | East        | 30°       | None Or Little | No    | No              | 1.00               |                           | N/a                |

## 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   | 007837 - The Linden - Det |               | Issued on Date        | 15/09/2023 |
| Assessment Reference | As Designed - As          | Prop Type Ref | 007837 The Linden DET |            |
| Property             | Plot , Fenay Bridge       |               |                       |            |

|                                    |          |               |       |      |       |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating                         | 94 A     | DER           | 10.27 | TER  | 10.42 |
| Environmental                      | 90 B     | % DER < TER   |       |      | 1.44  |
| CO <sub>2</sub> Emissions (t/year) | 1.23     | DFEE          | 38.17 | TFEE | 40.19 |
| Compliance Check                   | See BREL | % DFEE < TFEE |       |      | 5.00  |
| % DPER < TPER                      | 0.62     | DPER          | 54.08 | TPER | 54.42 |

|                  |                 |             |           |
|------------------|-----------------|-------------|-----------|
| Assessor Details | Mr. Dean Shores | Assessor ID | W976-0001 |
| Client           |                 |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | East                |        |
| Property Tenture               | 1                   |        |
| 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                 | 2022                |        |
| 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                   | N/A                 | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | Yes                 |        |

| 7.0 Measurements |                     |                      |                       |
|------------------|---------------------|----------------------|-----------------------|
|                  | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
| Basement:        | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| Ground floor:    | 32.04 m             | 59.17 m <sup>2</sup> | 2.38 m                |
| 1st Storey:      | 32.04 m             | 59.17 m <sup>2</sup> | 2.70 m                |
| 2nd Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 3rd Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 4th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 5th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 6th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 7th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 12.76 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls |             |                                                                                     |                              |                             |                             |                             |             |         |          |                       |
|--------------------|-------------|-------------------------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
| Description        | Type        | Construction                                                                        | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
| External Wall      | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.19                         | 60.00                       | 162.76                      | 139.14                      | 0.00        | None    | 23.62    | Enter Gross Area      |

| 9.1 Party Walls |                                 |                                                                                 |                              |                             |                        |             |         |  |  |
|-----------------|---------------------------------|---------------------------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|--|--|
| Description     | Type                            | Construction                                                                    | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |  |  |
| Party Wall      | Filled Cavity with Edge Sealing | Plasterboard on dabs mounted on cement render on both sides, AAC blocks, cavity | 0.00                         | 45.00                       | 39.55                  | 0.00        | None    |  |  |

| 9.2 Internal Walls |                              |                             |                        |  |
|--------------------|------------------------------|-----------------------------|------------------------|--|
| Description        | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |  |
| Internal Wall GF   | Plasterboard on timber frame | 9.00                        | 54.90                  |  |
| Internal Wall FF   | Plasterboard on timber frame | 9.00                        | 133.48                 |  |

## 10.0 External Roofs

# Summary for Input Data

| Description   | Type                | Construction                             | U-Value<br>(W/m²K) | Kappa<br>(kJ/m²K) | Gross<br>Area(m²) | Nett<br>Area<br>(m²) | Shelter<br>Code | Shelter<br>Factor | Calculation<br>Type | Openings |
|---------------|---------------------|------------------------------------------|--------------------|-------------------|-------------------|----------------------|-----------------|-------------------|---------------------|----------|
| External Roof | External Plane Roof | Plasterboard, insulated at ceiling level | 0.10               | 9.00              | 59.17             | 59.17                | None            | 0.00              | Enter Gross Area    | 0.00     |

### 10.2 Internal Ceilings

| Description         | Storey          | Construction                                   | Area (m²) |
|---------------------|-----------------|------------------------------------------------|-----------|
| Internal Ceiling GF | Lowest occupied | Plasterboard ceiling, carpeted chipboard floor | 59.17     |

### 11.0 Heat Loss Floors

| Description       | Type                 | Storey Index    | Construction                       | U-Value<br>(W/m²K) | Shelter Code | Shelter Factor | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|----------------------|-----------------|------------------------------------|--------------------|--------------|----------------|-------------------|-----------|
| Heatloss Floor GF | Ground Floor - Solid | Lowest occupied | Suspended concrete floor, carpeted | 0.12               | None         | 0.00           | 75.00             | 59.17     |

### 11.2 Internal Floors

| Description       | Storey Index | Construction                                   | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|--------------|------------------------------------------------|-------------------|-----------|
| Internal Floor FF |              | Plasterboard ceiling, carpeted chipboard floor | 9.00              | 59.17     |

### 12.0 Opening Types

| Description | Data Source               | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value<br>(W/m²K) |
|-------------|---------------------------|------------|------------------------|-------------|--------------|---------|------------|--------------|--------------------|
| Windows     | BFRC, BSI or CERTASS data | Window     | Double Low-E Soft 0.05 |             | Air Filled   | 0.52    | Wood       | 1.00         | 1.22               |
| Doors       | Manufacturer              | Solid Door |                        |             | Air Filled   | 0.00    | Wood       | 0.70         | 1.20               |
| Patio Doors | BFRC, BSI or CERTASS data | Window     | Double Low-E Soft 0.05 |             | Air Filled   | 0.31    | Wood       | 1.00         | 1.30               |

### 13.0 Openings

| Name             | Opening Type | Location      | Orientation | Area (m²) | Pitch |
|------------------|--------------|---------------|-------------|-----------|-------|
| Front Door       | Doors        | External Wall | East        | 2.15      | 0     |
| Front Window     | Windows      | External Wall | East        | 10.46     | 0     |
| LHS Window       | Windows      | External Wall | South       | 0.77      | 0     |
| Rear Windows     | Windows      | External Wall | West        | 3.78      | 0     |
| Rear Patio Doors | Patio Doors  | External Wall | West        | 5.69      | 0     |
| RHS Windows      | Windows      | External Wall | North       | 0.77      | 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                 | Independently assessed | 14.97  | 0.17 | 0.17     | CBA        | No       |
| E3 Sill                                                          | Independently assessed | 10.90  | 0.01 | 0.01     | CBA        | No       |
| E4 Jamb                                                          | Independently assessed | 34.96  | 0.01 | 0.01     | CBA        | No       |
| E5 Ground floor (normal)                                         | Independently assessed | 32.04  | 0.07 | 0.07     | CBA        | No       |
| E6 Intermediate floor within a dwelling                          | Independently assessed | 32.04  | 0.01 | 0.01     | CBA        | No       |
| E10 Eaves (insulation at ceiling level)                          | Independently assessed | 15.21  | 0.06 | 0.06     | CBA        | No       |
| E12 Gable (insulation at ceiling level)                          | Independently assessed | 16.83  | 0.08 | 0.08     | CBA        | No       |
| E16 Corner (normal)                                              | Independently assessed | 30.48  | 0.05 | 0.05     | CBA        | No       |
| E17 Corner (inverted – internal area greater than external area) | Table K1 - Default     | 10.16  | 0.00 | 0.00     |            | No       |

### Y-value

0.00 W/m²K

### 18.0 Pressure Testing

Yes

Designed AP<sub>50</sub> 4.00 m³/(h.m²) @ 50 Pa

Property Tested? Yes

Test Method Blower Door

As Built AP<sub>50</sub> 0.10 m³/(h.m²) @ 50 Pa

### 19.0 Mechanical Ventilation

#### Mechanical Ventilation

Mechanical Ventilation System Present Yes

Approved Installation Yes

Mechanical Ventilation data Type Database

Type Mechanical extract ventilation - decentralised

MV Reference Number 500787

Duct Type Flexible

MVHR Efficiency 0.00

# Summary for Input Data

Wet Rooms

SFP from Installer Commissioning Certificate

## 19.1 Mechanical extract ventilation - Decentralised

| SFP  | Fan/Room Type                   | Count |
|------|---------------------------------|-------|
| 0.13 | 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     |
| 0.10 | Through Wall Fan Kitchen        | 1     |
| 0.10 | Through Wall Fan Other Wet Room | 1     |

## 20.0 Fans, Open Fireplaces, Flues

21.0 Fixed Cooling System

## 22.0 Lighting

| No Fixed Lighting | <input type="text" value="No"/> |       |          |       |  |
|-------------------|---------------------------------|-------|----------|-------|--|
| Name              | Efficacy                        | Power | Capacity | Count |  |
| Downlights        | 80.00                           | 28    | 2240     | 19    |  |

## 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="19003"/>                |   |
| Fuel Type             | <input type="text" value="Mains gas"/>            |   |
| SAP Code              | <input type="text" value="0"/>                    |   |
| In Winter             | <input type="text" value="89.00"/>                |   |
| In Summer             | <input type="text" value="98.90"/>                |   |
| Model Name            | <input type="text" value="LOGIC CODE COMBI2"/>    |   |
| Manufacturer          | <input type="text" value="Ideal Boilers"/>        |   |
| System Type           | <input type="text" value="Combi boiler"/>         |   |
| Controls SAP Code     | <input type="text" value="2110"/>                 |   |
| Delayed Start Stat    | <input type="text" value="Yes"/>                  |   |
| Burner Control        | <input type="text" value="Modulating"/>           |   |
| HETAS approved System | <input type="text" value="No"/>                   |   |
| Oil Pump Inside       | <input type="text" value="No"/>                   |   |
| FI Case               | <input type="text" value="0.00"/>                 |   |
| Flue Type             | <input type="text" value="Balanced"/>             |   |
| Fan Assisted Flue     | <input type="text" value="Yes"/>                  |   |
| 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="Unknown"/>              |   |
| Boiler Interlock      | <input type="text" value="Yes"/>                  |   |
| Combi boiler type     | <input type="text" value="Standard Combi"/>       |   |
| Combi keep hot type   | <input type="text" value="None"/>                 |   |

25.0 Main Heating 2

26.0 Heat Networks

## 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="Yes"/>            |
| Waste Water Heat Recovery Instantaneous System 1 | <input type="text" value="No"/>             |

# Summary for Input Data

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

## 28.1 Showers

| Description | Shower Type                               | Flow Rate [l/min] | Rated Power [kW] | Connected | Connected To           |
|-------------|-------------------------------------------|-------------------|------------------|-----------|------------------------|
| Shower 1    | Combi boiler or unvented hot water system | 11.00             |                  | Yes       | Instantaneous System 1 |
| Shower 2    | Combi boiler or unvented hot water system | 11.00             |                  | No        |                        |

## 28.2 Flue Gas Heat Recovery System

|             |   |
|-------------|---|
| Database ID | 0 |
| Brand Model |   |
| Details     |   |

## 28.3 Waste Water Heat Recovery System

|                          |      |
|--------------------------|------|
| 29.0 Hot Water Cylinder  | None |
| Cylinder Stat            | No   |
| Cylinder In Heated Space | No   |
| Independent Time Control | No   |
| In Airing Cupboard       | No   |

## 31.0 Thermal Store

|      |
|------|
| None |
|------|

## 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 |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 3.20         | East        | 30°       | None Or Little | No    | No              | 1.00               |                           | N/a                |

## 34.0 Small-scale Hydro

|                                           |        |
|-------------------------------------------|--------|
| 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   | 007837 - The Eucalyptus - Det |               | Issued on Date            | 15/09/2023 |
| Assessment Reference | As Designed - As              | Prop Type Ref | 007837 The Eucalyptus DET |            |
| Property             | Plot , Fenay Bridge           |               |                           |            |

|                                    |          |               |       |      |       |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating                         | 93 A     | DER           | 11.50 | TER  | 11.81 |
| Environmental                      | 90 B     | % DER < TER   |       |      | 2.62  |
| CO <sub>2</sub> Emissions (t/year) | 1.16     | DFEE          | 39.85 | TFEE | 42.07 |
| Compliance Check                   | See BREL | % DFEE < TFEE |       |      | 5.27  |
| % DPER < TPER                      | 1.90     | DPER          | 60.62 | TPER | 61.80 |

|                  |                 |             |           |
|------------------|-----------------|-------------|-----------|
| Assessor Details | Mr. Dean Shores | Assessor ID | W976-0001 |
| Client           |                 |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | East                |        |
| Property Tenture               | 1                   |        |
| 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                 | 2022                |        |
| 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                   | N/A                 | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | Yes                 |        |

| 7.0 Measurements |                     |                      |                       |
|------------------|---------------------|----------------------|-----------------------|
|                  | Heat Loss Perimeter | Internal Floor Area  | Average Storey Height |
| Basement:        | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| Ground floor:    | 29.68 m             | 48.47 m <sup>2</sup> | 2.38 m                |
| 1st Storey:      | 29.68 m             | 51.74 m <sup>2</sup> | 2.70 m                |
| 2nd Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 3rd Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 4th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 5th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 6th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |
| 7th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  | 0.00 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 11.56 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls |             |                                                                                     |                              |                             |                             |                             |             |         |          |                       |
|--------------------|-------------|-------------------------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|---------|----------|-----------------------|
| Description        | Type        | Construction                                                                        | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter | Openings | Area Calculation Type |
| External Wall      | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.19                         | 60.00                       | 150.77                      | 132.28                      | 0.00        | None    | 18.49    | Enter Gross Area      |

| 9.1 Party Walls |                                 |                                                                                 |                              |                             |                        |             |         |  |  |
|-----------------|---------------------------------|---------------------------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|--|--|
| Description     | Type                            | Construction                                                                    | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |  |  |
| Party Wall      | Filled Cavity with Edge Sealing | Plasterboard on dabs mounted on cement render on both sides, AAC blocks, cavity | 0.00                         | 45.00                       | 39.55                  | 0.00        | None    |  |  |

| 9.2 Internal Walls |                              |                             |                        |  |
|--------------------|------------------------------|-----------------------------|------------------------|--|
| Description        | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |  |
| Internal Wall GF   | Plasterboard on timber frame | 9.00                        | 72.27                  |  |
| Internal Wall FF   | Plasterboard on timber frame | 9.00                        | 115.85                 |  |

## 10.0 External Roofs



# Summary for Input Data



| Description   | Type                | Construction                             | U-Value<br>(W/m²K) | Kappa<br>(kJ/m²K) | Gross<br>Area(m²) | Nett<br>Area<br>(m²) | Shelter<br>Code | Shelter<br>Factor | Calculation<br>Type | Openings |
|---------------|---------------------|------------------------------------------|--------------------|-------------------|-------------------|----------------------|-----------------|-------------------|---------------------|----------|
| External Roof | External Plane Roof | Plasterboard, insulated at ceiling level | 0.10               | 9.00              | 51.74             | 51.74                | None            | 0.00              | Enter Gross Area    | 0.00     |

### 10.2 Internal Ceilings

| Description         | Storey          | Construction                                   | Area (m²) |
|---------------------|-----------------|------------------------------------------------|-----------|
| Internal Ceiling GF | Lowest occupied | Plasterboard ceiling, carpeted chipboard floor | 39.89     |

### 11.0 Heat Loss Floors

| Description       | Type                   | Storey Index    | Construction                                    | U-Value<br>(W/m²K) | Shelter Code | Shelter Factor | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|------------------------|-----------------|-------------------------------------------------|--------------------|--------------|----------------|-------------------|-----------|
| Heatloss Floor GF | Ground Floor - Solid   | Lowest occupied | Suspended concrete floor, carpeted              | 0.12               | None         | 0.00           | 75.00             | 48.47     |
| Exposed Floor     | Exposed Floor - Timber | +1              | Timber exposed floor, insulation between joists | 0.13               | None         | 0.00           | 20.00             | 3.27      |

### 11.2 Internal Floors

| Description       | Storey Index | Construction                                   | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|--------------|------------------------------------------------|-------------------|-----------|
| Internal Floor FF |              | Plasterboard ceiling, carpeted chipboard floor | 9.00              | 48.47     |

### 12.0 Opening Types

| Description | Data Source               | Type       | Glazing                | Glazing Gap | Filling Type | G-value | Frame Type | Frame Factor | U Value<br>(W/m²K) |
|-------------|---------------------------|------------|------------------------|-------------|--------------|---------|------------|--------------|--------------------|
| Windows     | BFRC, BSI or CERTASS data | Window     | Double Low-E Soft 0.05 |             | Air Filled   | 0.52    | Wood       | 1.00         | 1.22               |
| Doors       | Manufacturer              | Solid Door |                        |             | Air Filled   | 0.00    | Wood       | 0.70         | 1.20               |
| Patio Doors | BFRC, BSI or CERTASS data | Window     | Double Low-E Soft 0.05 |             | Air Filled   | 0.31    | Wood       | 1.00         | 1.30               |

### 13.0 Openings

| Name             | Opening Type | Location      | Orientation | Area (m²) | Pitch |
|------------------|--------------|---------------|-------------|-----------|-------|
| Front Door       | Doors        | External Wall | East        | 2.15      | 0     |
| Front Window     | Windows      | External Wall | East        | 5.24      | 0     |
| LHS Window       | Windows      | External Wall | South       | 0.77      | 0     |
| Rear Windows     | Windows      | External Wall | West        | 3.87      | 0     |
| Rear Patio Doors | Patio Doors  | External Wall | West        | 5.69      | 0     |
| RHS Windows      | Windows      | External Wall | North       | 0.77      | 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                 | Independently assessed | 11.89  | 0.17  | 0.17 CBA            | No       |
| E3 Sill                                                          | Independently assessed | 8.16   | 0.01  | 0.01 CBA            | No       |
| E4 Jamb                                                          | Independently assessed | 28.66  | 0.01  | 0.01 CBA            | No       |
| E5 Ground floor (normal)                                         | Independently assessed | 29.68  | 0.07  | 0.07 CBA            | No       |
| E6 Intermediate floor within a dwelling                          | Independently assessed | 25.92  | 0.01  | 0.01 CBA            | No       |
| E10 Eaves (insulation at ceiling level)                          | Independently assessed | 18.48  | 0.06  | 0.06 CBA            | No       |
| E12 Gable (insulation at ceiling level)                          | Independently assessed | 11.20  | 0.08  | 0.08 CBA            | No       |
| E16 Corner (normal)                                              | Independently assessed | 22.70  | 0.05  | 0.05 CBA            | No       |
| E20 Exposed floor (normal)                                       | Table K1 - Default     | 3.76   | 0.32  | 0.32                | No       |
| E21 Exposed floor (inverted)                                     | Table K1 - Default     | 3.76   | 0.32  | 0.32                | No       |
| E17 Corner (inverted – internal area greater than external area) | Independently assessed | 2.38   | -0.08 | -0.08               | No       |

### Y-value

0.00

 W/m²K
  

### 18.0 Pressure Testing

Yes

Designed AP<sub>50</sub>

4.00

 m³/(h.m²) @ 50 Pa
  

Property Tested?

Yes

Test Method

Blower Door

As Built AP<sub>50</sub>

0.10

 m³/(h.m²) @ 50 Pa
  

### 19.0 Mechanical Ventilation

#### Mechanical Ventilation

Mechanical Ventilation System Present

Yes

Approved Installation

Yes

Mechanical Ventilation data Type

Database

Type

Mechanical extract ventilation - decentralised

MV Reference Number

500787

# Summary for Input Data

|                                              |          |
|----------------------------------------------|----------|
| Duct Type                                    | Flexible |
| MVHR Efficiency                              | 0.00     |
| Wet Rooms                                    | 4        |
| SFP from Installer Commissioning Certificate | No       |

## 19.1 Mechanical extract ventilation - Decentralised

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

## 20.0 Fans, Open Fireplaces, Flues

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

## 22.0 Lighting

| No Fixed Lighting | No       |       |          |       |  |
|-------------------|----------|-------|----------|-------|--|
| Name              | Efficacy | Power | Capacity | Count |  |
| Downlights        | 80.00    | 28    | 2240     | 12    |  |

## 24.0 Main Heating 1

|                       |                      |  |   |  |  |
|-----------------------|----------------------|--|---|--|--|
| Database              |                      |  |   |  |  |
| Percentage of Heat    | 100.00               |  | % |  |  |
| Database Ref. No.     | 19003                |  |   |  |  |
| Fuel Type             | Mains gas            |  |   |  |  |
| SAP Code              | 0                    |  |   |  |  |
| In Winter             | 89.00                |  |   |  |  |
| In Summer             | 98.90                |  |   |  |  |
| Model Name            | LOGIC CODE COMBI2    |  |   |  |  |
| Manufacturer          | Ideal Boilers        |  |   |  |  |
| System Type           | Combi boiler         |  |   |  |  |
| Controls SAP Code     | 2110                 |  |   |  |  |
| Delayed Start Stat    | Yes                  |  |   |  |  |
| Burner Control        | Modulating           |  |   |  |  |
| HETAS approved System | No                   |  |   |  |  |
| Oil Pump Inside       | No                   |  |   |  |  |
| FI Case               | 0.00                 |  |   |  |  |
| Flue Type             | Balanced             |  |   |  |  |
| Fan Assisted Flue     | Yes                  |  |   |  |  |
| Is MHS Pumped         | Pump in heated space |  |   |  |  |
| Heating Pump Age      | 2013 or later        |  |   |  |  |
| Heat Emitter          | Radiators            |  |   |  |  |
| Flow Temperature      | Unknown              |  |   |  |  |
| Boiler Interlock      | Yes                  |  |   |  |  |
| Combi boiler type     | Standard Combi       |  |   |  |  |
| Combi keep hot type   | None                 |  |   |  |  |

|                     |      |
|---------------------|------|
| 25.0 Main Heating 2 | None |
|---------------------|------|

|                    |      |
|--------------------|------|
| 26.0 Heat Networks | None |
|--------------------|------|

## 28.0 Water Heating

|               |                |
|---------------|----------------|
| Water Heating | Main Heating 1 |
| SAP Code      | 901            |

# Summary for Input Data

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

## 28.1 Showers

| Description | Shower Type                               | Flow Rate<br>[l/min] | Rated Power<br>[kW] | Connected | Connected To           |
|-------------|-------------------------------------------|----------------------|---------------------|-----------|------------------------|
| Shower 1    | Combi boiler or unvented hot water system | 11.00                |                     | Yes       | Instantaneous System 1 |
| Shower 2    | Combi boiler or unvented hot water system | 11.00                |                     | No        |                        |

## 28.2 Flue Gas Heat Recovery System

|             |   |
|-------------|---|
| Database ID | 0 |
| Brand Model |   |
| Details     |   |

## 28.3 Waste Water Heat Recovery System

## 29.0 Hot Water Cylinder

|                          |    |
|--------------------------|----|
| Cylinder Stat            | No |
| Cylinder In Heated Space | No |
| Independent Time Control | No |
| In Airing Cupboard       | No |

## 31.0 Thermal Store

|      |
|------|
| None |
|------|

## 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 |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 2.80         | East        | 45°       | None Or Little | No    | No              | 1.00               |                           | N/a                |

## 34.0 Small-scale Hydro

|                                           |        |
|-------------------------------------------|--------|
| 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   | 007837 - The Ironbark - DET |               | Issued on Date          | 15/09/2023 |
| Assessment Reference | As Designed - As            | Prop Type Ref | 007837 The Ironbark DET |            |
| Property             | Plot , Fenay Bridge         |               |                         |            |

|                                    |          |               |       |      |       |
|------------------------------------|----------|---------------|-------|------|-------|
| SAP Rating                         | 94 A     | DER           | 11.43 | TER  | 11.54 |
| Environmental                      | 90 B     | % DER < TER   |       |      | 0.95  |
| CO <sub>2</sub> Emissions (t/year) | 1.21     | DFEE          | 42.42 | TFEE | 45.61 |
| Compliance Check                   | See BREL | % DFEE < TFEE |       |      | 6.99  |
| % DPER < TPER                      | 0.55     | DPER          | 60.20 | TPER | 60.53 |

|                  |                 |             |           |
|------------------|-----------------|-------------|-----------|
| Assessor Details | Mr. Dean Shores | Assessor ID | W976-0001 |
| Client           |                 |             |           |

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

|                                |                     |        |
|--------------------------------|---------------------|--------|
| Orientation                    | East                |        |
| Property Tenture               | 1                   |        |
| 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                 | 2022                |        |
| 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                   | N/A                 | kJ/m²K |
|                                |                     |        |
| 7.0 Electricity Tariff         | Standard            |        |
| Smart electricity meter fitted | Yes                 |        |
| Smart gas meter fitted         | Yes                 |        |

| 7.0 Measurements | Heat Loss Perimeter | Internal Floor Area  | Unheated Space Floor Area | Average Storey Height |
|------------------|---------------------|----------------------|---------------------------|-----------------------|
| Basement:        | 0.00 m              | 0.00 m <sup>2</sup>  | 19.87 m <sup>2</sup>      | 0.00 m                |
| Ground floor:    | 31.62 m             | 42.57 m <sup>2</sup> |                           | 2.70 m                |
| 1st Storey:      | 31.62 m             | 62.44 m <sup>2</sup> |                           | 2.38 m                |
| 2nd Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  |                           | 0.00 m                |
| 3rd Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  |                           | 0.00 m                |
| 4th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  |                           | 0.00 m                |
| 5th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  |                           | 0.00 m                |
| 6th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  |                           | 0.00 m                |
| 7th Storey:      | 0.00 m              | 0.00 m <sup>2</sup>  |                           | 0.00 m                |

|                 |       |                |
|-----------------|-------|----------------|
| 8.0 Living Area | 11.18 | m <sup>2</sup> |
|-----------------|-------|----------------|

| 9.0 External Walls |             |                                                                                     |                              |                             |                             |                             |             |                        |          |                       |
|--------------------|-------------|-------------------------------------------------------------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------|------------------------|----------|-----------------------|
| Description        | Type        | Construction                                                                        | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Gross Area(m <sup>2</sup> ) | Nett Area (m <sup>2</sup> ) | Shelter Res | Shelter                | Openings | Area Calculation Type |
| External Wall      | Cavity Wall | Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure | 0.19                         | 60.00                       | 135.22                      | 112.65                      | 0.00        | None                   | 22.57    | Enter Gross Area      |
| Garage Wall        | Solid Wall  | Solid wall : dense plaster, insulation, any outside structure                       | 0.26                         | 17.00                       | 25.41                       | 25.41                       | 0.55        | Garage Single 2 Inside | 0.00     | Enter Gross Area      |

| 9.1 Party Walls |                                 |                                                                                 |                              |                             |                        |             |         |
|-----------------|---------------------------------|---------------------------------------------------------------------------------|------------------------------|-----------------------------|------------------------|-------------|---------|
| Description     | Type                            | Construction                                                                    | U-Value (W/m <sup>2</sup> K) | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) | Shelter Res | Shelter |
| Party Wall      | Filled Cavity with Edge Sealing | Plasterboard on dabs mounted on cement render on both sides, AAC blocks, cavity | 0.00                         | 45.00                       | 39.55                  | 0.00        | None    |

| 9.2 Internal Walls |                              |                             |                        |
|--------------------|------------------------------|-----------------------------|------------------------|
| Description        | Construction                 | Kappa (kJ/m <sup>2</sup> K) | Area (m <sup>2</sup> ) |
| Internal Wall GF   | Plasterboard on timber frame | 9.00                        | 67.21                  |
| Internal Wall FF   | Plasterboard on timber frame | 9.00                        | 119.48                 |

# Summary for Input Data



## 10.0 External Roofs

| Description   | Type                   | Construction                             | U-Value<br>(W/m²K) | Kappa<br>(kJ/m²K) | Gross<br>Area(m²) | Nett<br>Area<br>(m²) | Shelter<br>Code | Shelter<br>Factor | Calculation<br>Type | Openings |
|---------------|------------------------|------------------------------------------|--------------------|-------------------|-------------------|----------------------|-----------------|-------------------|---------------------|----------|
| External Roof | External Plane<br>Roof | Plasterboard, insulated at ceiling level | 0.10               | 9.00              | 62.44             | 62.44                | None            | 0.00              | Enter Gross<br>Area | 0.00     |

## 10.2 Internal Ceilings

| Description         | Storey          | Construction                                   | Area (m²) |
|---------------------|-----------------|------------------------------------------------|-----------|
| Internal Ceiling GF | Lowest occupied | Plasterboard ceiling, carpeted chipboard floor | 42.57     |

## 11.0 Heat Loss Floors

| Description       | Type                      | Storey Index    | Construction                                    | U-Value<br>(W/m²K) | Shelter Code           | Shelter<br>Factor | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|---------------------------|-----------------|-------------------------------------------------|--------------------|------------------------|-------------------|-------------------|-----------|
| Heatloss Floor GF | Ground Floor - Solid      | Lowest occupied | Suspended concrete floor, carpeted              | 0.12               | None                   | 0.00              | 75.00             | 42.57     |
| Exposed Floor     | Exposed Floor -<br>Timber | +1              | Timber exposed floor, insulation between joists | 0.13               | Garage Single 2 Inside | 0.55              | 20.00             | 19.87     |

## 11.2 Internal Floors

| Description       | Storey<br>Index | Construction                                   | Kappa<br>(kJ/m²K) | Area (m²) |
|-------------------|-----------------|------------------------------------------------|-------------------|-----------|
| Internal Floor FF |                 | Plasterboard ceiling, carpeted chipboard floor | 9.00              | 42.57     |

## 12.0 Opening Types

| Description      | Data Source                  | Type             | Glazing                | Glazing<br>Gap | Filling<br>Type | G-value | Frame<br>Type | Frame<br>Factor | U Value<br>(W/m²K) |
|------------------|------------------------------|------------------|------------------------|----------------|-----------------|---------|---------------|-----------------|--------------------|
| Windows          | BFRC, BSI or<br>CERTASS data | Window           | Double Low-E Soft 0.05 |                | Air Filled      | 0.52    | Wood          | 1.00            | 1.22               |
| Doors            | Manufacturer                 | Solid Door       |                        |                | Air Filled      | 0.00    | Wood          | 0.70            | 1.20               |
| Patio Doors      | BFRC, BSI or<br>CERTASS data | Window           | Double Low-E Soft 0.05 |                | Air Filled      | 0.31    | Wood          | 1.00            | 1.30               |
| Half Glazed Door | Manufacturer                 | Half Glazed Door | Double Low-E Soft 0.05 |                | Air Filled      | 0.63    | Wood          | 0.70            | 1.20               |

## 13.0 Openings

| Name             | Opening Type     | Location      | Orientation | Area (m²) | Pitch |
|------------------|------------------|---------------|-------------|-----------|-------|
| Front Door       | Doors            | External Wall | East        | 2.15      | 0     |
| Front Window     | Windows          | External Wall | East        | 8.02      | 0     |
| Rear Windows     | Windows          | External Wall | West        | 4.57      | 0     |
| Rear Patio Doors | Patio Doors      | External Wall | West        | 5.69      | 0     |
| Rear Door        | Half Glazed Door | External Wall | West        | 2.14      | 0     |

## 14.0 Conservatory

## 15.0 Draught Proofing

 %

## 16.0 Draught Lobby

## 17.0 Thermal Bridging

### 17.1 List of Bridges

| Bridge Type                                                      | Source Type            | Length | Psi  | Adjusted Reference: | Imported |
|------------------------------------------------------------------|------------------------|--------|------|---------------------|----------|
| E1 Steel lintel with perforated steel base plate                 | Independently assessed | 13.95  | 0.17 | 0.17 CBA            | No       |
| E3 Sill                                                          | Independently assessed | 8.86   | 0.01 | 0.01 CBA            | No       |
| E4 Jamb                                                          | Independently assessed | 33.34  | 0.01 | 0.01 CBA            | No       |
| E5 Ground floor (normal)                                         | Independently assessed | 22.21  | 0.07 | 0.07 CBA            | No       |
| E6 Intermediate floor within a dwelling                          | Independently assessed | 22.21  | 0.01 | 0.01 CBA            | No       |
| E10 Eaves (insulation at ceiling level)                          | Independently assessed | 16.26  | 0.06 | 0.06 CBA            | No       |
| E12 Gable (insulation at ceiling level)                          | Independently assessed | 15.36  | 0.08 | 0.08 CBA            | No       |
| E16 Corner (normal)                                              | Independently assessed | 17.62  | 0.05 | 0.05 CBA            | No       |
| E20 Exposed floor (normal)                                       | Independently assessed | 9.41   | 0.10 | 0.10                | No       |
| E21 Exposed floor (inverted)                                     | Independently assessed | 9.41   | 0.11 | 0.11                | No       |
| E17 Corner (inverted – internal area greater than external area) | Independently assessed | 2.70   | 0.08 | 0.08                | No       |
| E5 Ground floor (normal)                                         | Independently assessed | 9.41   | 0.07 | 0.07                | No       |
| E16 Corner (normal)                                              | Independently assessed | 5.40   | 0.05 | 0.05                | No       |

Y-value  W/m²K

## 18.0 Pressure Testing

|                           |                                          |                   |
|---------------------------|------------------------------------------|-------------------|
| Designed AP <sub>50</sub> | <input type="text" value="4.00"/>        | m³/(h.m²) @ 50 Pa |
| Property Tested?          | <input type="text" value="Yes"/>         |                   |
| Test Method               | <input type="text" value="Blower Door"/> |                   |
| As Built AP <sub>50</sub> | <input type="text" value="0.10"/>        | m³/(h.m²) @ 50 Pa |

## 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"/> |

# Summary for Input Data

|                                              |                                                |
|----------------------------------------------|------------------------------------------------|
| Type                                         | Mechanical extract ventilation - decentralised |
| MV Reference Number                          | 500787                                         |
| Duct Type                                    | Flexible                                       |
| MVHR Efficiency                              | 0.00                                           |
| Wet Rooms                                    | 4                                              |
| SFP from Installer Commissioning Certificate | No                                             |

## 19.1 Mechanical extract ventilation - Decentralised

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

## 20.0 Fans, Open Fireplaces, Flues

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

## 22.0 Lighting

|                   |            |          |       |          |       |
|-------------------|------------|----------|-------|----------|-------|
| No Fixed Lighting | No         |          |       |          |       |
|                   | Name       | Efficacy | Power | Capacity | Count |
|                   | Downlights | 80.00    | 28    | 2240     | 12    |

## 24.0 Main Heating 1

|                       |                      |   |
|-----------------------|----------------------|---|
|                       | Database             |   |
| Percentage of Heat    | 100.00               | % |
| Database Ref. No.     | 19003                |   |
| Fuel Type             | Mains gas            |   |
| SAP Code              | 0                    |   |
| In Winter             | 89.00                |   |
| In Summer             | 98.90                |   |
| Model Name            | LOGIC CODE COMBI2    |   |
| Manufacturer          | Ideal Boilers        |   |
| System Type           | Combi boiler         |   |
| Controls SAP Code     | 2110                 |   |
| Delayed Start Stat    | Yes                  |   |
| Burner Control        | Modulating           |   |
| HETAS approved System | No                   |   |
| Oil Pump Inside       | No                   |   |
| FI Case               | 0.00                 |   |
| Flue Type             | Balanced             |   |
| Fan Assisted Flue     | Yes                  |   |
| Is MHS Pumped         | Pump in heated space |   |
| Heating Pump Age      | 2013 or later        |   |
| Heat Emitter          | Radiators            |   |
| Flow Temperature      | Unknown              |   |
| Boiler Interlock      | Yes                  |   |
| Combi boiler type     | Standard Combi       |   |
| Combi keep hot type   | None                 |   |

|                     |      |
|---------------------|------|
| 25.0 Main Heating 2 | None |
|---------------------|------|

|                    |      |
|--------------------|------|
| 26.0 Heat Networks | None |
|--------------------|------|

## 28.0 Water Heating

# Summary for Input Data

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

## 28.1 Showers

| Description | Shower Type                               | Flow Rate [l/min] | Rated Power [kW] | Connected | Connected To           |
|-------------|-------------------------------------------|-------------------|------------------|-----------|------------------------|
| Shower 1    | Combi boiler or unvented hot water system | 11.00             |                  | Yes       | Instantaneous System 1 |
| Shower 2    | Combi boiler or unvented hot water system | 11.00             |                  | No        |                        |

## 28.2 Flue Gas Heat Recovery System

|             |   |
|-------------|---|
| Database ID | 0 |
| Brand Model |   |
| Details     |   |

## 28.3 Waste Water Heat Recovery System

## 29.0 Hot Water Cylinder

|                          |      |
|--------------------------|------|
|                          | None |
| Cylinder Stat            | No   |
| Cylinder In Heated Space | No   |
| Independent Time Control | No   |
| In Airing Cupboard       | No   |

## 31.0 Thermal Store

|  |      |
|--|------|
|  | None |
|--|------|

## 32.0 Photovoltaic Unit

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

| PV Cells kWp | Orientation | Elevation | Overshading    | FGHRS | MCS Certificate | Overshading Factor | MCS Certificate Reference | Panel Manufacturer |
|--------------|-------------|-----------|----------------|-------|-----------------|--------------------|---------------------------|--------------------|
| 3.20         | East        | 30°       | None Or Little | No    | No              | 1.00               |                           | N/a                |

## 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 |