Energy & Sustainability Statement

Former Thakeham Mushroom Site

Storrington Road

Thakeham

West Sussex

RH20 3GJ

Bellway Homes Ltd (Strategic Land)

Report No: PA-ES-BHSL-FTMS-26-01

Report Date: February 2026

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1. PROJECT DETAILS

Type of Application	Full Planning Application
Project Name	Former Thakeham Mushroom Site
Project Address	Former Thakeham Mushroom Site, Storrington Road, Thakeham, West Sussex, RH20 3GJ
Project Description	Demolition of existing buildings and the redevelopment of the site as a residential led development comprising 150 dwellings including affordable housing, land for the community land trust, works to public right of way and associated landscaping, open space and infrastructure.
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Report Issue Number	Date	Reason	Author
01	09/02/26	For Issue	MH
02			
03			

2. EXECUTIVE SUMMARY

Introduction

This Energy & Sustainability Statement has been prepared by Abbey Consultants (Southern) Ltd on behalf of Bellway Homes Ltd (Strategic Land)(the 'Applicant' hereafter) to accompany the submission of a full planning application for the proposed development at the Former Thakeham Mushroom Site, Storrington Road, Thakeham, West Sussex, RH20 3GJ (hereafter 'the site').

The proposal encompasses:

> *"Demolition of existing buildings and the redevelopment of the site as a residential led development comprising 150 dwellings including affordable housing, land for the community land trust, works to public right of way and associated landscaping, open space and infrastructure."*

The site is located within the administrative boundaries of Horsham District Council and West Sussex County Council.

This report has been prepared in accordance with the requirements at both national and local level, as set out in the National Planning Policy Framework (2024) and the Horsham District Planning Framework (2015). Further consideration has also been give to the Shaping Development in Horsham District Planning Advice Note (2025).

The report outlines the key features and strategies that will be adopted by the development team to enhance the energy and sustainability performance of the proposed development.

Energy Strategy

The strategy for reducing energy use and associated carbon emissions through the design of the scheme follows the energy hierarchy of 'Be Lean', 'Be Clean and 'Be Green'.

The proposed development has been assessed using Elmhurst Energy's latest version of their Standard Assessment Procedure (SAP) software (Design SAP 10) which uses the SAP 10.2 methodology. This assessment has determined the Building Regulations Part L baseline, to which the scheme must comply with, and each stage of the energy hierarchy will be compared against.

Firstly, the energy demand is reduced at the 'Be Lean' stage of the energy hierarchy. This includes a set of energy efficiency measures, including the following:

- The thermal performance of the proposed fabric will exceed Part L (2021) minimum requirements in terms of U-values and air tightness.
- Orientation has been considered in the design of the façades to ensure energy use is balanced through daylight provision and thermal comfort.
- The detailed design will follow recognised construction details to ensure insulation continuity for minimising thermal bridging.
- Solar control glass will be utilised to ensure solar gains are balanced to lower the heat demand but also assist in mitigating the risk of overheating.
- Light fittings of low energy types will be specified throughout the scheme.

The 'Be Clean' stage of the energy strategy explores the potential for to a district heat network to serve this scheme. However, this development proposal is deemed unsuitable for this type of heat network. Alternatively, individual heating systems have been specified for the dwellings.

The 'Be Green' stage of the energy hierarchy introduces low carbon energy supply systems to the houses in the form of individual air source heat pumps. These will efficiently supply the houses with space heating and hot water. Although the proposed heating system will rely on electricity to provide power for the heat pumps, it will support the shift towards carbon neutrality. This is due to the ongoing decarbonisation of the electricity grid, meaning that grid electricity will eventually be generated solely through renewable sources. Therefore, this scheme will be less dependent on fossil fuels and will be future proofed against any future ban of gas heating.

The energy strategy also acknowledges the incoming Future Homes and Buildings Standard, however the details of this are yet to be finalised. When this scheme reaches detailed design stage, this energy strategy should be reviewed to ensure that the proposals make best use of the technology available at the time and are fully compliant with any updated regulatory requirements.

Carbon Reductions

Through implementation of the energy strategy, the table below details the regulated carbon dioxide emissions and savings that are anticipated at each stage of the energy hierarchy.

Table 1: Summary of CO_2 emissions savings

Stage of Energy Hierarchy	Regulated CO_2 Emissions (tonnes/year)
Total Part L 2021 Baseline	87.95
Total After 'Be Lean'	86.61
Total After 'Be Green'	31.63
Total Saving	**56.32**
Total Improvement	**64%**

After all of the measures in the energy strategy have been accounted for, the proposed development achieves an overall on-site reduction of 64% in regulated carbon dioxide emissions over Part L 2021. This equates to an annual saving of an estimated 56.32 tonnes in regulated CO_2 emissions.

The energy strategy detailed herein is in accordance with the adopted planning policy requirements of Horsham District Council.

Sustainability Strategy

The proposed strategy in relation to sustainable design and construction is detailed in Section 11.

The key sustainability measures incorporate into the development proposals are summarised below:

- A high quality construction and design specification will prioritise materials within 'A+', 'A' or 'B' ratings, and low embodied carbon materials selected wherever feasible using a whole life-cycle approach. Minimisation of waste and promotion of Circular Economy Measures into all aspects of design, construction and operation.
- A commitment that the proposed water saving measures will keep the water usage of each dwelling to less than 110 litres per person per day. This minimises water consumption in line with the requirements of Policy 37 of the Horsham District Planning Framework (2015).
- Details the measures that will be introduced to help mitigate against the risk of overheating to the dwellings in the summer months.

3. INTRODUCTION

This report has been prepared by Abbey Consultants (Southern) Ltd, a specialist environmental and energy consultancy on behalf of Bellway Homes Ltd (Strategic Land) in support of the full planning application for the proposed development at the Former Thakeham Mushroom Site, Storrington Road, Thakeham, West Sussex, RH20 3GJ.

Figure 1 below details the proposed site layout.

Figure 1: Proposed Site Plan

The site is located within the administrative boundaries of Havant Borough Council and Hampshire County Council.

The proposed development for this Reserved Matters Applications is described as:

> *"Demolition of existing buildings and the redevelopment of the site as a residential led development comprising 150 dwellings including affordable housing, land for the community land trust, works to public right of way and associated landscaping, open space and infrastructure."*

The first section of this report details the proposed Energy Strategy for the development. This establishes a baseline assessment of the energy demands and associated CO_2 emissions for the development.

It then follows widely recognised Energy Hierarchy approach of Be Lean, Be Clean and Be Green to enable the maximum viable reductions in Regulated CO_2 emissions to be achieved.

1. Be Lean: use less energy and manage demand during operation through fabric and servicing improvements and the incorporation of flexibility measures;

2. Be Clean: exploit local energy resources and supply energy efficiently and cleanly by connecting to district heating networks;

3. Be Green: explore opportunities for renewable energy by producing, storing and/or using renewable energy on-site.

The second section of this report details the Sustainability Strategy. This covers the relevant aspects of sustainability relating to the Site, including mitigation measures against the effects of climate change.

The report takes into consideration the layout, use and requirements for the development to recommend a strategy that integrates the most suitable technologies available that are commercially viable, whilst also achieving compliance with all of the planning requirements which are applicable to this development.

4. PLANNING POLICY

An effective planning system is required to contribute to achieving sustainable development.

Sustainable development is defined as having the following three overarching objectives which are interdependent and need to be pursued in mutually supportive ways: an economic objective, a social objective, and an environmental objective.

1. Economic objective – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;
2. Social objective – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and
3. Environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

4.1. NATIONAL PLANNING POLICY FRAMEWORK (NPPF) 2024

The NPPF sets out the Government's planning policies for England and how these should be applied. It provides a framework within which locally-prepared plans can provide for housing and other development in a sustainable manner. Preparing and maintaining up-to-date plans should be seen as a priority in meeting this objective.

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

Paragraph 161. The planning system should support the transition to net zero by 2050 and take full account of all climate impacts including overheating, water scarcity, storm and flood risks and coastal change. It should help to: shape places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and improve resilience; encourage the reuse of existing resources, including the conversion of existing buildings; and support renewable and low carbon energy and associated infrastructure.

Paragraph 162. Plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating and drought from rising temperatures. Policies should support appropriate measures to ensure the future health and resilience of communities and infrastructure to climate change impacts, such as providing space for physical protection measures, or making provision for the possible future relocation of vulnerable development and infrastructure.

Paragraph 163. The need to mitigate and adapt to climate change should also be considered in preparing and assessing planning applications, taking into account the full range of potential climate change impacts.

Paragraph 164. New development should be planned for in ways that:

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

Paragraph 165. To help increase the use and supply of renewable and low carbon energy and heat, plans should:

a. provide a positive strategy for energy from these sources, that maximises the potential for suitable development, and their future re-powering and life extension, while ensuring that adverse impacts are addressed appropriately (including cumulative landscape and visual impacts);

b. consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure their development; and
c. identify opportunities for development to draw its energy supply from decentralised, renewable, or low carbon energy supply systems and for co-locating potential heat customers and suppliers.

Paragraph 166. In determining planning applications, local planning authorities should expect new development to:

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

Paragraph 167. Local planning authorities should also give significant weight to the need to support energy efficiency and low carbon heating improvements to existing buildings, both domestic and non-domestic (including through installation of heat pumps and solar panels where these do not already benefit from permitted development rights). Where the proposals would affect conservation areas, listed buildings or other relevant designated heritage assets, local planning authorities should also apply the policies set out in chapter 16 of this Framework.

Paragraph 168. When determining planning applications for renewable and low carbon developments and their associated infrastructure, local planning authorities should:

a. not require applicants to demonstrate the overall need for renewable or low carbon energy, and give significant weight to the benefits associated with renewable and low carbon energy generation and the proposal's contribution to a net zero future;
b. recognise that small-scale and community-led projects provide a valuable contribution to cutting greenhouse gas emissions;
c. in the case of applications for the repowering and life-extension of existing renewable sites, give significant weight to the benefits of utilising an established site.

Paragraph 169. Once suitable areas for renewable and low carbon energy have been identified in plans, local planning authorities should expect subsequent applications for commercial scale projects outside these areas to demonstrate that the proposed location meets the criteria used in identifying suitable areas.

4.2. Local Planning Policy

4.2.1. Horsham District Planning Framework (Adopted November 2015)

On 27 November 2015 Horsham District Council adopted the Horsham District Planning Framework (HDPF). With the exception of land within the South Downs National Park, the HDPF replaces the policies contained in The Core Strategy and General Development Control Policies which were both adopted in 2007.

The HDPF sets out the planning strategy for the years up to 2031 to deliver the social, economic and environmental needs for the district (outside the South Downs National Park).

Policy 35
Climate Change

Development will be supported where it makes a clear contribution to mitigating and adapting to the impacts of climate change and to meeting the district's carbon reduction targets as set out in the Council's Acting Together on Climate Change Strategy, 2009.

Measures which should be used to mitigate the effects of climate change include;

1. Reduced energy use in construction;

2. Improved energy efficiency in new developments, including influencing the behaviour of occupants to reduce energy use;

3. The use of decentralised, renewable and low carbon energy supply systems;

4. The use of patterns of development which reduce the need to travel, encourage walking and cycling and include good accessibility to public transport and other forms of sustainable transport; and

5. Measures which reduce the amount of biodegradable waste sent to landfill.

Development must be designed so that it can adapt to the impacts of climate change, reducing vulnerability, particularly in terms of flood risk, water supply and changes to the district's landscape. Developments should adapt to climate change using the following measures:

1. Provision of appropriate flood storage capacity in new building development;

2. Use of green infrastructure and dual use SuDS to help absorb heat, reduce surface water runoff, provide flood storage capacity and assist habitat migration;

3. Use of measures which promote the conservation of water and/or grey water recycling; and

4. Use of site layout, design measures and construction techniques that provide resilience to climate change (opportunities for natural ventilation and solar gain).

If it is not possible to incorporate the adaption and mitigation measures proposed, an explanation should be provided as to why this is the case.

Policy 36
Strategic Policy: Appropriate Energy Use

Energy hierarchy

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

1. Lean – use less energy – e.g. through demand reduction

2. Clean – supply energy efficiently – e.g. through heat networks

3. Green – use renewable energy sources

District Heating and Cooling

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

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

1. Connection to existing (C)CHP distribution networks

2. Site wide renewable (C)CHP

3. Site wide gas-fired (C)CHP

4. Site wide renewable community heating/cooling

5. Site wide gas-fired community heating/cooling

6. Individual building renewable heating

7. Individual building heating, with the exception of electric heating

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

Energy Statements

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

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

Renewable energy schemes

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

Policy 37
Sustainable Construction

Proposals must seek to improve the sustainability of development. To deliver sustainable design, development should incorporate the following measures where appropriate according to the type of development and location:

1. Maximise energy efficiency and integrate the use of decentralised, renewable and low carbon energy;
2. Limit water use to 110 litres/person/day;
3. Use design measures to minimise vulnerability to flooding and heatwave events;
4. Be designed to encourage the use of natural lighting and ventilation;
5. Be designed to encourage walking, cycling, cycle storage and accessibility to sustainable forms of transport;
6. Minimise construction and demolition waste and utilise recycled and low-impact materials;
7. Be flexible to allow future modification of use or layout, facilitating future adaptation, refurbishment and retrofitting;
8. Incorporate measures which enhance the biodiversity value of development.

All new development will be required to provide satisfactory arrangements for the storage of refuse and recyclable materials as an integral part of design.

New homes and workplaces should include the provision of high-speed broadband access and enable provision of future technologies where available.

4.2.2. Draft Horsham District Plan 2023-2040, Regulation 19 (December 2023)

Horsham District Council submitted their latest Local Plan—covering the period 2023 to 2040—to the Secretary of State on 26 July 2024, following a six-week Regulation 19 representation period that ran from 19 January to 1 March 2024. The examination hearings began in December 2024 but were paused by the Planning Inspector, with further sessions initially scheduled to resume between March and September 2025.

The Planning Inspector issued an interim findings letter on 4 April 2025 recommending withdrawal of the Plan due to legal non-compliance. His main objections related to a failure of HDC to meet the Duty to Co-operate, an insufficient reliance on the Sussex North Offsetting Water Scheme (SNOWS) for water neutrality, and a housing shortfall including the removal of strategic options.

Following these findings, the Council formally withdrew the Plan from examination in August 2025. Since then, significant changes have occurred: Natural England removed the water neutrality constraint in October 2025, and the

Council submitted a formal request to the Planning Inspectorate to re-open the examination in November 2025. In December 2025, the Inspector acknowledged that circumstances had materially changed and agreed to hold an exploratory meeting with the Council in February 2026 to consider how the Plan could progress.

As of early 2026, Horsham District Council is preparing for this meeting, which is scheduled for 26 February 2026, with the aim of exploring a revised approach to the Local Plan examination and addressing the previous concerns raised by the Inspector.

4.3. Other Supporting Planning Documents

4.3.1. Shaping Development in Horsham District Planning Advice Note (September 2025)

The Shaping Development in Horsham District Planning Advice Note (SDPAN) provides non-statutory guidance to support planning decisions in the absence of an up to date adopted Local Plan. It outlines how existing and emerging policies should be applied, with particular reference to climate change and energy. The SDPAN reinforces the importance of addressing climate change as a core planning principle, in line with the National Planning Policy Framework and local policies aimed at reducing the district's carbon footprint. Applicants are encouraged to consider sustainable design principles from the earliest design stages, including site layout, building orientation, massing, and landscaping, to minimize energy consumption and environmental impact. While acknowledging forthcoming regulatory changes to improve energy efficiency, the guidance encourages developments to exceed minimum standards wherever feasible.

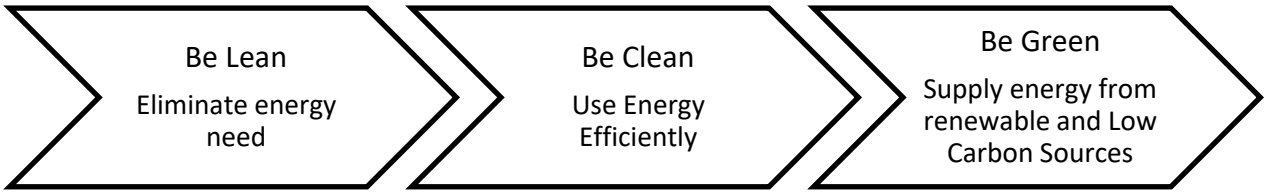
The SDPAN also supports the integration of low-carbon and renewable energy technologies, such as heat pumps and on-site renewable generation, where appropriate. Beyond building energy use, the guidance emphasizes sustainable transport and active travel measures to reduce carbon emissions associated with travel. In addition, applicants are encouraged to adopt water-saving measures and incorporate green and blue infrastructure to enhance resilience to climate change, particularly in areas of water stress.

Overall, the SDPAN sets out a holistic approach to sustainable development, providing a framework to ensure that new development contributes positively to Horsham District's environmental objectives while meeting policy requirements.

5. ENERGY ASSESSMENT

5.1. ENERGY HIERARCHY

The proposed energy strategy follows the established and widely accepted Energy Hierarchy of eliminate energy need (Be Lean), Use energy efficiently (Be Clean) and supply energy from renewable and low carbon sources (Be Green) to enable the maximum viable reductions in regulated and total CO_2 emissions over the baseline.



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

Using these principles, the Applicant will deliver the following objectives:

- Comply with the relevant regulatory requirements.
- To reduce energy and CO_2 demand through fabric and energy efficiency measures.
- To propose to reduce energy consumption and carbon dioxide emissions further through the use of on-site renewable or low and zero carbon technologies (LZC).

5.2. ASSESSMENT METHODOLOGY

Elmhurst Energy software, which uses the Standard Assessment Procedure (SAP) 10.2 methodology to assess compliance with Part L1 2021, has been used to evaluate an initial CO_2 performance of representative residential dwellings. To assess energy performance of the entire residential development, an energy and carbon assessment model has been produced, which extrapolates the results of the SAP analysis using the floor area weighted average method detailed within Part L1 2021 to predict the energy consumption and CO_2 performance of the residential development.

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

5.3. ESTABLISHING THE BASELINE CO_2 EMISSIONS

In order to assess the energy demand and CO_2 performance of the proposed energy strategy, a baseline needs to be established. This section sets out the approach taken to calculating the baseline CO_2 emissions for the development.

The total baseline CO_2 emissions for the proposed development is defined as regulated CO_2 emissions, which is covered by Building Regulations Part L. Regulated CO_2 emissions are calculated from the CO_2 emissions associated with space heating, hot water and fixed electrical demands (for lights, fans and pumps).

Unregulated CO_2 emissions are those that are associated with appliances. Unregulated CO_2 emissions are not covered by Part L and are therefore not included as part of the assessment detailed within this energy strategy.

CO_2 Conversion Factors have been applied in accordance with the requirements of Building Regulations Part L 2021. These were detailed in the previous section of this report.

The residential baseline CO_2 performance is based on the Part L1 2021 Target Emission Rate (TER) performance of representative dwellings. The baseline CO_2 performance has been determined by carrying out SAP 10.2 modelling to establish the TERs of sample dwellings. The TER sets a minimum allowable standard for the energy performance of

a building and is defined by the annual CO_2 emissions of a notional building of the same type, size and shape to the proposed building. The specification of the notional building used to calculate the TER is defined within Building Regulations Part L 2021. The representative dwellings presented in the following table were used to carry out the SAP assessment.

Table 2: Representative Sample SAP Dwellings

Sample SAP Type Reference	No. of Units
SB M4(3)	4
SB1	3
SB2	3
Type 1	7
Type 10	16
Type 11	12
Type 2	8
Type 3	6
Type 4	2
Type 5	5
Type 6	5
Type 7	4
Type 8	19
Type 9	14
Type A3	17
Type A5	2
Type A6	19
Type A7	4
TOTAL:	**150**

The calculated TER of the representative dwellings can be found on the SAP sheets within the appendices. The TER results of the SAP assessments from the representative dwellings have been extrapolated using a Carbon Emissions Reporting Spreadsheet. This then determines the total baseline of the proposed development.

5.4. TOTAL BASELINE CO_2 EMISSIONS

The total baseline regulated CO_2 emissions for the development are summarised below.

Table 3: Total Baseline CO_2 emissions

Stage of Energy Hierarchy	Regulated CO_2 Emissions (tonnes/year)
Part L 2021 Baseline	176.90

6. DEMAND REDUCTION (BE LEAN)

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

A range passive design and active design measures to reduce CO_2 emissions and increase resilience to climate change are proposed. These proposals are detailed within the following sections.

6.1. PASSIVE DESIGN

Passive design measures, including optimising orientation and site layout, natural ventilation and lighting, thermal mass and solar shading have been integrated in the design.

6.1.1. BUILDING ORIENTATION

Orientation varies across the proposed development. Orientation has been considered in the design of the façades to ensure energy use is balanced through daylight provision and thermal comfort.

6.1.2. SOLAR GAIN AND DAYLIGHT

The make-up of the proposed façades has balanced proportion of solid wall to glazing, thus providing optimum amount of daylight and winter solar heating, while limiting excessive solar gains in the summer. These measures will be combined with high performance glass, which is proposed throughout the scheme for additional solar control.

6.1.3. BUILDING FABRIC

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

Table 4: Proposed Fabric Specification

Element	Part L1 2021 Minimum Fabric Requirements	Proposed Specification
Ground Floor	0.18 W/m²K	0.12 W/m²K
Exposed Floor	0.18 W/m²K	0.15 W/m²K
External Wall	0.26 W/m²K	0.24 W/m²K
Party Wall	0.20 W/m²K	0.00 W/m²K
Roof (cold roof)	0.16 W/m²K	0.09 W/m²K
Roof (sloping ceiling)	0.16 W/m²K	0.15 W/m²K
Roof (flat roof)	0.16 W/m²K	0.11 W/m²K
Windows	1.60 W/m²K	U = 1.30 W/m²K G = 0.45 BFRC Certificate
Entrance Doors	1.60 W/m²K	1.00-1.30 W/m²K

6.1.4. Thermal Bridging

Where applicable, recognised construction details for all wall junctions will be specified to minimise the effects of non-repeating thermal bridging and reduce heat loss further. By specifying and ensuring that approved construction details are designed into the build, CO_2 emissions can be greatly reduced. It is also proposed that the openings will have Hi-Therm lintels installed to maximise thermal efficiency and further reduce heat loss.

6.1.5. Air Tightness

High levels of air tightness are proposed for the buildings. The target for each residential dwelling will be set at 4.00$m^3/h/m^2$. This is a significant improvement upon the Part L 2021 minimum requirement of 8.00$m^3/h/m^2$. This means that air infiltration between the internal and external environment will be largely controlled and space heating demand further reduced.

6.2. Active Design

After reducing the energy demand of the development, the next stage is to use energy efficient building services systems, low energy lighting and controls throughout the scheme to reduce energy consumption and the associated CO_2 emissions.

6.2.1. Space Heating and Hot Water

It is proposed that the dwellings will have their heating and hot water supplied through highly efficient individual air source heat pumps. These will be supplemented with highly insulated hot water cylinders to ensure that the heat loss per day is kept to a minimum, thereby using less energy and keeping carbon emissions reduced.

Due to the nature of the energy hierarchy being adhered to within this energy strategy, the CO_2 emissions improvements that are achieved as a result of heat pump technology should only be accounted for at the 'Be Green' stage of the energy hierarchy. This is because heat pumps are considered a renewable/low carbon energy source. Therefore, for the purpose of reporting the 'Be Lean' figures, the notional building system type will be used as specified in the Part L 2021 baseline.

6.2.2. Ventilation

The residential dwellings will utilise continuously running decentralised extract fans (system 3) to all wet rooms and kitchens. This will ensure the airtightness of the dwellings can be kept low, without compromising on the necessity for good ventilation.

6.2.3. Cooling

It is currently assumed that the cooling requirements during the hot summer months will be met via openable windows/patio doors and mechanical ventilation with enhanced ventilation rates (where applicable). The development will be subject to an overheating assessment which will be carried out at the detailed design stage, whereby the overheating mitigation strategy will be finalised.

6.2.4. Lighting

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

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

6.2.5. Smart Controls & Energy Metering

It is expected that the dwellings will be provided with an individual, programmable, zoned, control system, together with smart energy meters.

This will allow the display of energy use within individual units as required, assisting occupants to understand the way in which they consume energy and how much it costs. This will encourage them to turn off non-essential equipment or run equipment at a lower capacity during times of peak demand.

6.3. CO_2 Savings After 'Be Lean' Measures

After implementing all the passive and active energy efficiency measures for the 'Be Lean' stage of the energy hierarchy, the regulated carbon dioxide emissions for the proposed development are reduced by 3%. The total 'Be Lean' CO_2 emissions have been summarised below and compared against the baseline figure.

Table 5: Total 'Be Lean' CO_2 emissions

Stage of Energy Hierarchy	Regulated CO_2 Emissions (tonnes/year)
Total Part L 2021 Baseline	176.90
Total After 'Be Lean'	172.04
Total Saving	**4.86**
Total Improvement	**3%**

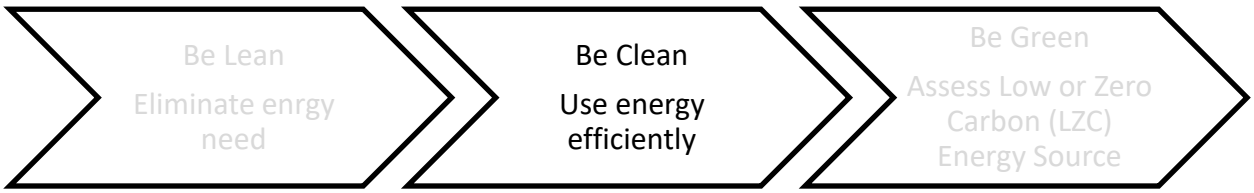
The Target Fabric Energy Efficiency rate is the minimum energy performance requirement, as stipulated by Building Regulations Part L1 2021, for all new residential dwellings. It is expressed as the amount of energy demand in units of kilowatt-hours per square metre of floor area per year. This performance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

The energy strategy has reduced energy demand through fabric and energy efficiency measures. The demand has been shown to have been reduced by an average of 3%, as detailed in the table below.

Table 6: FEE Performance

Element	Target Fabric Energy Efficiency (TFEE) kWh/m²/year	Dwelling Fabric Energy Efficiency (DFEE) kWh/m²/year	Improvement (%)
Site Wide Average	37.97	36.90	3%

7. SUPPLY ENERGY EFFICIENTLY (BE CLEAN)



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

There are many benefits of decentralised heat generation and Combined Heat and Power (CHP) in terms of cost and CO_2 emissions savings. However, technology such as this is more significant for larger developments. The proposed development size of 150 dwellings is at the lower end of what the industry tends to view as viable for such systems. The development is for residential only and this will result in 'peaky' thermal demands with little anchor load to enable efficient operation of gas fired CHP. This option also risks the potential to increase costs to residents.

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

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

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

8. RENEWABLE ENERGY (BE GREEN)

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

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

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

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

8.1. AIR SOURCE HEAT PUMPS (ASHP)

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

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

The main components of an ASHP are:

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

Some of the key advantages of ASHPs are listed below:

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

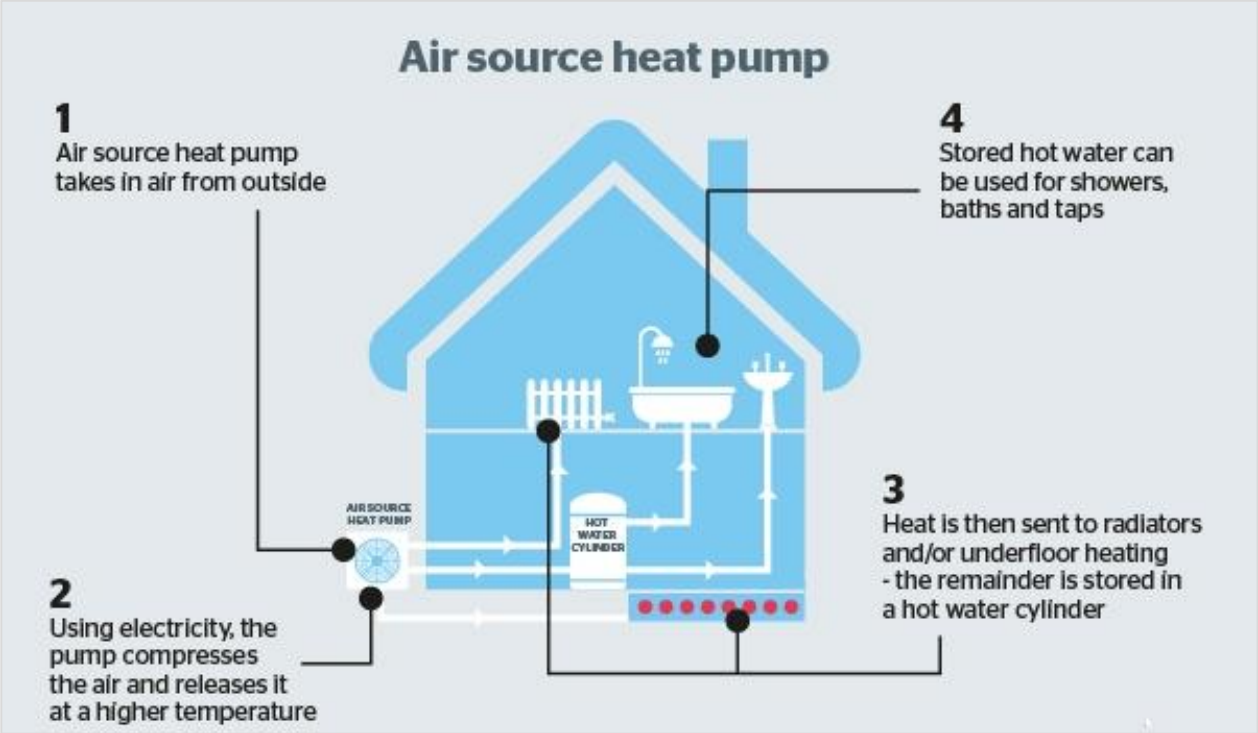
The use of individual Air Source Heat Pumps (ASHP) is proposed for this development to efficiently supply the houses with space heating and hot water. The ASHP are to be discreetly located within the boundary of each plot. Highly insulated hot water cylinders will be installed in conjunction with the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

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

A datasheet for the ASHP specified within the sample SAP calculations has been included within the appendices. The full design of this system will be further developed during the detailed design stage.

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

Figure 2: Example diagram of ASHP System



8.2. Summary of Proposed Building Services

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

Table 7: Summary of Proposed Building Services for the houses

Building Service Element	Specification
Heating:	Air Source Heat Pumps Vaillant aroTHERM plus range (appropriate heat pump to be selected based on size of each property)
Heating Emitter:	Radiators
Secondary Heating:	None
Heating Hot Water Controls:	Time and Temperature Zone Control Delayed Start Stat No Weather Compensation
Cylinder:	Hot water cylinder (capacity to be confirmed)

Heat Loss:	1.0 – 1.6 kWh/24 Hr
Mechanical Ventilation:	Mechanical Ventilation System 3 dMEV fans to wet rooms and kitchens
Waste Water Heat Recovery:	None
Showers:	Flow rate – 8 litres per minute

8.3. CO_2 Savings After 'Be Green' Measures

The following table presents the carbon savings achieved after the 'Be Green' stage of the energy hierarchy. This shows that a 65% improvement is achieved in comparison to the Building Regulations Part L baseline.

Table 8: Total 'Be Green' CO_2 emissions

Stage of Energy Hierarchy	Regulated CO_2 Emissions (tonnes/year)
Total Part L 2021 Baseline	176.90
Total After 'Be Lean'	172.04
Total After 'Be Green'	61.69
Total Saving	**115.21**
Total Improvement	**65%**

9. FUTURE HOMES & BUILDINGS STANDARD

The Future Homes Standard, renamed the Future Homes and Buildings Standard in December 2021, will complement the Building Regulations. When the Future Homes and Buildings Standard comes into effect, it will aim to reduce carbon emissions by 75-80% compared with homes delivered under the old regulations.

A timeframe for the Future Homes and Buildings Standard is yet to be agreed and finalised.

The Home Energy Model will be used in the Future Homes Standard assessment to demonstrate that new dwellings comply with the Future Homes Standard.

It will replace the SAP calculations currently used to assess the EPC (energy performance certificate) ratings.

The Home Energy Model is still under development but will be introduced with the finalised Future Homes and Buildings Standard.

It is possible that due to the anticipated construction programme of the proposed development, the dwellings may be built after the Future Homes and Buildings Standard comes into effect. The construction specifications will therefore need to be reviewed as the programme progresses to ensure that all dwellings remain compliant with the relevant regulatory requirements. It may be necessary for some specification upgrades, although it is unclear exactly what will be required until the standard is published.

This energy strategy has been developed using the assessment tools that are currently available and demonstrates full compliance with the current Building Regulations requirements, and the requirements of Horsham District Council. The energy strategy detailed herein should be reviewed when the scheme reaches detailed design to ensure that the proposals make best use of the technology available at the time, and are fully compliant with any updated regulatory requirements.

10. ENERGY STRATEGY SUMMARY AND CONCLUSIONS

The energy strategy has followed the energy hierarchy of 'Be Lean', 'Be Clean' and 'Be Green'. The energy strategy proposed for the development has been summarised as below.

Table 9: Proposed Energy Strategy

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

10.1. TOTAL CO_2 SAVINGS

The summary of the overall reduction in residential CO_2 emissions after each stage of the energy hierarchy is summarised in the table below.

Table 10: Energy Strategy Carbon Emissions Summary

Stage of Energy Hierarchy	Regulated CO_2 Emissions (tonnes/year)
Total Part L 2021 Baseline	176.90
Total After 'Be Lean'	172.04
Total After 'Be Green'	61.69
Total Saving	**115.21**
Total Improvement	**65%**

The proposed energy strategy achieves and meets the following requirements:

- Complies with all of the main compliance criteria required by Part L 2021 of the Building Regulations.
- Includes improved optimal building fabric improvements, energy efficient design of building services.
- The fabric energy efficiency (DFEE) achieves a 3% reduction over the minimum standards defined by Building Regulations Part L1 2021 (TFEE).
- Low carbon energy supply systems are to be utilised in the form of heat pump technology, which is to be used throughout the development. This is in accordance with the requirements of the Horsham District Planning Framework (November 2015) Policy 35.
- Estimated to annually reduce 115.21 tonnes of regulated CO_2 emissions compared to the Building Regulations Part L 2021 baseline.
- Achieves an overall reduction in regulated CO_2 emissions of 65% compared with the Building Regulations Part L 2021 baseline.

11. SUSTAINABILITY STRATEGY

11.1. MATERIALS & WASTE

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

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

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

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

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

Construction Waste will be managed during both the construction and operational phases according to the waste hierarchy detailed below.

Figure 3: Waste Hierarchy

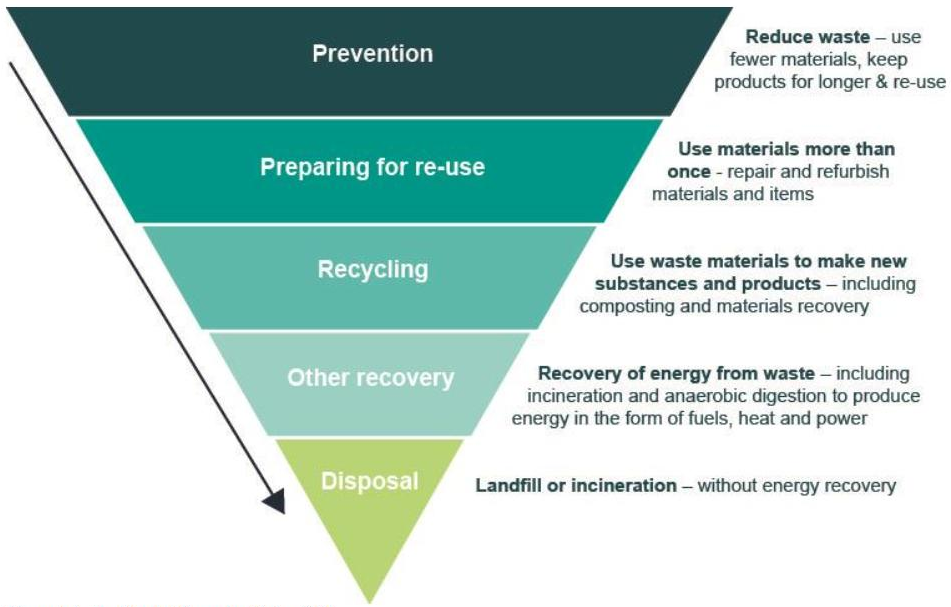


Figure 4.1: The Waste Hierarchy, Defra 2011

Step 1: Eliminate Waste

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

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

Step 2: Reuse waste materials
Reuse waste materials, ideally in its current location, avoiding the energy costs associate with transport and recycling.

Step 3: Recycle/compost waste materials
Recover materials through recycling and substitute for primary materials. Compost organic material to produce rich soils that replace fertilisers, ideally in a closed system to avoid the emissions released by organic material in landfill.

Step 4: Recover energy
If it cannot be reused or recycled, use waste instead of fossil fuels in energy generation to recover embodied energy.

Step 5: Disposal to landfill
Usually the last resort. Disposal to landfill wastes materials and embodied energy.

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

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

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

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

- Mixed Waste
- Light mixed and compactible
- Inert
- Timber
- Plasterboard
- Mixed Metals
- Hazardous
- Other

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

Waste will be minimised using the following techniques:

- Managing materials efficiently
- Consideration taken for build dimensions to avoid cut bricks, offcuts plasterboard etc.
- Mass balancing exercise will be undertaken to retain as much material on site as possible therefore minimising waste to landfill
- Site layout and programme reviewed to maximise the reuse of site won materials
- Any demolition concrete waste will be crushed and re-used on site for hardcore

- Suppliers will be responsible for their own removal of packaging

Management reports will be produced at an agreed period where actual recycling quantities achieved will be reviewed against targets set.

11.1.1. Circular Economy

A circular economy is a model of production and consumption, which is based on the reuse and regeneration of materials or products, especially as a means of continuing production in a sustainable and environmentally friendly way.

New buildings on the site will follow best practice principles in their design and construction with the overarching aims of reducing material usage, minimising waste and embedding longevity, flexibility and adaptability. Advances in innovation and best practice over the phased delivery with effective feedback loop mechanisms are expected to lead to continuous improvement as the design and construction develops. The construction of this new development will allow the energy and operational efficiency of the building to be optimised without the fabric constraints of an unsuitable existing building.

The Site Waste Management Plan will identify targets for:

- Managing construction site waste and monitoring the amount of waste generated
- Minimising waste diverted to landfill
- Maximising the use of recycled/reused/reclaimed materials for construction (where practicable)
- Using efficient design practices to minimise the quantity of materials required for construction

A project specific Waste Management Strategy will be developed for the operation of the development (post-construction) making all the necessary allowances to ensure that waste arisings can be accommodated under a full occupancy scenario. The strategy will consider the flow of waste from waste generator (i.e. residents/tenants) through to storage and collection. The Waste Management Strategy will consider the potential impacts that may arise from waste generated during the operational phase, with the overall aim of developing a strategy for legislative compliance and good practice in the separation, storage, and collection of waste arising.

11.1.2. Embodied Carbon

Embodied Carbon can be defined as the carbon emissions associated with the extraction and processing of materials and the energy and water consumption used by the factory in producing products and constructing the building. It also includes the 'in-use' stage (maintenance, replacement, and emissions associated with refrigerant leakage) and 'end of life' stage (demolition, disassembly, and disposal of any parts of product or building) and any transportation relating to the above.

Carbon dioxide and other greenhouses gases relating to Embodied Carbon are associated with the following stages:

- Product: extraction and processing of materials, energy and water consumption used by the factory and transport of materials and products.
- Construction: building the development.
- In-use: maintenance, repair, refurbishment, replacement and emissions associated with refrigerant leakage.
- End of life: demolition, disassembly waste processing and disposal of any parts of product or building and any transportation relating to the above.

The following primary actions in reducing embodied carbon have been considered for the development proposal:

1. Build less: Refurb and re-use.
2. Build light: Consider the building structure.
3. Build wise: Longevity and local context.
4. Build low carbon: Review material specifications.

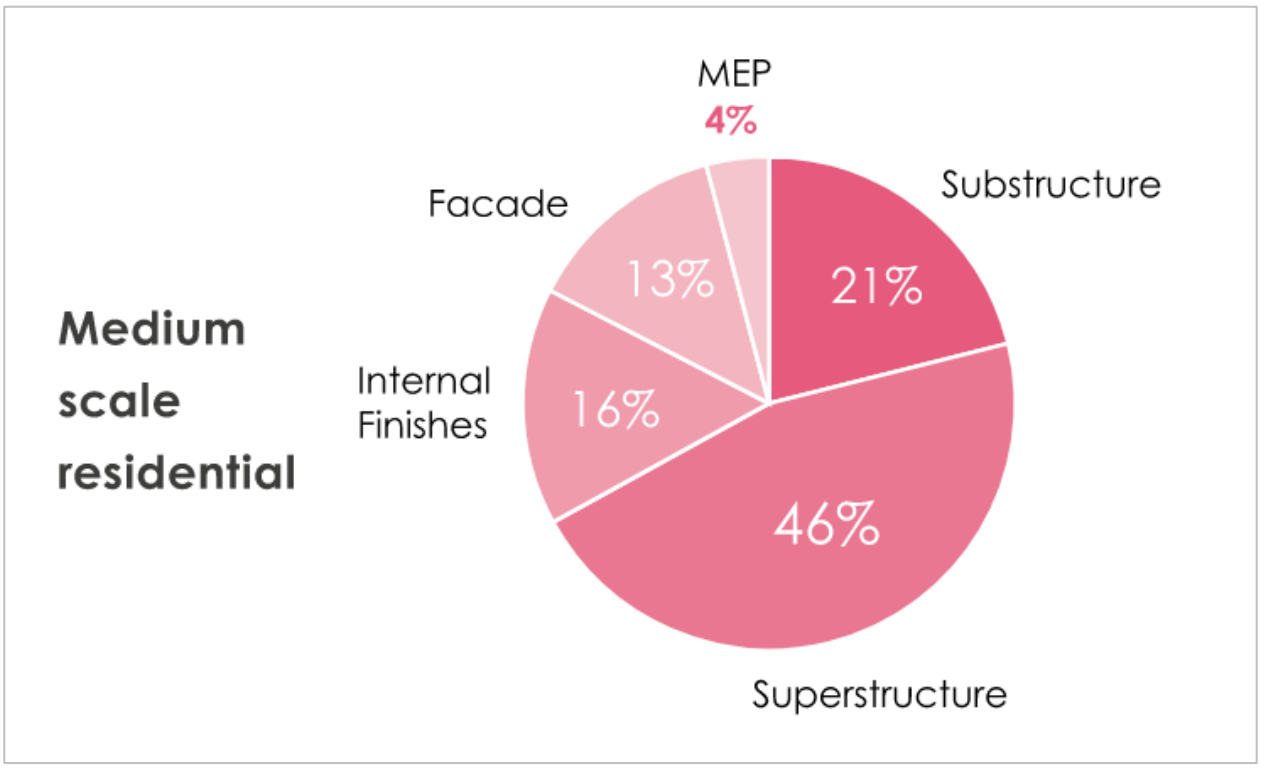
5. Build for the future: Assess end of life and adaptability.

6. Build collaboratively: Involve the whole team.

The LETI Climate Emergency Design Guide (January 2020) goes on to detail a number of reduction measures of embodied carbon by element. This development proposal seeks to include these reduction measures where practically possible.

The figure below details the relative proportions of embodied carbon by building element (for medium scale residential).

Figure 4: Relative Proportions of Embodied Carbon by Building Element



11.2. Water Efficiency

11.2.1. Household Water Use

Household water reduction measures will include the following where applicable:

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

The following specification (or similar) will be adopted on the development to ensure that the water consumption of the residential dwellings is limited to 110 litres per person per day. This minimises water consumption in line with the requirements of Policy 37 of Horsham District Planning Framework (2015).

Table 11: Specification of flow rates and volumes for water using appliances

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

Table 12: Water Calculations

Water Calculations					
Installation Type	Unit	Capacity/	Use Factor	Fixed use	**Total Use**
		Flow Rate		(l/p/day)	**(l/p/day)**
WC Single Flush	Volume (l)	0.00	4.42	0.00	0.00
WC Dual Flush	Full Flush (l)	6.00	1.46	0.00	8.76
	Pt Flush (l)	3.00	2.96	0.00	8.88
WC's (Multiple)	Volume (l)	0.00	4.42	0.00	0.00
Taps Exc. Kitchen	Flow Rate (l/min)	3.00	1.58	1.58	6.32
Bath (shower present)	(l/min)	190.00	0.11	0.00	20.90
Shower (bath present)	(l/min)	8.00	4.37	0.00	34.96

Bath Only	(l)	0.00	0.50	0.00	0.00
Shower Only	(l/min)	0.00	5.60	0.00	0.00
Kitchen Taps	(l/min)	6.00	0.44	10.36	13.00
Washing Machines	(l/kg dry)	8.17	2.10	0.00	17.16
Dishwashers	(l/place)	1.25	3.60	0.00	4.50
Waste Disposal	(l/min)	0.00	3.08	0.00	0.00
Water Softener	(l/min)	0.00	1.00	0.00	0.00
Total Calculated Water Use (l/p/day)					**114.50**
Grey/Rain Water Reused (l)					0.00
Normalisation Factor	(Factor)				0.91
Total Internal Consumption (l/p/day)					**104.20**
External Water Use Allowance (l)					5.00
Total Consumption Part G (l/p/day)					**109.20**

11.2.2. Construction Phase

Water efficiency is considered during the construction process and the following practices on site will reduce usage and waste:

- High pressure low volume power hoses
- Waterless wheel washing
- Installing water meters and monitoring, reporting and setting targets for water consumption

11.3. Summer Overheating and Cooling

With a continual drive for energy efficiency through both the Building Regulations and Local Planning Authority requirements, the risk of overheating to dwellings in the summer months is becoming more prevalent. Overheating can be a mild discomfort or a hazard to health if managed incorrectly, so it is vitally important that overheating risk be mitigated to ensure the dwelling will be both energy efficient and comfortable to live in.

Summer overheating is caused when there is excess build-up of heat within a dwelling. This can occur where there is excessive solar gain and limited means to absorb excess heat into the building fabric or purge this heat through ventilation. Summer overheating can be managed through a variety of measures and the chosen solution will vary from development to development. The following measures will be considered, with the final overheating mitigation strategy to be confirmed at the design stage:

Limiting Solar Gains

1. Orientation and Shading:
    - Buildings should be designed to minimise solar gains during the summer months. This can be achieved by orienting the building to reduce exposure to direct sunlight and using shading devices such as overhangs, awnings, or brise-soleil.
    - Consideration should be given to the use of trees and vegetation for natural shading.
2. Glazing Strategy:
    - The amount, type, and position of glazing should be carefully considered. High-performance glazing with low solar transmittance values (g-values) can help limit solar heat gain
    - Use of external shading devices or blinds to reduce solar gain through windows.
3. Internal Layout:
    - Arrange internal spaces to position heat-sensitive rooms (such as bedrooms) away from areas of high solar gain.
    - Use buffer zones, such as corridors or storage areas, on the sunniest side of the building.

Removing Excess Heat

1. Natural Ventilation:
    - Design for effective natural ventilation through the use of acoustically attenuated vents where external noise levels allow. Use cross ventilation by having openings on opposite sides of the building.
2. Mechanical Ventilation and Cooling:
    - Where natural ventilation is insufficient, mechanical ventilation systems may be used, potentially incorporating heat recovery to improve energy efficiency.
    - In extreme cases, mechanical cooling (such as air conditioning) may be necessary, but should be a last resort due to it's energy consumption.
3. Thermal Mass:
    - Use thermal mass within the building to absorb heat during the day and release it during cooler periods (e.g., at night).
    - Materials like concrete, brick, or stone can provide effective thermal mass.

The development will be subject to Part O of the Building Regulations, which came into effect on 15th June 2022. Where possible, compliance with Part O can be demonstrated using the simplified method. Where this is not possible, dynamic thermal modelling will be required. CIBSE TM59 is an approved methodology of dynamic thermal modelling. It includes a set of overheating criteria specifically aimed at residential spaces. It is mandatory to perform the TM59 calculations using a Dynamic Simulation Modelling (DSM) software.

TM59 requires compliance by passing both of the following criteria for homes predominantly naturally ventilated:

1. All living rooms, kitchens areas must have ΔT greater than or equal to one degree (K) during the period May to September (identical to TM52 criterion 01: hours of exceedance).

2. For bedrooms only, to guarantee comfort during the sleeping hours the operative temperature in the bedroom from 10pm to 7am shall not exceed 26°C for more than 1% of annual hours which will be 33 hours.

The TM59 criteria for predominantly mechanically ventilated dwellings is as follows:

1. For homes with restricted window openings, the fixed temperature test must be followed – i.e., all occupied rooms should not exceed an operative temperature of 26°C for more than 3% of annual occupied hours.

The full Overheating Assessment, to demonstrate compliance with Part O, will be undertaken at the detailed design stage once the design and construction specifications have been fully established.

12. APPENDICIES

The following pages detail:

- Appendix A: Alternative Renewable Energy Options
- Appendix B: Vaillant aroTHERM Plus Technical Datasheet
- Appendix C: Sample SAP Summary Information Sheets (Be Lean)
- Appendix D: Sample SAP Summary Information Sheets (Be Green)

12.1. Appendix A: Alternative Renewable Energy options

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

Wind Turbines

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

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

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

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

Biomass Boilers

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

Biomass is considered a technically-viable option for this development scheme as there are no apparent physical constraints on site in terms of installing biomass boilers or storing a sufficient supply. There are, however, concerns regarding a sustainable supply of biomass to the site. The capital installation cost would also be high which leads us to the conclusion that biomass would not be a commercially-viable option for this development scheme.

Solar Thermal

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

High installation costs and dependency on sunlight has meant that this option has been discounted for this development.

Ground Source Heat Pumps (GSHP)

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

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

With regards to capital cost, GSHPs are more expensive to install than ASHP and also rely on the use of energy to pump fluid around the pipework.

GSHPs have been discounted for this scheme are they are considered to be more complex, technically risky and costly, than the alternative ASHP option.

Photovoltaic Panels (PV)

Photovoltaic panels (PV) capture the sun's energy and convert it into electricity. This could be a solution to reduce CO_2 emissions to satisfy building regulations, however, the efficient building fabric and use of air source heat pumps ensures compliance is met without the need for PV. Subject to the anticipated construction programme, some dwellings may need to include PV panels in order to further reduce carbon emissions in accordance with the incoming Future Homes and Buildings Standard.

12.2. APPENDIX B: VAILLANT AROTHERM PLUS TECHNICAL DATASHEET

Figure 5: Vaillant aroTHERM Plus Technical Datasheet

aroTHERM plus	Unit	3.5kW VWL 35 / 6	5kW VWL 55 / 6	7kW VWL 75 / 6	10kW VWL 105 / 6	12kW VWL 125 / 6
General						
Width	mm	1,100				
Height	mm	765		965	1,565	
Depth	mm	450				
Weight, ready for operation	kg	114		128	194	
Connection, heating circuit		G 1 1/4"				
Rated voltage	V	230 V (+10%/- 15%), 50 Hz, 1~/N/PE				
Rated current, maximum	A	14.3		15.0	23.3	
Fuse size		16			25	
Fuse type	A	C/D				
RCD type		A				
eBUS (2-core communication cable)	mm2	0.75				
Maximum length eBUS cable (communication cable)	m	50				
IP rating		IP 15 B				
Fan, power consumption	W	40			50	
Fan quantity		1			2	
Fan, air flow , maximum	m^3 /h	2,300			5,100	
Heating pump, power consumption	W	2 - 50			3 - 87	
Heating circuit						
Heating water temperature, minimum/maximum	° C	20 - 75				
Basic length of the heating water pipe, maximum, between the outdoor unit and indoor unit	m	20				
Operating pressure, minimum	bar	0.50				
Operating pressure, maximum	bar	3.00				
Volume flow, minimum	l/h	400		540	995	
Volume flow, maximum	l/h	860		1,205	2,065	
Water volume, in the outdoor unit	l	1.5		2.0	2.5	
Water volume, in the heating circuit, minimum, thawing mode, activated/deactivated back-up heater	l	15 / 40		20 / 55	45 / 150	
Remaining feed pressure, hydraulic	kPa (mbar)	56.0 (560.0)		44.0 (440.0)	55.0 (550.0)	

aroTHERM plus	Unit	3.5kW VWL 35 / 6	5kW VWL 55 / 6	7kW VWL 75 / 6	10kW VWL 105 / 6	12kW VWL 125 / 6
Refrigerant circuit						
Fluid type		R290				
Fluid fill quantity	kg	0.6		0.9	1.3	
Refrigerant, Global Warming Potential (GWP)		3				
CO_2 equivalent	t	0.0018		0.0027	0.0039	
Permissable operating pressure	bar	31.5				
Compressor type		Rotary piston			Scroll compressor	
Compressor oil type		Specific polyalkylene glycol (PAG				
Compressor, control		Electronic				

Noise emissions, heating mode				
Sound power, EN 12102, EN 14511 LWA, A7/W35	dB(A)	51	53	58
Sound power, EN 12102, EN 14511 LWA, A7/W45	dB(A)	53		58
Sound power, EN 12102, EN 14511 LWA, A7/W55	dB(A)	54	55	60

Efficiency		
Energy efficiency class 35°C	(A+++ to F)	A+++
Energy efficiency class 55°C	(A+++ to F)	A++
Combination with uniTOWER		
Energy efficiency class	(A+++ to F)	A++
Energy efficiency class for hot water supply	(A+ to F)	A

SCOP and heating output

aroTHERM output		35°C flow		40°C flow		45°C flow		50°C flow		55°C flow	
		Output	SCOP	Output	SCOP	Output	SCOP	Output	SCOP	Output	SCOP
3.5kW	-5°C	4.2	4.41	4.1	4.03	4	3.65	3.9	3.37	3.8	3.10
	-3°C	4.6		4.4		4.3		4.2		4	
	0°C	4.7		4.7		4.6		4.5		4.4	
	2°C	4.9		4.9		4.9		4.7		4.6	
5kW	-5°C	6.3	4.48	6	4.13	5.6	3.77	5.5	3.41	5.4	3.06
	-3°C	6.8		6.4		6.1		5.9		5.8	
	0°C	6.9		6.7		6.6		6.4		6.2	
	2°C	7.1		7		6.9		6.7		6.5	
7kW	-5°C	8.2	4.36	8.1	4.13	8	3.91	7.5	3.65	7	3.39
	-3°C	8.8		8.6		8.4		7.9		7.4	
	0°C	9.5		9.3		9.1		8.6		8.1	
	2°C	10		9.8		9.6		9		8.5	
10kW	-5°C	9.9	5.03	9.7	4.58	9.4	4.13	9.1	3.85	8.8	3.58
	-3°C	10.7		10.3		10		9.6		9.2	
	0°C	11.9		11.6		11.3		10.7		10.2	
	2°C	12.8		12.5		12.1		11.5		10.9	
12kW	-5°C	13.1	4.88	12.8	4.55	12.5	4.21	11.7	3.92	10.8	3.63
	-3°C	13.9		13.4		12.9		12.1		11.2	
	0°C	15.2		14.6		14.1		13.2		12.3	
	2°C	16		15.5		14.9		13.9		13	

12.3. APPENDIX C: SAMPLE SAP SUMMARY INFORMATION SHEETS (BE LEAN)

Summary for Input Data

elmhurst energy

Plot Reference	SB M4(3)	**Issued on Date**	09/02/2026
Assessment Reference	001	**Plot Type Ref**	SB M4(3)
Plot Address	SB M4(3)	**SAP Version**	10.2

SAP Rating	86 B	**DER**	12.12	**TER**	9.60
Environmental	89 B	**% DER < TER**			-26.25
CO_2 Emissions (t/year)	1.2	**DFEE**	31.67	**TFEE**	33.19
Compliance Check	See BREL	**% DFEE < TFEE**			4.57
% DPER < TPER	-36.49	**DPER**	68.36	**TPER**	50.08

Assessor Details	Mr. Matthew Fitzpatrick	**Assessor ID**	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Semi-Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	20.96 m	54.71 m²	2.39 m
1st Storey:	20.96 m	54.71 m²	2.61 m

8.0 Living Area 23.13 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	104.82	89.78	0.00	None	15.04	Enter Gross Area

9.1 Party Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
Party Wall 1	Filled Cavity with Edge Sealing	Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill	0.00	110.00	49.12	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud Partitions	Plasterboard on timber frame	9.00	188.82

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	54.71	54.71	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	54.71

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)

Summary for Input Data

elmhurst energy

Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	54.71

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1	+1	Plasterboard ceiling, carpeted chipboard floor	18.00	54.71

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Doors	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Door	Doors	External Wall 1	North	2.15	
W1	Windows	External Wall 1	North	4.76	
W2	Windows	External Wall 1	East	0.66	
W3	Windows	External Wall 1	South	7.47	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges	

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	9.94	0.05	0.05	HiTherm	No
E3 Sill	Non Gov Approved Schemes	8.44	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	22.44	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	20.96	0.05	0.05	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	11.14	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	9.82	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	10.00	0.04	0.04	RCD	No
E18 Party wall between dwellings	Non Gov Approved Schemes	10.00	0.05	0.05	RCD	No
P1 Party wall - Ground floor	Non Gov Approved Schemes	9.82	0.04	0.04	RCD	No
P2 Party wall - Intermediate floor within a dwelling	Table K1 - Default	9.82	0.00	0.07	Table K1	No
P4 Party wall - Roof (insulation at ceiling level)	Non Gov Approved Schemes	9.82	0.03	0.03	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	20.96	0.00	0.00	RCD	No

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	500755
Duct Type	Rigid
Wet Rooms	3

19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0
Number of flues attached to solid fuel boiler	0
Number of flues attached to other heater	0
Number of blocked chimneys	0

Summary for Input Data

elmhurst energy

Number of intermittent extract fans	0	
Number of passive vents	0	
Number of flueless gas fires	0	
21.0 Fixed Cooling System	No	
22.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	m³/(h.m²) @ 50 Pa
Test Method	Blower Door	

22.0 Lighting

No Fixed Lighting: No

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	10

24.0 Main Heating 1	Manufacturer	
Percentage of Heat	100.00	%
Fuel Type	Mains gas	
SAP Code	104	
In Winter	88.90	
In Summer	80.30	
Model Name	Gas	
Manufacturer	Gas	
Controls SAP Code	2110	
Delayed Start Stat	Yes	
Burner Control	Modulating	
Flue Type	Balanced	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
Boiler Interlock	Yes	
Combi boiler type	Standard Combi	
Combi keep hot type	None	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	

28.0 Water Heating

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

Summary for Input Data

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Showers	Combi boiler or unvented hot water system	8.00		Yes	Instantaneous System 1

28.3 Waste Water Heat Recovery System
Instantaneous System 1

Database ID	80171
Brand Model	Zypho, iZi 40
Details	Year: 2020 + current Efficiency: 35.55 Utilisation factor: 0.981

29.0 Hot Water Cylinder None

34.0 Small-scale Hydro None

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

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

Summary for Input Data

elmhurst energy

Plot Reference	SB1	Issued on Date	09/02/2026
Assessment Reference	001	Plot Type Ref	SB1
Plot Address	SB1	SAP Version	10.2

SAP Rating	83 B	DER	18.87	TER	16.91
Environmental	88 B	% DER < TER			-11.59
CO_2 Emissions (t/year)	0.78	DFEE	42.48	TFEE	45.18
Compliance Check	See BREL	% DFEE < TFEE			5.98
% DPER < TPER	-17.16	DPER	104.76	TPER	89.42

Assessor Details	Mr. Matthew Fitzpatrick	Assessor ID	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Maisonette, Semi-Detached	
Position of Flat	Ground-floor flat	
Which Floor	1	
2.0 Number of Storeys	1	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	27.45 m	45.11 m²	2.39 m

8.0 Living Area 23.25 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	65.61	56.98	0.00	None	8.63	Enter Gross Area

9.1 Party Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
Party Wall 1	Filled Cavity with Edge Sealing	Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill	0.00	110.00	25.75	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud Partitions	Plasterboard on timber frame	9.00	50.79

10.1 Party Ceilings

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Party Ceiling 1	Precast concrete planks floor, screed, carpeted	30.00	45.11

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	45.11

12.0 Opening Types

Summary for Input Data

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Doors	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Door	Doors	External Wall 1	North	2.15	
W1	Windows	External Wall 1	North	2.94	
W2	Windows	External Wall 1	East	0.66	
W3	Windows	External Wall 1	West	2.88	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	5.94	0.05	0.05	HiTherm	No
E3 Sill	Non Gov Approved Schemes	5.94	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	13.80	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	27.45	0.05	0.05	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	9.56	0.04	0.04	RCD	No
E18 Party wall between dwellings	Non Gov Approved Schemes	7.17	0.05	0.05	RCD	No
P1 Party wall - Ground floor	Non Gov Approved Schemes	10.77	0.04	0.04	RCD	No
E7 Party floor between dwellings (in blocks of flats)	Non Gov Approved Schemes	27.45	0.05	0.05	RCD	No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	7.17	-0.10	-0.10	RCD	No
P3 Party wall - Intermediate floor between dwellings (in blocks of flats)	Table K1 - Default	10.77	0.00	0.00		No

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	500755
Duct Type	Rigid
Wet Rooms	2

19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

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

21.0 Fixed Cooling System	No

Summary for Input Data

elmhurst energy

22.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	$m^3/(h.m^2)$ @ 50 Pa
Test Method	Blower Door	

22.0 Lighting

No Fixed Lighting	No

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	10

24.0 Main Heating 1	Manufacturer	
Percentage of Heat	100.00	%
Fuel Type	Mains gas	
SAP Code	104	
In Winter	88.90	
In Summer	80.30	
Model Name	Gas	
Manufacturer	Gas	
Controls SAP Code	2110	
Delayed Start Stat	Yes	
Burner Control	Modulating	
Flue Type	Balanced	
Fan Assisted Flue	No	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
Boiler Interlock	Yes	
Combi boiler type	Standard Combi	
Combi keep hot type	None	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	

28.0 Water Heating

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

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Showers	Combi boiler or unvented hot water system	8.00		Yes	Instantaneous System 1

28.3 Waste Water Heat Recovery System Instantaneous System 1

Database ID	80171

Summary for Input Data

Brand Model	Zypho, iZi 40
Details	Year: 2020 + current Efficiency: 35.55 Utilisation factor: 0.981
29.0 Hot Water Cylinder	None
34.0 Small-scale Hydro	None

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Plot Reference	SB2	**Issued on Date**	09/02/2026
Assessment Reference	001	**Plot Type Ref**	SB M4(3)
Plot Address	SB M4(3)	**SAP Version**	10.2

SAP Rating	83 B	**DER**	17.07	**TER**	14.31
Environmental	87 B	**% DER < TER**			-19.29
CO_2 Emissions (t/year)	0.93	**DFEE**	39.25	**TFEE**	39.71
Compliance Check	See BREL	**% DFEE < TFEE**			1.15
% DPER < TPER	-26.78	**DPER**	95.67	**TPER**	75.46

Assessor Details	Mr. Matthew Fitzpatrick	**Assessor ID**	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Maisonette, Semi-Detached	
Position of Flat	Top-floor flat	
Which Floor	2	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	1.81 m	5.25 m²	2.39 m
1st Storey:	29.97 m	53.81 m²	2.61 m

8.0 Living Area	26.52	m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	82.55	74.94	0.00	None	7.61	Enter Gross Area

9.1 Party Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
Party Wall 1	Filled Cavity with Edge Sealing	Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill	0.00	110.00	22.58	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud Partitions	Plasterboard on timber frame	9.00	113.27

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	53.81	53.81	None	0.00	Enter Gross Area	0.00

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	5.25

Summary for Input Data

elmhurst energy

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	+1	Precast concrete planks floor, screed, carpeted	40.00	48.56

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1	+1	Plasterboard ceiling, carpeted chipboard floor	18.00	54.71

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Doors	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Door	Doors	External Wall 1	North	2.15	
W1	Windows	External Wall 1	North	2.70	
W2	Windows	External Wall 1	East	2.10	
W3	Windows	External Wall 1	South	0.66	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	4.86	0.05	0.05	HiTherm	No
E3 Sill	Non Gov Approved Schemes	3.85	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	11.10	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	1.81	0.05	0.05	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	11.95	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	18.02	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	10.44	0.04	0.04	RCD	No
E18 Party wall between dwellings	Non Gov Approved Schemes	11.95	0.05	0.05	RCD	No
P1 Party wall - Ground floor	Non Gov Approved Schemes	9.45	0.04	0.04	RCD	No
P2 Party wall - Intermediate floor within a dwelling	Table K1 - Default	9.82	0.00	0.07	Table K1	No
P4 Party wall - Roof (insulation at ceiling level)	Non Gov Approved Schemes	9.82	0.03	0.03	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	1.81	0.00	0.00	RCD	No
E7 Party floor between dwellings (in blocks of flats)	Non Gov Approved Schemes	28.16	0.05	0.05		No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	2.39	-0.10	-0.10	RCD	No
P3 Party wall - Intermediate floor between dwellings (in blocks of flats)	Table K1 - Default	9.45	0.00	0.00		No

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	500755
Duct Type	Rigid
Wet Rooms	2

19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0

Summary for Input Data

Number of open flues	0	
Number of chimneys/flues attached to closed fire	0	
Number of flues attached to solid fuel boiler	0	
Number of flues attached to other heater	0	
Number of blocked chimneys	0	
Number of intermittent extract fans	0	
Number of passive vents	0	
Number of flueless gas fires	0	
21.0 Fixed Cooling System	No	
22.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	m³/(h.m²) @ 50 Pa
Test Method	Blower Door	

22.0 Lighting

No Fixed Lighting	No				
	Name	**Efficacy**	**Power**	**Capacity**	**Count**
	Lighting 1	75.00	10.00	750.00	10

24.0 Main Heating 1	Manufacturer	
Percentage of Heat	100.00	%
Fuel Type	Mains gas	
SAP Code	104	
In Winter	88.90	
In Summer	80.30	
Model Name	Gas	
Manufacturer	Gas	
Controls SAP Code	2110	
Delayed Start Stat	Yes	
Burner Control	Modulating	
Flue Type	Balanced	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
Boiler Interlock	Yes	
Combi boiler type	Standard Combi	
Combi keep hot type	None	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	

28.0 Water Heating

Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	Yes
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
Cold Water Source	From mains
Bath Count	1

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Showers	Combi boiler or unvented hot water system	8.00		Yes	Instantaneous System 1

28.3 Waste Water Heat Recovery System
Instantaneous System 1

Database ID	80171
Brand Model	Zypho, iZi 40
Details	Year: 2020 + current Efficiency: 35.55 Utilisation factor: 0.981

29.0 Hot Water Cylinder None

34.0 Small-scale Hydro None

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

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

Summary for Input Data

elmhurst energy

Plot Reference	Type 1	**Issued on Date**	09/02/2026
Assessment Reference	001	**Plot Type Ref**	Type 1
Plot Address	Type 1	**SAP Version**	10.2

SAP Rating	84 B	**DER**	15.64	**TER**	12.38
Environmental	86 B	**% DER < TER**			-26.33
CO_2 Emissions (t/year)	1.27	**DFEE**	42.33	**TFEE**	42.57
Compliance Check	See BREL	**% DFEE < TFEE**			0.55
% DPER < TPER	-34.74	**DPER**	87.26	**TPER**	64.76

Assessor Details	Mr. Matthew Fitzpatrick	**Assessor ID**	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	1.00 m	45.09 m²	2.39 m
1st Storey:	1.00 m	45.09 m²	2.61 m

8.0 Living Area 16.96 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	139.08	118.42	0.00	None	20.66	Enter Gross Area

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud Partitions	Plasterboard on timber frame	9.00	128.50
Block Partitions	Dense block, plasterboard on dabs	75.00	55.72

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	45.09	45.09	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	45.09

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	45.09

11.2 Internal Floors

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

Internal Floor 1	+1	Plasterboard ceiling, carpeted chipboard floor		18.00	45.09

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Doors	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Door	Doors	External Wall 1	North	2.15	
W1	Windows	External Wall 1	North	7.41	
W2	Windows	External Wall 1	East	6.48	
W3	Windows	External Wall 1	West	3.30	
W4	Windows	External Wall 1	South	1.32	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	15.56	0.05	0.05	HiTherm	No
E3 Sill	Non Gov Approved Schemes	10.86	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	31.80	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	27.27	0.05	0.05	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	16.00	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	11.28	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	20.40	0.04	0.04	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	27.27	0.00	0.00	RCD	No

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	500755
Duct Type	Rigid
Wet Rooms	5

19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

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

21.0 Fixed Cooling System	No

Summary for Input Data

elmhurst energy

22.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	$m^3/(h.m^2)$ @ 50 Pa
Test Method	Blower Door	

22.0 Lighting

No Fixed Lighting	No

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	10

24.0 Main Heating 1	Manufacturer	
Percentage of Heat	100.00	%
Fuel Type	Mains gas	
SAP Code	104	
In Winter	88.90	
In Summer	80.30	
Model Name	Gas	
Manufacturer	Gas	
Controls SAP Code	2110	
Delayed Start Stat	Yes	
Burner Control	Modulating	
Flue Type	Balanced	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
Boiler Interlock	Yes	
Combi boiler type	Standard Combi	
Combi keep hot type	None	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	

28.0 Water Heating

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

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	8.00		Yes	Instantaneous System 1
Shower 2	Combi boiler or unvented hot water system	8.00		No	

28.3 Waste Water Heat Recovery System Instantaneous System 1

Summary for Input Data

Database ID	80171
Brand Model	Zypho, iZi 40
Details	Year: 2020 + current Efficiency: 35.55 Utilisation factor: 0.981

29.0 Hot Water Cylinder	None

34.0 Small-scale Hydro	None

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

Plot Reference	Type 2	**Issued on Date**	09/02/2026
Assessment Reference	001	**Plot Type Ref**	Type 2
Plot Address	Type 2	**SAP Version**	10.2

SAP Rating	84 B	**DER**	14.24	**TER**	11.91
Environmental	87 B	**% DER < TER**			-19.56
CO_2 Emissions (t/year)	1.24	**DFEE**	37.23	**TFEE**	41.98
Compliance Check	See BREL	**% DFEE < TFEE**			11.31
% DPER < TPER	-27.91	**DPER**	79.66	**TPER**	62.28

Assessor Details	Mr. Matthew Fitzpatrick	**Assessor ID**	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	1.00 m	48.03 m²	2.39 m
1st Storey:	1.00 m	48.03 m²	2.61 m

8.0 Living Area 15.39 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18	60.00	156.29	126.00	0.00	None	30.29	Enter Gross Area

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud Partitions	Plasterboard on timber frame	9.00	172.75
Block Partitions	Dense block, plasterboard on dabs	75.00	23.09

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	48.03	48.03	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	48.03

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	48.03

11.2 Internal Floors

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

Internal Floor 1	+1	Plasterboard ceiling, carpeted chipboard floor		18.00	48.03

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Doors	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.44			1.20

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Door	Doors	External Wall 1	North	2.02	
W1	Windows	External Wall 1	North	9.24	
W2	Windows	External Wall 1	East	4.10	
W3	Windows	External Wall 1	South	12.90	
Rear Door	Doors	External Wall 1	South	2.03	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges	

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	20.47	0.05	0.05	HiTherm	No
E3 Sill	Non Gov Approved Schemes	13.79	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	48.90	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	31.29	0.05	0.05	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	15.52	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	15.78	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	29.97	0.04	0.04	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	31.29	0.00	0.00	RCD	No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	9.99	-0.10	-0.10	RCD	No

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	No
Mechanical Ventilation data Type	Database
Type	Mechanical extract ventilation - decentralised
MV Reference Number	500755
Duct Type	Rigid
Wet Rooms	5

19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

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

Summary for Input Data

21.0 Fixed Cooling System	No	
22.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	m³/(h.m²) @ 50 Pa
Test Method	Blower Door	

22.0 Lighting

No Fixed Lighting	No				
	Name	**Efficacy**	**Power**	**Capacity**	**Count**
	Lighting 1	75.00	10.00	750.00	10

24.0 Main Heating 1	Manufacturer	
Percentage of Heat	100.00	%
Fuel Type	Mains gas	
SAP Code	104	
In Winter	88.90	
In Summer	80.30	
Model Name	Gas	
Manufacturer	Gas	
Controls SAP Code	2110	
Delayed Start Stat	Yes	
Burner Control	Modulating	
Flue Type	Balanced	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
Boiler Interlock	Yes	
Combi boiler type	Standard Combi	
Combi keep hot type	None	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	

28.0 Water Heating

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

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	8.00		Yes	Instantaneous System 1
Shower 2	Combi boiler or unvented hot water system	8.00		No	
Shower 3	Combi boiler or unvented hot water system	8.00		No	

Shower 3	Combi boiler or unvented hot water system	8.00	No

28.3 Waste Water Heat Recovery System

Instantaneous System 1

Database ID	80171
Brand Model	Zypho, iZi 40
Details	Year: 2020 + current Efficiency: 35.55 Utilisation factor: 0.981

29.0 Hot Water Cylinder None

34.0 Small-scale Hydro None

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Plot Reference	Type 3	**Issued on Date**	09/02/2026
Assessment Reference	001	**Plot Type Ref**	Type 3
Plot Address	Type 3	**SAP Version**	10.2

SAP Rating	85 B	**DER**	14.16	**TER**	11.17
Environmental	87 B	**% DER < TER**			-26.77
CO_2 Emissions (t/year)	1.24	**DFEE**	39.07	**TFEE**	39.49
Compliance Check	See BREL	**% DFEE < TFEE**			1.08
% DPER < TPER	-35.51	**DPER**	79.05	**TPER**	58.33

Assessor Details	Mr. Matthew Fitzpatrick	**Assessor ID**	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	1.00 m	50.99 m²	2.39 m
1st Storey:	1.00 m	45.58 m²	2.61 m

8.0 Living Area 12.60 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
Masonary Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	145.79	124.29	0.00	None	21.50	Enter Gross Area

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Block Partition	Dense block, plasterboard on dabs	75.00	21.96
Stud Partition	Plasterboard on timber frame	9.00	184.73

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	45.58	45.58	None	0.00	Enter Gross Area	0.00
Low Level Roof	External Slope Roof	Plasterboard, insulated slope	0.15	9.00	5.41	5.41	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	45.58

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	50.99

11.2 Internal Floors

Summary for Input Data

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	18.00	45.58

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
1	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30
2	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30
3	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30
Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
1	1	Masonary Wall	North	6.41	
2	2	Masonary Wall	East	3.67	
3	3	Masonary Wall	South	9.29	
Front Door	Front Door	Masonary Wall	North	2.13	

14.0 Conservatory	None	
15.0 Draught Proofing	0	%
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	14.79	0.05	0.05		No
E3 Sill	Non Gov Approved Schemes	10.44	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	33.60	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	31.05	0.05	0.05	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	27.49	0.00	0.00	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	14.30	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	19.82	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	12.38	0.04	0.04	RCD	No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	2.39	-0.10	-0.10	RCD	No
E18 Party wall between dwellings	Non Gov Approved Schemes	9.99	0.05	0.05	RCD	No

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	500755
Configuration	500755
Duct Type	Rigid
Wet Rooms	4

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.15	In Room Fan Kitchen	1
0.15	In Room Fan Other Wet Room	3

20.0 Fans, Open Fireplaces, Flues

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

Summary for Input Data

21.0 Fixed Cooling System	No	
22.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	m³/(h.m²) @ 50 Pa
Test Method	Blower Door	

22.0 Lighting

No Fixed Lighting	No

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	15

24.0 Main Heating 1	Manufacturer	
Percentage of Heat	100.00	%
Fuel Type	Mains gas	
SAP Code	104	
In Winter	88.90	
In Summer	80.30	
Model Name	Gas	
Manufacturer	Gas	
Controls SAP Code	2110	
Delayed Start Stat	Yes	
Burner Control	Modulating	
Flue Type	Balanced	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
Boiler Interlock	Yes	
Combi boiler type	Standard Combi	
Combi keep hot type	None	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	

28.0 Water Heating

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

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Shower	Combi boiler or unvented hot water system	8.00		Yes	Instantaneous System 1

28.3 Waste Water Heat Recovery System

Summary for Input Data

Instantaneous System 1

Database ID	80171
Brand Model	Zypho, iZi 40
Details	Year: 2020 + current Efficiency: 35.55 Utilisation factor: 0.981

29.0 Hot Water Cylinder	None
34.0 Small-scale Hydro	None

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Plot Reference	Type 4	Issued on Date	09/02/2026
Assessment Reference	001	Plot Type Ref	Type 4
Plot Address	Type 4	SAP Version	10.2

SAP Rating	85 B	DER	13.82	TER	10.71
Environmental	87 B	% DER < TER			-29.04
CO_2 Emissions (t/year)	1.38	DFEE	38.92	TFEE	39.74
Compliance Check	See BREL	% DFEE < TFEE			2.07
% DPER < TPER	-37.84	DPER	77.03	TPER	55.88

Assessor Details	Mr. Matthew Fitzpatrick	Assessor ID	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	1.00 m	55.27 m²	2.39 m
1st Storey:	1.00 m	55.27 m²	2.61 m

8.0 Living Area 16.43 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
Masonary Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	152.56	126.36	0.00	None	26.20	Enter Gross Area

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Block Partition	Dense block, plasterboard on dabs	75.00	34.13
Stud Partition	Plasterboard on timber frame	9.00	174.16

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	55.27	55.27	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	55.27

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	55.27

11.2 Internal Floors

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

Summary for Input Data

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Internal Floor	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor		18.00	55.27

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30
Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
1	Windows	Masonary Wall	North	10.72	
2	Windows	Masonary Wall	East	2.75	
3	Windows	Masonary Wall	West	0.72	
4	Windows	Masonary Wall	South	9.88	
Front Door	Front Door	Masonary Wall	North	2.13	

14.0 Conservatory	None	
15.0 Draught Proofing	0	%
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	16.48	0.05	0.05		No
E3 Sill	Non Gov Approved Schemes	9.58	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	39.70	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	31.22	0.05	0.05	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	29.93	0.00	0.00	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	17.76	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	12.16	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	24.75	0.04	0.04	RCD	No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	4.77	-0.10	-0.10	RCD	No

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	500755
Configuration	500755
Duct Type	Rigid
Wet Rooms	5

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.15	In Room Fan Kitchen	1
0.15	In Room Fan Other Wet Room	4

20.0 Fans, Open Fireplaces, Flues

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

21.0 Fixed Cooling System	No
22.0 Pressure Testing	Yes

Summary for Input Data

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Designed AP_{50}	4.00	$m^3/(h.m^2)$ @ 50 Pa
Test Method	Blower Door	

22.0 Lighting

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

24.0 Main Heating 1	Manufacturer	
Percentage of Heat	100.00	%
Fuel Type	Mains gas	
SAP Code	104	
In Winter	88.90	
In Summer	80.30	
Model Name	Gas	
Manufacturer	Gas	
Controls SAP Code	2110	
Delayed Start Stat	Yes	
Burner Control	Modulating	
Flue Type	Balanced	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
Boiler Interlock	Yes	
Combi boiler type	Standard Combi	
Combi keep hot type	None	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	
28.0 Water Heating		
Water Heating	Main Heating 1	
SAP Code	901	
Flue Gas Heat Recovery System	No	
Waste Water Heat Recovery Instantaneous System 1	Yes	
Waste Water Heat Recovery Instantaneous System 2	No	
Waste Water Heat Recovery Storage System	No	
Solar Panel	No	
Water use <= 125 litres/person/day	Yes	
Cold Water Source	From mains	
Bath Count	1	

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
1	Combi boiler or unvented hot water system	8.00		Yes	Instantaneous System 1
2	Combi boiler or unvented hot water system	8.00		No	
3	Combi boiler or unvented hot water system	8.00		No	

28.3 Waste Water Heat Recovery System Instantaneous System 1

Database ID	80171

Summary for Input Data

Brand Model	Zypho, iZi 40
Details	Year: 2020 + current Efficiency: 35.55 Utilisation factor: 0.981
29.0 Hot Water Cylinder	None
34.0 Small-scale Hydro	None

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

Plot Reference	Type 5	Issued on Date	09/02/2026
Assessment Reference	001	Plot Type Ref	Type 5
Plot Address	Type 5	SAP Version	10.2

SAP Rating	86 B	DER	12.84	TER	10.22
Environmental	88 B	% DER < TER			-25.64
CO_2 Emissions (t/year)	1.36	DFEE	37.80	TFEE	38.77
Compliance Check	See BREL	% DFEE < TFEE			2.48
% DPER < TPER	-34.46	DPER	71.70	TPER	53.32

Assessor Details	Mr. Matthew Fitzpatrick	Assessor ID	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	1.00 m	59.13 m²	2.39 m
1st Storey:	1.00 m	59.13 m²	2.61 m

8.0 Living Area 22.11 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
Masonary Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	162.22	134.61	0.00	None	27.61	Enter Gross Area

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Block Partition	Dense block, plasterboard on dabs	75.00	69.99
Stud Partition	Plasterboard on timber frame	9.00	150.22

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	59.13	59.13	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	59.13

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	59.13

11.2 Internal Floors

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

Internal Floor	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor		18.00	59.13

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
1	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30
2	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30
Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
1	1	Masonary Wall	North	10.69	
2	2	Masonary Wall	South	14.94	
Front Door	Front Door	Masonary Wall	North	1.98	

14.0 Conservatory	None	
15.0 Draught Proofing	0	%
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	17.59	0.05	0.05		No
E3 Sill	Non Gov Approved Schemes	10.74	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	40.20	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	32.46	0.05	0.05	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	32.43	0.00	0.00	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	17.08	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	15.36	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	25.00	0.04	0.04	RCD	No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	5.00	-0.10	-0.10	RCD	No

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	500755
Configuration	500755
Duct Type	Rigid
Wet Rooms	4

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.15	In Room Fan Kitchen	1
0.15	In Room Fan Other Wet Room	3

20.0 Fans, Open Fireplaces, Flues

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

21.0 Fixed Cooling System	No
22.0 Pressure Testing	Yes

Summary for Input Data

Designed AP_{50}	4.00	$m^3/(h.m^2)$ @ 50 Pa
Test Method	Blower Door	

22.0 Lighting

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

24.0 Main Heating 1	Manufacturer	
Percentage of Heat	100.00	%
Fuel Type	Mains gas	
SAP Code	104	
In Winter	88.90	
In Summer	80.30	
Model Name	Gas	
Manufacturer	Gas	
Controls SAP Code	2110	
Delayed Start Stat	Yes	
Burner Control	Modulating	
Flue Type	Balanced	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
Boiler Interlock	Yes	
Combi boiler type	Standard Combi	
Combi keep hot type	None	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	
28.0 Water Heating		
Water Heating	Main Heating 1	
SAP Code	901	
Flue Gas Heat Recovery System	No	
Waste Water Heat Recovery Instantaneous System 1	Yes	
Waste Water Heat Recovery Instantaneous System 2	No	
Waste Water Heat Recovery Storage System	No	
Solar Panel	No	
Water use <= 125 litres/person/day	Yes	
Cold Water Source	From mains	
Bath Count	1	

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Shower	Combi boiler or unvented hot water system	8.00		Yes	Instantaneous System 1

28.3 Waste Water Heat Recovery System Instantaneous System 1		
Database ID	80171	
Brand Model	Zypho, iZi 40	

Summary for Input Data

Details	Year: 2020 + current Efficiency: 35.55 Utilisation factor: 0.981
29.0 Hot Water Cylinder	None
34.0 Small-scale Hydro	None

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Plot Reference	Type 6	Issued on Date	09/02/2026
Assessment Reference	001	Plot Type Ref	Type 6
Plot Address	Type 6	SAP Version	10.2

SAP Rating	85 B	DER	13.05	TER	10.00
Environmental	88 B	% DER < TER			-30.50
CO_2 Emissions (t/year)	1.41	DFEE	36.59	TFEE	37.46
Compliance Check	See BREL	% DFEE < TFEE			2.33
% DPER < TPER	-40.12	DPER	73.17	TPER	52.22

Assessor Details	Mr. Matthew Fitzpatrick	Assessor ID	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	1.00 m	59.86 m²	2.39 m
1st Storey:	1.00 m	59.86 m²	2.61 m

8.0 Living Area 16.08 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	157.70	137.86	0.00	None	19.84	Enter Gross Area

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud Partitions	Plasterboard on timber frame	9.00	200.44
Block Partitions	Dense block, plasterboard on dabs	75.00	53.75

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	59.86	59.86	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	59.86

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	59.86

11.2 Internal Floors

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

Internal Floor 1	+1	Plasterboard ceiling, carpeted chipboard floor		18.00	59.86

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Doors	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.00
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Door	Doors	External Wall 1	North	2.15	
W1	Windows	External Wall 1	North	6.97	
W2	Windows	External Wall 1	East	0.72	
W3	Windows	External Wall 1	West	0.72	
W4	Windows	External Wall 1	South	9.28	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	14.06	0.05	0.05	HiTherm	No
E3 Sill	Non Gov Approved Schemes	10.67	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	29.25	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	31.50	0.05	0.05	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	12.85	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	18.69	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	19.98	0.04	0.04	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	31.54	0.00	0.00	RCD	No

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	No
Mechanical Ventilation data Type	Database
Type	Mechanical extract ventilation - decentralised
MV Reference Number	500755
Duct Type	Rigid
Wet Rooms	5

19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

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

21.0 Fixed Cooling System	No

Summary for Input Data

elmhurst energy

22.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	$m^3/(h.m^2)$ @ 50 Pa
Test Method	Blower Door	

22.0 Lighting

No Fixed Lighting	No

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	10

24.0 Main Heating 1	Manufacturer	
Percentage of Heat	100.00	%
Fuel Type	Mains gas	
SAP Code	104	
In Winter	88.90	
In Summer	80.30	
Model Name	Gas	
Manufacturer	Gas	
Controls SAP Code	2110	
Delayed Start Stat	Yes	
Burner Control	Modulating	
Flue Type	Balanced	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
Boiler Interlock	Yes	
Combi boiler type	Standard Combi	
Combi keep hot type	None	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	

28.0 Water Heating

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

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	8.00		Yes	Instantaneous System 1
Shower 2	Combi boiler or unvented hot water system	8.00		No	

28.3 Waste Water Heat Recovery System Instantaneous System 1

Summary for Input Data

Database ID	80171
Brand Model	Zypho, iZi 40
Details	Year: 2020 + current Efficiency: 35.55 Utilisation factor: 0.981

29.0 Hot Water Cylinder	None

34.0 Small-scale Hydro	None

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Plot Reference	Type 7	**Issued on Date**	09/02/2026
Assessment Reference	001	**Plot Type Ref**	Type 7
Plot Address	Type 7	**SAP Version**	10.2

SAP Rating	85 B	**DER**	13.51	**TER**	10.53
Environmental	87 B	**% DER < TER**			-28.30
CO_2 Emissions (t/year)	1.51	**DFEE**	40.70	**TFEE**	41.86
Compliance Check	See BREL	**% DFEE < TFEE**			2.75
% DPER < TPER	-36.57	**DPER**	75.19	**TPER**	55.06

Assessor Details	Mr. Matthew Fitzpatrick	**Assessor ID**	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	1.00 m	63.01 m²	2.38 m
1st Storey:	1.00 m	60.97 m²	2.61 m

8.0 Living Area 22.24 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
Masonary Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	79.36	59.32	0.00	None	20.04	Enter Gross Area
Tile Hanging Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	82.83	72.40	0.00	None	10.43	Enter Gross Area

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud Partitions	Plasterboard on timber frame	9.00	174.61
Block Partitions	Dense block, plasterboard on dabs	75.00	62.27

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	60.97	60.97	None	0.00	Enter Gross Area	0.00
Bay Roof	External Flat Roof	Plasterboard, insulated flat roof	0.11	9.00	2.09	2.09	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	60.97

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Suspended Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	63.01

Summary for Input Data

elmhurst energy

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	18.00	60.97

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
1	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30
2	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30
3	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30
4	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30
5	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30
6	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30
7	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30
8	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30
Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
1	1	Masonary Wall	North	6.44	
2	2	Masonary Wall	East	3.00	
3	3	Masonary Wall	West	5.73	
4	4	Masonary Wall	South	3.09	
5	5	Tile Hanging Wall	North	4.43	
6	6	Tile Hanging Wall	East	3.00	
7	7	Tile Hanging Wall	West	1.50	
8	8	Tile Hanging Wall	South	1.50	
Front Door	Front Door	Masonary Wall	North	1.78	

14.0 Conservatory	None	
15.0 Draught Proofing	0	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	21.74	0.05	0.05	HiTherm	No
E3 Sill	Non Gov Approved Schemes	17.21	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	60.00	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	33.27	0.05	0.05	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	27.50	0.00	0.00	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	18.29	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	17.68	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	24.75	0.04	0.04	RCD	No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	4.77	-0.10	-0.10	RCD	No

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	500755
Configuration	500755
Duct Type	Rigid
Wet Rooms	5

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.15	In Room Fan Kitchen	1
0.15	In Room Fan Other Wet Room	4

20.0 Fans, Open Fireplaces, Flues

Summary for Input Data

elmhurst energy

Number of open chimneys	0	
Number of open flues	0	
Number of chimneys/flues attached to closed fire	0	
Number of flues attached to solid fuel boiler	0	
Number of flues attached to other heater	0	
Number of blocked chimneys	0	
Number of intermittent extract fans	0	
Number of passive vents	0	
Number of flueless gas fires	0	
21.0 Fixed Cooling System	No	
22.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	$m^3/(h.m^2)$ @ 50 Pa
Test Method	Blower Door	

22.0 Lighting

No Fixed Lighting: No

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	25

24.0 Main Heating 1	Manufacturer	
Percentage of Heat	100.00	%
Fuel Type	Mains gas	
SAP Code	104	
In Winter	88.90	
In Summer	80.30	
Model Name	Gas	
Manufacturer	Gas	
Controls SAP Code	2110	
Delayed Start Stat	Yes	
Burner Control	Modulating	
Flue Type	Balanced	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
Boiler Interlock	Yes	
Combi boiler type	Standard Combi	
Combi keep hot type	None	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	
28.0 Water Heating		
Water Heating	Main Heating 1	
SAP Code	901	
Flue Gas Heat Recovery System	No	
Waste Water Heat Recovery Instantaneous System 1	Yes	

Summary for Input Data

Waste Water Heat Recovery Instantaneous System 2	No
Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Cold Water Source	From mains
Bath Count	1

28.1 Showers

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

28.3 Waste Water Heat Recovery System

Instantaneous System 1

Database ID	80171
Brand Model	Zypho, iZi 40
Details	Year: 2020 + current Efficiency: 35.55 Utilisation factor: 0.981

29.0 Hot Water Cylinder None

34.0 Small-scale Hydro None

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Plot Reference	Type 8	**Issued on Date**	09/02/2026
Assessment Reference	001	**Plot Type Ref**	Type 8
Plot Address	Type 8	**SAP Version**	10.2

SAP Rating	86 B	**DER**	12.59	**TER**	9.53
Environmental	88 B	**% DER < TER**			-32.11
CO_2 Emissions (t/year)	1.57	**DFEE**	37.56	**TFEE**	38.20
Compliance Check	See BREL	**% DFEE < TFEE**			1.69
% DPER < TPER	-40.90	**DPER**	70.23	**TPER**	49.84

Assessor Details	Mr. Matthew Fitzpatrick	**Assessor ID**	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	1.00 m	68.90 m²	2.38 m
1st Storey:	1.00 m	68.90 m²	2.61 m

8.0 Living Area 18.37 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
Brick	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	171.96	147.72	0.00	None	24.24	Enter Gross Area

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud Partitions	Plasterboard on timber frame	9.00	203.33
Block Partitions	Dense block, plasterboard on dabs	75.00	61.23

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	68.90	68.90	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	68.90

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Suspended Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	68.90

11.2 Internal Floors

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

Internal Floor	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor		18.00	68.90

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30
Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30
Rear Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
1	Windows	Brick	North	9.58	
2	Windows	Brick	South	3.71	
3	Windows	Brick	South	6.88	
Front Door	Front Door	Brick	North	2.04	
Rear Door	Rear Door	Brick	West	2.03	

14.0 Conservatory	None	
15.0 Draught Proofing	0	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	16.61	0.05	0.05	HiTherm	No
E3 Sill	Non Gov Approved Schemes	11.79	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	38.10	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	34.40	0.05	0.05	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	34.45	0.00	0.00	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	15.31	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	19.14	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	24.98	0.04	0.04	RCD	No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	5.00	-0.10	-0.10	RCD	No

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	500755
Configuration	500755
Duct Type	Rigid
Wet Rooms	5

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.15	In Room Fan Kitchen	1
0.15	In Room Fan Other Wet Room	4

20.0 Fans, Open Fireplaces, Flues

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

21.0 Fixed Cooling System	No
22.0 Pressure Testing	Yes

Designed AP_{50}	4.00	m³/(h.m²) @ 50 Pa
Test Method	Blower Door	

22.0 Lighting

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

24.0 Main Heating 1	Manufacturer	
Percentage of Heat	100.00	%
Fuel Type	Mains gas	
SAP Code	104	
In Winter	88.90	
In Summer	80.30	
Model Name	Gas	
Manufacturer	Gas	
Controls SAP Code	2110	
Delayed Start Stat	Yes	
Burner Control	Modulating	
Flue Type	Balanced	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
Boiler Interlock	Yes	
Combi boiler type	Standard Combi	
Combi keep hot type	None	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	

28.0 Water Heating

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

28.1 Showers

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

28.3 Waste Water Heat Recovery System Instantaneous System 1

Database ID	80171

Summary for Input Data

Brand Model	Zypho, iZi 40
Details	Year: 2020 + current Efficiency: 35.55 Utilisation factor: 0.981
29.0 Hot Water Cylinder	None
34.0 Small-scale Hydro	None

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Plot Reference	Type 9	Issued on Date	09/02/2026
Assessment Reference	001	Plot Type Ref	Type 9
Plot Address	Type 9	SAP Version	10.2

SAP Rating	85 B	DER	12.67	TER	9.43
Environmental	88 B	% DER < TER			-34.36
CO_2 Emissions (t/year)	1.58	DFEE	37.46	TFEE	37.97
Compliance Check	See BREL	% DFEE < TFEE			1.34
% DPER < TPER	-43.91	DPER	70.95	TPER	49.30

Assessor Details	Mr. Matthew Fitzpatrick	Assessor ID	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	33.34 m	69.42 m²	2.39 m
1st Storey:	33.34 m	69.42 m²	2.61 m

8.0 Living Area 17.00 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	174.03	148.36	0.00	None	25.67	Enter Gross Area

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud Partitions	Plasterboard on timber frame	9.00	225.89
Block Partitions	Dense block, plasterboard on dabs	75.00	76.70

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	69.42	69.42	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	69.42

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	69.42

11.2 Internal Floors

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

Internal Floor 1	+1	Plasterboard ceiling, carpeted chipboard floor		18.00	69.42

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Doors	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Door	Doors	External Wall 1	North	2.02	
W1	Windows	External Wall 1	North	9.26	
W2	Windows	External Wall 1	South	11.76	
W3	Windows	External Wall 1	West	0.66	
Utility Door	Doors	External Wall 1	East	1.97	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges	

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	15.52	0.05	0.05	HiTherm	No
E3 Sill	Non Gov Approved Schemes	12.00	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	36.00	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	33.34	0.05	0.05	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	17.12	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	16.22	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	20.00	0.04	0.04	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	33.34	0.00	0.00	RCD	No

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	No
Mechanical Ventilation data Type	Database
Type	Mechanical extract ventilation - decentralised
MV Reference Number	500755
Duct Type	Rigid
Wet Rooms	6

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.15	In Room Fan Kitchen	1
0.15	In Room Fan Other Wet Room	5
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other Wet Room	0
0.11	Through Wall Fan Kitchen	0
0.14	Through Wall Fan Other Wet Room	0

20.0 Fans, Open Fireplaces, Flues

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

21.0 Fixed Cooling System	No

Summary for Input Data

elmhurst energy

22.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	$m^3/(h.m^2)$ @ 50 Pa
Test Method	Blower Door	

22.0 Lighting

No Fixed Lighting	No

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	10

24.0 Main Heating 1	Manufacturer	
Percentage of Heat	100.00	%
Fuel Type	Mains gas	
SAP Code	104	
In Winter	88.90	
In Summer	80.30	
Model Name	Gas	
Manufacturer	Gas	
Controls SAP Code	2110	
Delayed Start Stat	Yes	
Burner Control	Modulating	
Flue Type	Balanced	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
Boiler Interlock	Yes	
Combi boiler type	Standard Combi	
Combi keep hot type	None	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	

28.0 Water Heating

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

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Shower 2	Combi boiler or unvented hot water system	8.00		Yes	Instantaneous System 1
Shower 1	Combi boiler or unvented hot water system	8.00		No	
Shower 3	Combi boiler or unvented hot water system	8.00		No	

28.3 Waste Water Heat Recovery System Instantaneous System 1

Summary for Input Data

Database ID	80171
Brand Model	Zypho, iZi 40
Details	Year: 2020 + current Efficiency: 35.55 Utilisation factor: 0.981

29.0 Hot Water Cylinder	None

34.0 Small-scale Hydro	None

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

Plot Reference	Type 10	**Issued on Date**	09/02/2026
Assessment Reference	001	**Plot Type Ref**	Type 10
Plot Address	Type 10	**SAP Version**	10.2

SAP Rating	86 B	**DER**	12.10	**TER**	9.00
Environmental	88 B	**% DER < TER**			-34.44
CO_2 Emissions (t/year)	1.67	**DFEE**	37.46	**TFEE**	38.51
Compliance Check	See BREL	**% DFEE < TFEE**			2.71
% DPER < TPER	-43.83	**DPER**	67.68	**TPER**	47.06

Assessor Details	Mr. Matthew Fitzpatrick	**Assessor ID**	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	1.00 m	77.21 m²	2.39 m
1st Storey:	1.00 m	77.21 m²	2.61 m

8.0 Living Area 21.67 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	189.95	156.12	0.00	None	33.83	Enter Gross Area

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud Partitions	Plasterboard on timber frame	9.00	210.38
Block Partitions	Dense block, plasterboard on dabs	75.00	89.29

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	77.21	77.21	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	77.21

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	77.21

11.2 Internal Floors

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

Internal Floor 1	+1	Plasterboard ceiling, carpeted chipboard floor		18.00	77.21

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Doors	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Door	Doors	External Wall 1	North	2.13	
W1	Windows	External Wall 1	North	11.49	
W2	Windows	External Wall 1	East	1.68	
W3	Windows	External Wall 1	West	2.87	
W4	Windows	External Wall 1	South	15.66	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	22.42	0.05	0.05	HiTherm	No
E3 Sill	Non Gov Approved Schemes	14.96	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	51.30	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	38.03	0.05	0.05	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	19.93	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	18.10	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	24.98	0.04	0.04	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	38.03	0.00	0.00	RCD	No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	5.00	-0.10	-0.10	RCD	No

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	No
Mechanical Ventilation data Type	Database
Type	Mechanical extract ventilation - decentralised
MV Reference Number	500755
Duct Type	Rigid
Wet Rooms	6

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.15	In Room Fan Kitchen	1
0.15	In Room Fan Other Wet Room	5
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other Wet Room	0
0.11	Through Wall Fan Kitchen	0
0.14	Through Wall Fan Other Wet Room	0

20.0 Fans, Open Fireplaces, Flues

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

Summary for Input Data

elmhurst energy

21.0 Fixed Cooling System	No	
22.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	$m^3/(h.m^2)$ @ 50 Pa
Test Method	Blower Door	

22.0 Lighting

No Fixed Lighting	No				
	Name	**Efficacy**	**Power**	**Capacity**	**Count**
	Lighting 1	75.00	10.00	750.00	10

24.0 Main Heating 1	Manufacturer	
Percentage of Heat	100.00	%
Fuel Type	Mains gas	
SAP Code	104	
In Winter	88.90	
In Summer	80.30	
Model Name	Gas	
Manufacturer	Gas	
Controls SAP Code	2110	
Delayed Start Stat	Yes	
Burner Control	Modulating	
Flue Type	Balanced	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
Boiler Interlock	Yes	
Combi boiler type	Standard Combi	
Combi keep hot type	None	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	

28.0 Water Heating

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

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	8.00		Yes	Instantaneous System 1
Shower 2	Combi boiler or unvented hot water system	8.00		No	
Shower 3	Combi boiler or unvented hot water system	8.00		No	

Summary for Input Data

28.3 Waste Water Heat Recovery System

Instantaneous System 1

Database ID	80171
Brand Model	Zypho, iZi 40
Details	Year: 2020 + current Efficiency: 35.55 Utilisation factor: 0.981

29.0 Hot Water Cylinder None

34.0 Small-scale Hydro None

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

Plot Reference	Type 11	**Issued on Date**	09/02/2026
Assessment Reference	001	**Plot Type Ref**	Type 11
Plot Address	Type 11	**SAP Version**	10.2

SAP Rating	86 B	**DER**	11.65	**TER**	8.56
Environmental	88 B	**% DER < TER**			-36.10
CO_2 Emissions (t/year)	1.82	**DFEE**	37.07	**TFEE**	38.04
Compliance Check	See BREL	**% DFEE < TFEE**			2.55
% DPER < TPER	-45.34	**DPER**	65.18	**TPER**	44.85

Assessor Details	Mr. Matthew Fitzpatrick	**Assessor ID**	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	1.00 m	86.40 m²	2.39 m
1st Storey:	1.00 m	88.33 m²	2.61 m

8.0 Living Area 17.77 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	190.31	156.42	0.00	None	33.89	Enter Gross Area

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud Partitions	Plasterboard on timber frame	9.00	215.37
Block Partitions	Dense block, plasterboard on dabs	75.00	110.85

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	88.33	88.33	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	88.33

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	86.40
Exposed Floor	Exposed Floor - Timber	+1	Timber exposed floor, insulation between joists	0.15	None	0.00	20.00	1.97

11.2 Internal Floors

Summary for Input Data

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1	+1	Plasterboard ceiling, carpeted chipboard floor	18.00	88.33

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Doors	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Door	Doors	External Wall 1	North	2.02	
W1	Windows	External Wall 1	North	12.58	
W2	Windows	External Wall 1	East	0.67	
W3	Windows	External Wall 1	West	0.67	
W4	Windows	External Wall 1	South	15.98	
Utility Door	Doors	External Wall 1	South	1.97	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	23.12	0.05	0.05	HiTherm	No
E3 Sill	Non Gov Approved Schemes	16.17	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	46.80	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	37.40	0.05	0.05	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	19.15	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	19.62	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	25.20	0.04	0.04	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	34.47	0.00	0.00	RCD	No
E20 Exposed floor (normal)	Table K1 - Default	4.27	0.32	0.32		No
E21 Exposed floor (inverted)	Table K1 - Default	2.93	0.32	0.32		No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	5.22	-0.10	-0.10	RCD	No

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	No
Mechanical Ventilation data Type	Database
Type	Mechanical extract ventilation - decentralised
MV Reference Number	500755
Duct Type	Rigid
Wet Rooms	6

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.15	In Room Fan Kitchen	1
0.15	In Room Fan Other Wet Room	5
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other Wet Room	0
0.11	Through Wall Fan Kitchen	0
0.14	Through Wall Fan Other Wet Room	0

20.0 Fans, Open Fireplaces, Flues

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

Summary for Input Data

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Number of passive vents	0	
Number of flueless gas fires	0	
21.0 Fixed Cooling System	No	
22.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	$m^3/(h.m^2)$ @ 50 Pa
Test Method	Blower Door	
22.0 Lighting		
No Fixed Lighting	No	

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	10

24.0 Main Heating 1	Manufacturer	
Percentage of Heat	100.00	%
Fuel Type	Mains gas	
SAP Code	104	
In Winter	88.90	
In Summer	80.30	
Model Name	Gas	
Manufacturer	Gas	
Controls SAP Code	2110	
Delayed Start Stat	Yes	
Burner Control	Modulating	
Flue Type	Balanced	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
Boiler Interlock	Yes	
Combi boiler type	Standard Combi	
Combi keep hot type	None	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	
28.0 Water Heating		
Water Heating	Main Heating 1	
SAP Code	901	
Flue Gas Heat Recovery System	No	
Waste Water Heat Recovery Instantaneous System 1	Yes	
Waste Water Heat Recovery Instantaneous System 2	No	
Waste Water Heat Recovery Storage System	No	
Solar Panel	No	
Water use <= 125 litres/person/day	Yes	
Cold Water Source	From mains	
Bath Count	1	
28.1 Showers		

Summary for Input Data

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Shower 2	Combi boiler or unvented hot water system	8.00		Yes	Instantaneous System 1
Shower 1	Combi boiler or unvented hot water system	8.00		No	
Shower 3	Combi boiler or unvented hot water system	8.00		No	

28.3 Waste Water Heat Recovery System

Instantaneous System 1

Database ID	80171
Brand Model	Zypho, iZi 40
Details	Year: 2020 + current Efficiency: 35.55 Utilisation factor: 0.981

29.0 Hot Water Cylinder None

34.0 Small-scale Hydro None

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Plot Reference	Type A3	**Issued on Date**	09/02/2026
Assessment Reference	001	**Plot Type Ref**	Type A3
Plot Address	Type A3	**SAP Version**	10.2

SAP Rating	84 B	**DER**	14.32	**TER**	11.76
Environmental	88 B	**% DER < TER**			-21.77
CO_2 Emissions (t/year)	1.05	**DFEE**	34.31	**TFEE**	35.45
Compliance Check	See BREL	**% DFEE < TFEE**			3.21
% DPER < TPER	-30.72	**DPER**	80.58	**TPER**	61.64

Assessor Details	Mr. Matthew Fitzpatrick	**Assessor ID**	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Semi-Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	1.00 m	39.97 m²	2.39 m
1st Storey:	1.00 m	39.97 m²	2.61 m

8.0 Living Area	19.59	m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	89.58	77.80	0.00	None	11.78	Enter Gross Area

9.1 Party Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
Party Wall 1	Filled Cavity with Edge Sealing	Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill	0.00	110.00	48.89	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud Partitions	Plasterboard on timber frame	9.00	115.22
Block Partitions	Dense block, plasterboard on dabs	75.00	14.41

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	39.97	39.97	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	39.97

11.0 Heat Loss Floors

Summary for Input Data

elmhurst energy

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	39.97

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1	+1	Plasterboard ceiling, carpeted chipboard floor	18.00	39.97

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Doors	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Door	Doors	External Wall 1	North	2.15	
W1	Windows	External Wall 1	North	3.53	
W4	Windows	External Wall 1	South	3.95	
Rear Door	Doors	External Wall 1	South	2.15	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges	

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	8.28	0.05	0.05	HiTherm	No
E3 Sill	Non Gov Approved Schemes	6.24	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	20.25	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	17.91	0.05	0.05	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	8.16	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	9.79	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	9.99	0.04	0.04	RCD	No
E18 Party wall between dwellings	Non Gov Approved Schemes	9.99	0.05	0.05	RCD	No
P1 Party wall - Ground floor	Non Gov Approved Schemes	9.78	0.04	0.04	RCD	No
P2 Party wall - Intermediate floor within a dwelling	Table K1 - Default	9.79	0.00	0.07	Table K1	No
P4 Party wall - Roof (insulation at ceiling level)	Non Gov Approved Schemes	9.79	0.03	0.03	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	17.96	0.00	0.00	RCD	No

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	500755
Duct Type	Rigid
Wet Rooms	3

19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0
Number of flues attached to solid fuel boiler	0
Number of flues attached to other heater	0

Summary for Input Data

Number of blocked chimneys	0	
Number of intermittent extract fans	0	
Number of passive vents	0	
Number of flueless gas fires	0	
21.0 Fixed Cooling System	No	
22.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	m³/(h.m²) @ 50 Pa
Test Method	Blower Door	
22.0 Lighting		
No Fixed Lighting	No	

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	10

24.0 Main Heating 1	Manufacturer	
Percentage of Heat	100.00	%
Fuel Type	Mains gas	
SAP Code	104	
In Winter	88.90	
In Summer	80.30	
Model Name	Gas	
Manufacturer	Gas	
Controls SAP Code	2110	
Delayed Start Stat	Yes	
Burner Control	Modulating	
Flue Type	Balanced	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
Boiler Interlock	Yes	
Combi boiler type	Standard Combi	
Combi keep hot type	None	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	
28.0 Water Heating		
Water Heating	Main Heating 1	
SAP Code	901	
Flue Gas Heat Recovery System	No	
Waste Water Heat Recovery Instantaneous System 1	Yes	
Waste Water Heat Recovery Instantaneous System 2	No	
Waste Water Heat Recovery Storage System	No	
Solar Panel	No	
Water use <= 125 litres/person/day	Yes	
Cold Water Source	From mains	

Summary for Input Data

Bath Count	1

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Showers	Combi boiler or unvented hot water system	8.00		Yes	Instantaneous System 1

28.3 Waste Water Heat Recovery System

Instantaneous System 1

Database ID	80171
Brand Model	Zypho, iZi 40
Details	Year: 2020 + current Efficiency: 35.55 Utilisation factor: 0.981

29.0 Hot Water Cylinder	None
34.0 Small-scale Hydro	None

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Plot Reference	Type A5	**Issued on Date**	09/02/2026
Assessment Reference	001	**Plot Type Ref**	Type A5
Plot Address	Type A5	**SAP Version**	10.2

SAP Rating	85 B	**DER**	14.02	**TER**	11.38
Environmental	88 B	**% DER < TER**			-23.20
CO_2 Emissions (t/year)	1.19	**DFEE**	37.14	**TFEE**	38.34
Compliance Check	See BREL	**% DFEE < TFEE**			3.13
% DPER < TPER	-32.19	**DPER**	78.59	**TPER**	59.45

Assessor Details	Mr. Matthew Fitzpatrick	**Assessor ID**	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Semi-Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	1.00 m	46.85 m²	2.39 m
1st Storey:	1.00 m	46.85 m²	2.61 m

8.0 Living Area 22.57 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	96.69	76.77	0.00	None	19.92	Enter Gross Area

9.1 Party Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
Party Wall 1	Filled Cavity with Edge Sealing	Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill	0.00	110.00	48.91	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud Partitions	Plasterboard on timber frame	9.00	146.93
Block Partitions	Dense block, plasterboard on dabs	75.00	17.57

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	46.85	46.85	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	46.85

11.0 Heat Loss Floors

Summary for Input Data

elmhurst energy

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	39.97

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1	+1	Plasterboard ceiling, carpeted chipboard floor	18.00	39.97

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Doors	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Door	Doors	External Wall 1	North	2.15	
W1	Windows	External Wall 1	North	8.28	
W4	Windows	External Wall 1	East	4.07	
Rear Door	Doors	External Wall 1	South	2.15	
W3	Windows	External Wall 1	West	3.27	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges	

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	14.73	0.05	0.05	HiTherm	No
E3 Sill	Non Gov Approved Schemes	12.23	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	31.95	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	19.35	0.05	0.05	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	9.79	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	9.56	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	9.99	0.04	0.04	RCD	No
E18 Party wall between dwellings	Non Gov Approved Schemes	9.99	0.05	0.05	RCD	No
P1 Party wall - Ground floor	Non Gov Approved Schemes	9.79	0.04	0.04	RCD	No
P2 Party wall - Intermediate floor within a dwelling	Table K1 - Default	9.79	0.00	0.07	Table K1	No
P4 Party wall - Roof (insulation at ceiling level)	Non Gov Approved Schemes	9.79	0.03	0.03	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	19.35	0.00	0.00	RCD	No

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	No
Mechanical Ventilation data Type	Database
Type	Mechanical extract ventilation - decentralised
MV Reference Number	500755
Duct Type	Rigid
Wet Rooms	3

19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0
Number of flues attached to solid fuel boiler	0
Number of flues attached to other heater	0

Summary for Input Data

Number of blocked chimneys	0	
Number of intermittent extract fans	0	
Number of passive vents	0	
Number of flueless gas fires	0	
21.0 Fixed Cooling System	No	
22.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	m³/(h.m²) @ 50 Pa
Test Method	Blower Door	
22.0 Lighting		
No Fixed Lighting	No	

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	10

24.0 Main Heating 1	Manufacturer	
Percentage of Heat	100.00	%
Fuel Type	Mains gas	
SAP Code	104	
In Winter	88.90	
In Summer	80.30	
Model Name	Gas	
Manufacturer	Gas	
Controls SAP Code	2110	
Delayed Start Stat	Yes	
Burner Control	Modulating	
Flue Type	Balanced	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
Boiler Interlock	Yes	
Combi boiler type	Standard Combi	
Combi keep hot type	None	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	
28.0 Water Heating		
Water Heating	Main Heating 1	
SAP Code	901	
Flue Gas Heat Recovery System	No	
Waste Water Heat Recovery Instantaneous System 1	Yes	
Waste Water Heat Recovery Instantaneous System 2	No	
Waste Water Heat Recovery Storage System	No	
Solar Panel	No	
Water use <= 125 litres/person/day	Yes	
Cold Water Source	From mains	

Summary for Input Data

elmhurst energy

Bath Count	1

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	8.00		Yes	Instantaneous System 1

28.3 Waste Water Heat Recovery System

Instantaneous System 1

Database ID	80171
Brand Model	Zypho, iZi 40
Details	Year: 2020 + current Efficiency: 35.55 Utilisation factor: 0.981

29.0 Hot Water Cylinder	None
34.0 Small-scale Hydro	None

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Plot Reference	Type A6	Issued on Date	09/02/2026
Assessment Reference	001	Plot Type Ref	Type A6
Plot Address	Type A6	SAP Version	10.2

SAP Rating	85 B	DER	13.42	TER	10.78
Environmental	88 B	% DER < TER			-24.49
CO_2 Emissions (t/year)	1.14	DFEE	33.52	TFEE	34.70
Compliance Check	See BREL	% DFEE < TFEE			3.40
% DPER < TPER	-34.05	DPER	75.57	TPER	56.37

Assessor Details	Mr. Matthew Fitzpatrick	Assessor ID	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Semi-Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	1.00 m	46.73 m²	2.39 m
1st Storey:	1.00 m	46.73 m²	2.61 m

8.0 Living Area 22.55 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	96.67	82.81	0.00	None	13.86	Enter Gross Area

9.1 Party Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
Party Wall 1	Filled Cavity with Edge Sealing	Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill	0.00	110.00	48.90	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud Partitions	Plasterboard on timber frame	9.00	144.80
Block Partitions	Dense block, plasterboard on dabs	75.00	17.41

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	46.73	46.73	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	46.73

11.0 Heat Loss Floors

Summary for Input Data

elmhurst energy

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	46.73

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1	+1	Plasterboard ceiling, carpeted chipboard floor	18.00	46.73

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Doors	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Door	Doors	External Wall 1	North	2.15	
W1	Windows	External Wall 1	North	4.79	
W4	Windows	External Wall 1	South	4.77	
Rear Door	Doors	External Wall 1	South	2.15	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges	

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	10.09	0.05	0.05	HiTherm	No
E3 Sill	Non Gov Approved Schemes	8.05	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	22.65	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	19.34	0.05	0.05	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	9.57	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	9.80	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	9.99	0.04	0.04	RCD	No
E18 Party wall between dwellings	Non Gov Approved Schemes	9.99	0.05	0.05	RCD	No
P1 Party wall - Ground floor	Non Gov Approved Schemes	9.78	0.04	0.04	RCD	No
P2 Party wall - Intermediate floor within a dwelling	Table K1 - Default	9.80	0.00	0.07	Table K1	No
P4 Party wall - Roof (insulation at ceiling level)	Non Gov Approved Schemes	9.80	0.03	0.03	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	19.37	0.00	0.00	RCD	No

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	500755
Duct Type	Rigid
Wet Rooms	3

19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0
Number of flues attached to solid fuel boiler	0
Number of flues attached to other heater	0

Summary for Input Data

Number of blocked chimneys	0	
Number of intermittent extract fans	0	
Number of passive vents	0	
Number of flueless gas fires	0	
21.0 Fixed Cooling System	No	
22.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	m³/(h.m²) @ 50 Pa
Test Method	Blower Door	
22.0 Lighting		
No Fixed Lighting	No	

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	10

24.0 Main Heating 1	Manufacturer	
Percentage of Heat	100.00	%
Fuel Type	Mains gas	
SAP Code	104	
In Winter	88.90	
In Summer	80.30	
Model Name	Gas	
Manufacturer	Gas	
Controls SAP Code	2110	
Delayed Start Stat	Yes	
Burner Control	Modulating	
Flue Type	Balanced	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
Boiler Interlock	Yes	
Combi boiler type	Standard Combi	
Combi keep hot type	None	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	
28.0 Water Heating		
Water Heating	Main Heating 1	
SAP Code	901	
Flue Gas Heat Recovery System	No	
Waste Water Heat Recovery Instantaneous System 1	Yes	
Waste Water Heat Recovery Instantaneous System 2	No	
Waste Water Heat Recovery Storage System	No	
Solar Panel	No	
Water use <= 125 litres/person/day	Yes	
Cold Water Source	From mains	

Summary for Input Data

elmhurst energy

Bath Count	1

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	8.00		Yes	Instantaneous System 1

28.3 Waste Water Heat Recovery System

Instantaneous System 1

Database ID	80171
Brand Model	Zypho, iZi 40
Details	Year: 2020 + current Efficiency: 35.55 Utilisation factor: 0.981

29.0 Hot Water Cylinder	None
34.0 Small-scale Hydro	None

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Plot Reference	Type A7	**Issued on Date**	09/02/2026
Assessment Reference	001	**Plot Type Ref**	Type A7
Plot Address	Type A7	**SAP Version**	10.2

SAP Rating	85 B	**DER**	12.73	**TER**	10.19
Environmental	89 B	**% DER < TER**			-24.93
CO_2 Emissions (t/year)	1.16	**DFEE**	33.02	**TFEE**	34.12
Compliance Check	See BREL	**% DFEE < TFEE**			3.22
% DPER < TPER	-34.90	**DPER**	71.62	**TPER**	53.09

Assessor Details	Mr. Matthew Fitzpatrick	**Assessor ID**	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Semi-Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	1.00 m	50.18 m²	2.40 m
1st Storey:	1.00 m	50.18 m²	2.61 m

8.0 Living Area 30.84 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	100.82	83.65	0.00	None	17.17	Enter Gross Area

9.1 Party Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
Party Wall 1	Filled Cavity with Edge Sealing	Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill	0.00	110.00	45.71	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud Partitions	Plasterboard on timber frame	9.00	190.37

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	50.18	50.18	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	50.18

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)

Summary for Input Data

elmhurst energy

Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	50.18

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1	+1	Plasterboard ceiling, carpeted chipboard floor	18.00	50.18

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Doors	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Door	Doors	External Wall 1	North	2.15	
W1	Windows	External Wall 1	North	6.08	
W2	Windows	External Wall 1	East	1.42	
W3	Windows	External Wall 1	South	7.52	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	13.02	0.05	0.05	HiTherm	No
E3 Sill	Non Gov Approved Schemes	10.80	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	29.10	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	20.12	0.05	0.05	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	11.00	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	9.12	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	10.02	0.04	0.04	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	20.12	0.00	0.00	RCD	No
E18 Party wall between dwellings	Non Gov Approved Schemes	10.02	0.05	0.05	RCD	No

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	No
Mechanical Ventilation data Type	Database
Type	Mechanical extract ventilation - decentralised
MV Reference Number	500755
Duct Type	Rigid
Wet Rooms	3

19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

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

Summary for Input Data

Number of flueless gas fires	0	
21.0 Fixed Cooling System	No	
22.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	$m^3/(h.m^2)$ @ 50 Pa
Test Method	Blower Door	

22.0 Lighting

No Fixed Lighting: No

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	10

24.0 Main Heating 1	Manufacturer	
Percentage of Heat	100.00	%
Fuel Type	Mains gas	
SAP Code	104	
In Winter	88.90	
In Summer	80.30	
Model Name	Gas	
Manufacturer	Gas	
Controls SAP Code	2110	
Delayed Start Stat	Yes	
Burner Control	Modulating	
Flue Type	Balanced	
Fan Assisted Flue	Yes	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
Boiler Interlock	Yes	
Combi boiler type	Standard Combi	
Combi keep hot type	None	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	

28.0 Water Heating

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

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Showers	Combi boiler or unvented hot water system	8.00		Yes	Instantaneous System 1

Summary for Input Data

28.3 Waste Water Heat Recovery System

Instantaneous System 1

Database ID	80171
Brand Model	Zypho, iZi 40
Details	Year: 2020 + current Efficiency: 35.55 Utilisation factor: 0.981

29.0 Hot Water Cylinder None

34.0 Small-scale Hydro None

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

12.4. APPENDIX D: SAMPLE SAP SUMMARY INFORMATION SHEETS (BE GREEN)

Summary for Input Data

elmhurst energy

Plot Reference	SB M4(3)	**Issued on Date**	09/02/2026
Assessment Reference	001	**Plot Type Ref**	SB M4(3)
Plot Address	SB M4(3)	**SAP Version**	10.2

SAP Rating	85 B	**DER**	3.36	**TER**	9.37
Environmental	97 A	**% DER < TER**			64.14
CO_2 Emissions (t/year)	0.33	**DFEE**	31.67	**TFEE**	33.19
Compliance Check	See BREL	**% DFEE < TFEE**			4.57
% DPER < TPER	28.18	**DPER**	35.06	**TPER**	48.82

Assessor Details	Mr. Matthew Fitzpatrick	**Assessor ID**	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Semi-Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	169.64	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	20.96 m	54.71 m²	2.39 m
1st Storey:	20.96 m	54.71 m²	2.61 m

8.0 Living Area 23.13 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	104.82	89.78	0.00	None	15.04	Enter Gross Area

9.1 Party Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
Party Wall 1	Filled Cavity with Edge Sealing	Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill	0.00	110.00	49.12	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud Partitions	Plasterboard on timber frame	9.00	188.82

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	54.71	54.71	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	54.71

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)

Summary for Input Data

Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	54.71

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1	+1	Plasterboard ceiling, carpeted chipboard floor	18.00	54.71

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Doors	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Door	Doors	External Wall 1	North	2.15	
W1	Windows	External Wall 1	North	4.76	
W2	Windows	External Wall 1	East	0.66	
W3	Windows	External Wall 1	South	7.47	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges	

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	9.94	0.05	0.05	HiTherm	No
E3 Sill	Non Gov Approved Schemes	8.44	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	22.44	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	20.96	0.05	0.05	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	11.14	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	9.82	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	10.00	0.04	0.04	RCD	No
E18 Party wall between dwellings	Non Gov Approved Schemes	10.00	0.05	0.05	RCD	No
P1 Party wall - Ground floor	Non Gov Approved Schemes	9.82	0.04	0.04	RCD	No
P2 Party wall - Intermediate floor within a dwelling	Table K1 - Default	9.82	0.00	0.07	Table K1	No
P4 Party wall - Roof (insulation at ceiling level)	Non Gov Approved Schemes	9.82	0.03	0.03	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	20.96	0.00	0.00	RCD	No

Y-value	0.02	W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	Yes
Mechanical Ventilation data Type	Database
Type	Mechanical extract ventilation - decentralised
MV Reference Number	500755
Duct Type	Rigid
Wet Rooms	3

19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0
Number of flues attached to solid fuel boiler	0
Number of flues attached to other heater	0

Summary for Input Data

Number of blocked chimneys	0	
Number of intermittent extract fans	0	
Number of passive vents	0	
Number of flueless gas fires	0	
21.0 Fixed Cooling System	No	
22.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	m³/(h.m²) @ 50 Pa
Test Method	Blower Door	
22.0 Lighting		
No Fixed Lighting	No	

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	10

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	104431	
Fuel Type	Electricity	
In Winter	237.69	
In Summer	281.57	
Model Name	aroTHERM plus 7kW + AI	
Manufacturer	Vaillant Group UK Ltd	
System Type	Heat Pump	
Controls SAP Code	2207	
Controls description	Time and temperature zone control by arrangement	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	
28.0 Water Heating		
Water Heating	Main Heating 1	
SAP Code	901	
Flue Gas Heat Recovery System	No	
Waste Water Heat Recovery Instantaneous System 1	No	
Waste Water Heat Recovery Instantaneous System 2	No	
Waste Water Heat Recovery Storage System	No	
Solar Panel	No	
Water use <= 125 litres/person/day	Yes	
Cold Water Source	From mains	
Bath Count	1	
Immersion Only Heating Hot Water	No	

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Showers	Combi boiler or unvented hot water system	8.00		No	

28.3 Waste Water Heat Recovery System

Summary for Input Data

29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	200.00	L
Loss	1.20	kWh/day
Pipes insulation	Fully insulated primary pipework	
31.0 Thermal Store	None	
34.0 Small-scale Hydro	None	

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

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Plot Reference	SB1	**Issued on Date**	09/02/2026
Assessment Reference	001	**Plot Type Ref**	SB1
Plot Address	SB1	**SAP Version**	10.2

SAP Rating	84 B	**DER**	5.05	**TER**	16.27
Environmental	97 A	**% DER < TER**			68.96
CO_2 Emissions (t/year)	0.21	**DFEE**	42.48	**TFEE**	45.18
Compliance Check	See BREL	**% DFEE < TFEE**			5.98
% DPER < TPER	38.43	**DPER**	52.92	**TPER**	85.95

Assessor Details	Mr. Matthew Fitzpatrick	**Assessor ID**	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Maisonette, Semi-Detached	
Position of Flat	Ground-floor flat	
Which Floor	1	
2.0 Number of Storeys	1	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	27.45 m	45.11 m²	2.39 m

8.0 Living Area	23.25	m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	65.61	56.98	0.00	None	8.63	Enter Gross Area

9.1 Party Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
Party Wall 1	Filled Cavity with Edge Sealing	Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill	0.00	110.00	25.75	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud Partitions	Plasterboard on timber frame	9.00	50.79

10.1 Party Ceilings

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Party Ceiling 1	Precast concrete planks floor, screed, carpeted	30.00	45.11

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	45.11

12.0 Opening Types

Summary for Input Data

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Doors	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Door	Doors	External Wall 1	North	2.15	
W1	Windows	External Wall 1	North	2.94	
W2	Windows	External Wall 1	East	0.66	
W3	Windows	External Wall 1	West	2.88	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	5.94	0.05	0.05	HiTherm	No
E3 Sill	Non Gov Approved Schemes	5.94	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	13.80	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	27.45	0.05	0.05	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	9.56	0.04	0.04	RCD	No
E18 Party wall between dwellings	Non Gov Approved Schemes	7.17	0.05	0.05	RCD	No
P1 Party wall - Ground floor	Non Gov Approved Schemes	10.77	0.04	0.04	RCD	No
E7 Party floor between dwellings (in blocks of flats)	Non Gov Approved Schemes	27.45	0.05	0.05	RCD	No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	7.17	-0.10	-0.10	RCD	No
P3 Party wall - Intermediate floor between dwellings (in blocks of flats)	Table K1 - Default	10.77	0.00	0.00		No

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	500755
Duct Type	Rigid
Wet Rooms	2

19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

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

21.0 Fixed Cooling System	No

Summary for Input Data

22.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	m³/(h.m²) @ 50 Pa
Test Method	Blower Door	

22.0 Lighting

No Fixed Lighting	No				
	Name	**Efficacy**	**Power**	**Capacity**	**Count**
	Lighting 1	75.00	10.00	750.00	10

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	104415	
Fuel Type	Electricity	
Model Name	aroTHERM plus 5kW + AI	
Manufacturer	Vaillant Group UK Ltd	
Controls SAP Code	2207	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	

28.0 Water Heating

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

28.1 Showers

Description	**Shower Type**	**Flow Rate [l/min]**	**Rated Power [kW]**	**Connected**	**Connected To**
Showers	Combi boiler or unvented hot water system	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	150.00	L
Loss	1.00	kWh/day
Pipes insulation	Fully insulated primary pipework	
31.0 Thermal Store	None	

Summary for Input Data

34.0 Small-scale Hydro	None

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Plot Reference	SB2	**Issued on Date**	09/02/2026
Assessment Reference	001	**Plot Type Ref**	SB M4(3)
Plot Address	SB M4(3)	**SAP Version**	10.2

SAP Rating	83 B	**DER**	4.68	**TER**	13.69
Environmental	97 A	**% DER < TER**			65.81
CO_2 Emissions (t/year)	0.25	**DFEE**	39.25	**TFEE**	39.71
Compliance Check	See BREL	**% DFEE < TFEE**			1.15
% DPER < TPER	32.08	**DPER**	48.98	**TPER**	72.12

Assessor Details	Mr. Matthew Fitzpatrick	**Assessor ID**	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Maisonette, Semi-Detached	
Position of Flat	Top-floor flat	
Which Floor	2	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	1.81 m	5.25 m²	2.39 m
1st Storey:	29.97 m	53.81 m²	2.61 m

8.0 Living Area	26.52	m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	82.55	74.94	0.00	None	7.61	Enter Gross Area

9.1 Party Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
Party Wall 1	Filled Cavity with Edge Sealing	Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill	0.00	110.00	22.58	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud Partitions	Plasterboard on timber frame	9.00	113.27

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	53.81	53.81	None	0.00	Enter Gross Area	0.00

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	5.25

Summary for Input Data

elmhurst energy

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	+1	Precast concrete planks floor, screed, carpeted	40.00	48.56

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1	+1	Plasterboard ceiling, carpeted chipboard floor	18.00	54.71

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Doors	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Door	Doors	External Wall 1	North	2.15	
W1	Windows	External Wall 1	North	2.70	
W2	Windows	External Wall 1	East	2.10	
W3	Windows	External Wall 1	South	0.66	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	4.86	0.05	0.05	HiTherm	No
E3 Sill	Non Gov Approved Schemes	3.85	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	11.10	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	1.81	0.05	0.05	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	11.95	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	18.02	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	10.44	0.04	0.04	RCD	No
E18 Party wall between dwellings	Non Gov Approved Schemes	11.95	0.05	0.05	RCD	No
P1 Party wall - Ground floor	Non Gov Approved Schemes	9.45	0.04	0.04	RCD	No
P2 Party wall - Intermediate floor within a dwelling	Table K1 - Default	9.82	0.00	0.07	Table K1	No
P4 Party wall - Roof (insulation at ceiling level)	Non Gov Approved Schemes	9.82	0.03	0.03	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	1.81	0.00	0.00	RCD	No
E7 Party floor between dwellings (in blocks of flats)	Non Gov Approved Schemes	28.16	0.05	0.05		No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	2.39	-0.10	-0.10	RCD	No
P3 Party wall - Intermediate floor between dwellings (in blocks of flats)	Table K1 - Default	9.45	0.00	0.00		No

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	500755
Duct Type	Rigid
Wet Rooms	2

19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0

Summary for Input Data

Number of open flues	0	
Number of chimneys/flues attached to closed fire	0	
Number of flues attached to solid fuel boiler	0	
Number of flues attached to other heater	0	
Number of blocked chimneys	0	
Number of intermittent extract fans	0	
Number of passive vents	0	
Number of flueless gas fires	0	
21.0 Fixed Cooling System	No	
22.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	$m^3/(h.m^2)$ @ 50 Pa
Test Method	Blower Door	
22.0 Lighting		
No Fixed Lighting	No	

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	10

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	104415	
Fuel Type	Electricity	
Model Name	aroTHERM plus 5kW + AI	
Manufacturer	Vaillant Group UK Ltd	
Controls SAP Code	2207	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	
28.0 Water Heating		
Water Heating	Main Heating 1	
SAP Code	901	
Flue Gas Heat Recovery System	No	
Waste Water Heat Recovery Instantaneous System 1	No	
Waste Water Heat Recovery Instantaneous System 2	No	
Waste Water Heat Recovery Storage System	No	
Solar Panel	No	
Water use <= 125 litres/person/day	Yes	
Cold Water Source	From mains	
Bath Count	1	
Immersion Only Heating Hot Water	No	

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Showers	Combi boiler or unvented hot water system	8.00		No	

28.3 Waste Water Heat Recovery System

Summary for Input Data

29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	150.00	L
Loss	1.00	kWh/day
Pipes insulation	Fully insulated primary pipework	
31.0 Thermal Store	None	
34.0 Small-scale Hydro	None	

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Plot Reference	Type 1	**Issued on Date**	09/02/2026
Assessment Reference	001	**Plot Type Ref**	Type 1
Plot Address	Type 1	**SAP Version**	10.2

SAP Rating	84 B	**DER**	3.85	**TER**	12.10
Environmental	97 A	**% DER < TER**			68.18
CO_2 Emissions (t/year)	0.31	**DFEE**	42.33	**TFEE**	42.57
Compliance Check	See BREL	**% DFEE < TFEE**			0.55
% DPER < TPER	36.49	**DPER**	40.16	**TPER**	63.24

Assessor Details	Mr. Matthew Fitzpatrick	**Assessor ID**	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	1.00 m	45.09 m²	2.39 m
1st Storey:	1.00 m	45.09 m²	2.61 m

8.0 Living Area 16.96 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	139.08	118.42	0.00	None	20.66	Enter Gross Area

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud Partitions	Plasterboard on timber frame	9.00	128.50
Block Partitions	Dense block, plasterboard on dabs	75.00	55.72

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	45.09	45.09	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	45.09

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	45.09

11.2 Internal Floors

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

Internal Floor 1	+1	Plasterboard ceiling, carpeted chipboard floor		18.00	45.09

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Doors	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Door	Doors	External Wall 1	North	2.15	
W1	Windows	External Wall 1	North	7.41	
W2	Windows	External Wall 1	East	6.48	
W3	Windows	External Wall 1	West	3.30	
W4	Windows	External Wall 1	South	1.32	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	15.56	0.05	0.05	HiTherm	No
E3 Sill	Non Gov Approved Schemes	10.86	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	31.80	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	27.27	0.05	0.05	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	16.00	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	11.28	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	20.40	0.04	0.04	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	27.27	0.00	0.00	RCD	No

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	500755
Duct Type	Rigid
Wet Rooms	5

19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

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

21.0 Fixed Cooling System	No

Summary for Input Data

22.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	m³/(h.m²) @ 50 Pa
Test Method	Blower Door	

22.0 Lighting

No Fixed Lighting	No				
	Name	**Efficacy**	**Power**	**Capacity**	**Count**
	Lighting 1	75.00	10.00	750.00	10

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	104432	
Fuel Type	Electricity	
Model Name	aroTHERM plus 7kW + AI	
Manufacturer	Vaillant Group UK Ltd	
Controls SAP Code	2207	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	45.00	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	
28.0 Water Heating		
Water Heating	Main Heating 1	
SAP Code	901	
Flue Gas Heat Recovery System	No	
Waste Water Heat Recovery Instantaneous System 1	No	
Waste Water Heat Recovery Instantaneous System 2	No	
Waste Water Heat Recovery Storage System	No	
Solar Panel	No	
Water use <= 125 litres/person/day	Yes	
Cold Water Source	From mains	
Bath Count	1	
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	8.00		No	
Shower 2	Combi boiler or unvented hot water system	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	200.00	L
Loss	1.20	kWh/day
Pipes insulation	Fully insulated primary pipework	

Summary for Input Data

31.0 Thermal Store	None
34.0 Small-scale Hydro	None

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Plot Reference	Type 2	Issued on Date	09/02/2026
Assessment Reference	001	Plot Type Ref	Type 2
Plot Address	Type 2	SAP Version	10.2

SAP Rating	84 B	DER	3.76	TER	11.68
Environmental	97 A	% DER < TER			67.81
CO_2 Emissions (t/year)	0.32	DFEE	37.23	TFEE	41.98
Compliance Check	See BREL	% DFEE < TFEE			11.31
% DPER < TPER	35.83	DPER	39.15	TPER	61.01

Assessor Details	Mr. Matthew Fitzpatrick	Assessor ID	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	1.00 m	48.03 m²	2.39 m
1st Storey:	1.00 m	48.03 m²	2.61 m

8.0 Living Area 15.39 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18	60.00	156.29	126.00	0.00	None	30.29	Enter Gross Area

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud Partitions	Plasterboard on timber frame	9.00	172.75
Block Partitions	Dense block, plasterboard on dabs	75.00	23.09

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	48.03	48.03	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	48.03

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	48.03

11.2 Internal Floors

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

Internal Floor 1	+1	Plasterboard ceiling, carpeted chipboard floor		18.00	48.03

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Doors	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.44			1.20

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Door	Doors	External Wall 1	North	2.02	
W1	Windows	External Wall 1	North	9.24	
W2	Windows	External Wall 1	East	4.10	
W3	Windows	External Wall 1	South	12.90	
Rear Door	Doors	External Wall 1	South	2.03	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges	

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	20.47	0.05	0.05	HiTherm	No
E3 Sill	Non Gov Approved Schemes	13.79	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	48.90	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	31.29	0.05	0.05	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	15.52	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	15.78	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	29.97	0.04	0.04	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	31.29	0.00	0.00	RCD	No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	9.99	-0.10	-0.10	RCD	No

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	No
Mechanical Ventilation data Type	Database
Type	Mechanical extract ventilation - decentralised
MV Reference Number	500755
Duct Type	Rigid
Wet Rooms	5

19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

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

Summary for Input Data

21.0 Fixed Cooling System	No	
22.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	m³/(h.m²) @ 50 Pa
Test Method	Blower Door	

22.0 Lighting

No Fixed Lighting	No				
	Name	**Efficacy**	**Power**	**Capacity**	**Count**
	Lighting 1	75.00	10.00	750.00	10

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	104431	
Fuel Type	Electricity	
Model Name	aroTHERM plus 7kW + AI	
Manufacturer	Vaillant Group UK Ltd	
Controls SAP Code	2207	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	
28.0 Water Heating		
Water Heating	Main Heating 1	
SAP Code	901	
Flue Gas Heat Recovery System	No	
Waste Water Heat Recovery Instantaneous System 1	No	
Waste Water Heat Recovery Instantaneous System 2	No	
Waste Water Heat Recovery Storage System	No	
Solar Panel	No	
Water use <= 125 litres/person/day	Yes	
Cold Water Source	From mains	
Bath Count	1	
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	8.00		No	
Shower 2	Combi boiler or unvented hot water system	8.00		No	
Shower 3	Combi boiler or unvented hot water system	8.00		No	
Shower 3	Combi boiler or unvented hot water system	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	200.00	L

Summary for Input Data

Loss	1.20	kWh/day
Pipes insulation	Fully insulated primary pipework	
31.0 Thermal Store	None	
34.0 Small-scale Hydro	None	

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Plot Reference	Type 3	**Issued on Date**	09/02/2026
Assessment Reference	001	**Plot Type Ref**	Type 3
Plot Address	Type 3	**SAP Version**	10.2

SAP Rating	83 B	**DER**	3.88	**TER**	11.04
Environmental	97 A	**% DER < TER**			64.86
CO_2 Emissions (t/year)	0.34	**DFEE**	39.07	**TFEE**	39.49
Compliance Check	See BREL	**% DFEE < TFEE**			1.08
% DPER < TPER	29.72	**DPER**	40.47	**TPER**	57.59

Assessor Details	Mr. Matthew Fitzpatrick	**Assessor ID**	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	1.00 m	50.99 m²	2.39 m
1st Storey:	1.00 m	45.58 m²	2.61 m

8.0 Living Area 12.60 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
Masonary Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	145.79	124.29	0.00	None	21.50	Enter Gross Area

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Block Partition	Dense block, plasterboard on dabs	75.00	21.96
Stud Partition	Plasterboard on timber frame	9.00	184.73

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	45.58	45.58	None	0.00	Enter Gross Area	0.00
Low Level Roof	External Slope Roof	Plasterboard, insulated slope	0.15	9.00	5.41	5.41	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	45.58

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	50.99

11.2 Internal Floors

Summary for Input Data

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	18.00	45.58

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
1	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30
2	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30
3	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30
Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
1	1	Masonary Wall	North	6.41	
2	2	Masonary Wall	East	3.67	
3	3	Masonary Wall	South	9.29	
Front Door	Front Door	Masonary Wall	North	2.13	

14.0 Conservatory	None	
15.0 Draught Proofing	0	%
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	14.79	0.05	0.05		No
E3 Sill	Non Gov Approved Schemes	10.44	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	33.60	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	31.05	0.05	0.05	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	27.49	0.00	0.00	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	14.30	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	19.82	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	12.38	0.04	0.04	RCD	No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	2.39	-0.10	-0.10	RCD	No
E18 Party wall between dwellings	Non Gov Approved Schemes	9.99	0.05	0.05	RCD	No

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	500755
Configuration	500755
Duct Type	Rigid
Wet Rooms	4

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.15	In Room Fan Kitchen	1
0.15	In Room Fan Other Wet Room	3

20.0 Fans, Open Fireplaces, Flues

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

Summary for Input Data

elmhurst energy

21.0 Fixed Cooling System	No	
22.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	m³/(h.m²) @ 50 Pa
Test Method	Blower Door	
22.0 Lighting		
No Fixed Lighting	No	

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	15

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	104431	
Fuel Type	Electricity	
Model Name	aroTHERM plus 7kW + AI	
Manufacturer	Vaillant Group UK Ltd	
Controls SAP Code	2207	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	
28.0 Water Heating		
Water Heating	Main Heating 1	
SAP Code	901	
Flue Gas Heat Recovery System	No	
Waste Water Heat Recovery Instantaneous System 1	No	
Waste Water Heat Recovery Instantaneous System 2	No	
Waste Water Heat Recovery Storage System	No	
Solar Panel	No	
Water use <= 125 litres/person/day	Yes	
Cold Water Source	From mains	
Bath Count	1	
Immersion Only Heating Hot Water	No	

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Shower	Combi boiler or unvented hot water system	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	250.00	L
Loss	1.40	kWh/day

Summary for Input Data

Pipes insulation	Fully insulated primary pipework
31.0 Thermal Store	None
34.0 Small-scale Hydro	None

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Plot Reference	Type 4	Issued on Date	09/02/2026
Assessment Reference	001	Plot Type Ref	Type 4
Plot Address	Type 4	SAP Version	10.2

SAP Rating	83 B	DER	3.82	TER	10.50
Environmental	96 A	% DER < TER			63.62
CO_2 Emissions (t/year)	0.38	DFEE	38.92	TFEE	39.74
Compliance Check	See BREL	% DFEE < TFEE			2.07
% DPER < TPER	27.48	DPER	39.72	TPER	54.78

Assessor Details	Mr. Matthew Fitzpatrick	Assessor ID	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	1.00 m	55.27 m²	2.39 m
1st Storey:	1.00 m	55.27 m²	2.61 m

8.0 Living Area 16.43 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
Masonary Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	152.56	126.36	0.00	None	26.20	Enter Gross Area

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Block Partition	Dense block, plasterboard on dabs	75.00	34.13
Stud Partition	Plasterboard on timber frame	9.00	174.16

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	55.27	55.27	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	55.27

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	55.27

11.2 Internal Floors

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

Summary for Input Data

elmhurst energy

Internal Floor	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor		18.00	55.27

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30
Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
1	Windows	Masonary Wall	North	10.72	
2	Windows	Masonary Wall	East	2.75	
3	Windows	Masonary Wall	West	0.72	
4	Windows	Masonary Wall	South	9.88	
Front Door	Front Door	Masonary Wall	North	2.13	

14.0 Conservatory	None	
15.0 Draught Proofing	0	%
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	16.48	0.05	0.05		No
E3 Sill	Non Gov Approved Schemes	9.58	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	39.70	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	31.22	0.05	0.05	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	29.93	0.00	0.00	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	17.76	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	12.16	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	24.75	0.04	0.04	RCD	No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	4.77	-0.10	-0.10	RCD	No

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	500755
Configuration	500755
Duct Type	Rigid
Wet Rooms	5

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.15	In Room Fan Kitchen	1
0.15	In Room Fan Other Wet Room	4

20.0 Fans, Open Fireplaces, Flues

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

21.0 Fixed Cooling System	No
22.0 Pressure Testing	Yes

Summary for Input Data

elmhurst energy

Designed AP_{50}	4.00	$m^3/(h.m^2)$ @ 50 Pa
Test Method	Blower Door	

22.0 Lighting

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

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	104416	
Fuel Type	Electricity	
Model Name	aroTHERM plus 5kW + AI	
Manufacturer	Vaillant Group UK Ltd	
Controls SAP Code	2207	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	45.00	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	
28.0 Water Heating		
Water Heating	Main Heating 1	
SAP Code	901	
Flue Gas Heat Recovery System	No	
Waste Water Heat Recovery Instantaneous System 1	No	
Waste Water Heat Recovery Instantaneous System 2	No	
Waste Water Heat Recovery Storage System	No	
Solar Panel	No	
Water use <= 125 litres/person/day	Yes	
Cold Water Source	From mains	
Bath Count	1	
Immersion Only Heating Hot Water	No	

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
1	Combi boiler or unvented hot water system	8.00		No	
2	Combi boiler or unvented hot water system	8.00		No	
3	Combi boiler or unvented hot water system	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	200.00	L
Loss	1.20	kWh/day
Pipes insulation	Fully insulated primary pipework	
31.0 Thermal Store	None	

Summary for Input Data

34.0 Small-scale Hydro	None

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Plot Reference	Type 5	Issued on Date	09/02/2026
Assessment Reference	001	Plot Type Ref	Type 5
Plot Address	Type 5	SAP Version	10.2

SAP Rating	84 B	DER	3.52	TER	10.09
Environmental	97 A	% DER < TER			65.11
CO_2 Emissions (t/year)	0.37	DFEE	37.80	TFEE	38.77
Compliance Check	See BREL	% DFEE < TFEE			2.48
% DPER < TPER	30.41	DPER	36.63	TPER	52.64

Assessor Details	Mr. Matthew Fitzpatrick	Assessor ID	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	1.00 m	59.13 m²	2.39 m
1st Storey:	1.00 m	59.13 m²	2.61 m

8.0 Living Area 22.11 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
Masonary Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	162.22	134.61	0.00	None	27.61	Enter Gross Area

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Block Partition	Dense block, plasterboard on dabs	75.00	69.99
Stud Partition	Plasterboard on timber frame	9.00	150.22

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	59.13	59.13	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	59.13

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	59.13

11.2 Internal Floors

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

Internal Floor	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor		18.00	59.13

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
1	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30
2	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30
Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
1	1	Masonary Wall	North	10.69	
2	2	Masonary Wall	South	14.94	
Front Door	Front Door	Masonary Wall	North	1.98	

14.0 Conservatory	None	
15.0 Draught Proofing	0	%
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	17.59	0.05	0.05		No
E3 Sill	Non Gov Approved Schemes	10.74	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	40.20	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	32.46	0.05	0.05	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	32.43	0.00	0.00	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	17.08	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	15.36	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	25.00	0.04	0.04	RCD	No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	5.00	-0.10	-0.10	RCD	No

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	500755
Configuration	500755
Duct Type	Rigid
Wet Rooms	4

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.15	In Room Fan Kitchen	1
0.15	In Room Fan Other Wet Room	3

20.0 Fans, Open Fireplaces, Flues

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

21.0 Fixed Cooling System	No
22.0 Pressure Testing	Yes

Summary for Input Data

elmhurst energy

Designed AP_{50}	4.00	$m^3/(h.m^2)$ @ 50 Pa
Test Method	Blower Door	

22.0 Lighting

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

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	104431	
Fuel Type	Electricity	
Model Name	aroTHERM plus 7kW + AI	
Manufacturer	Vaillant Group UK Ltd	
Controls SAP Code	2207	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	

28.0 Water Heating

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

28.1 Showers

Description	**Shower Type**	**Flow Rate [l/min]**	**Rated Power [kW]**	**Connected**	**Connected To**
Shower	Combi boiler or unvented hot water system	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	250.00	L
Loss	1.40	kWh/day
Pipes insulation	Fully insulated primary pipework	
31.0 Thermal Store	None	

Summary for Input Data

34.0 Small-scale Hydro None

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Plot Reference	Type 6	**Issued on Date**	09/02/2026
Assessment Reference	001	**Plot Type Ref**	Type 6
Plot Address	Type 6	**SAP Version**	10.2

SAP Rating	84 B	**DER**	3.55	**TER**	9.86
Environmental	97 A	**% DER < TER**			64.00
CO_2 Emissions (t/year)	0.38	**DFEE**	36.59	**TFEE**	37.46
Compliance Check	See BREL	**% DFEE < TFEE**			2.33
% DPER < TPER	28.11	**DPER**	37.00	**TPER**	51.46

Assessor Details	Mr. Matthew Fitzpatrick	**Assessor ID**	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	1.00 m	59.86 m²	2.39 m
1st Storey:	1.00 m	59.86 m²	2.61 m

8.0 Living Area 16.08 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	157.70	137.86	0.00	None	19.84	Enter Gross Area

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud Partitions	Plasterboard on timber frame	9.00	200.44
Block Partitions	Dense block, plasterboard on dabs	75.00	53.75

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	59.86	59.86	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	59.86

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	59.86

11.2 Internal Floors

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

Internal Floor 1	+1	Plasterboard ceiling, carpeted chipboard floor		18.00	59.86

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Doors	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.00
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Door	Doors	External Wall 1	North	2.15	
W1	Windows	External Wall 1	North	6.97	
W2	Windows	External Wall 1	East	0.72	
W3	Windows	External Wall 1	West	0.72	
W4	Windows	External Wall 1	South	9.28	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	14.06	0.05	0.05	HiTherm	No
E3 Sill	Non Gov Approved Schemes	10.67	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	29.25	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	31.50	0.05	0.05	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	12.85	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	18.69	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	19.98	0.04	0.04	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	31.54	0.00	0.00	RCD	No

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	No
Mechanical Ventilation data Type	Database
Type	Mechanical extract ventilation - decentralised
MV Reference Number	500755
Duct Type	Rigid
Wet Rooms	5

19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

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

21.0 Fixed Cooling System	No

Summary for Input Data

elmhurst energy

22.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	m³/(h.m²) @ 50 Pa
Test Method	Blower Door	

22.0 Lighting

No Fixed Lighting	No

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	10

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	104431	
Fuel Type	Electricity	
Model Name	aroTHERM plus 7kW + AI	
Manufacturer	Vaillant Group UK Ltd	
Controls SAP Code	2207	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	
28.0 Water Heating		
Water Heating	Main Heating 1	
SAP Code	901	
Flue Gas Heat Recovery System	No	
Waste Water Heat Recovery Instantaneous System 1	No	
Waste Water Heat Recovery Instantaneous System 2	No	
Waste Water Heat Recovery Storage System	No	
Solar Panel	No	
Water use <= 125 litres/person/day	Yes	
Cold Water Source	From mains	
Bath Count	2	
Immersion Only Heating Hot Water	No	

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Shower 1	Combi boiler or unvented hot water system	8.00		No	
Shower 2	Combi boiler or unvented hot water system	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	250.00	L
Loss	1.40	kWh/day
Pipes insulation	Fully insulated primary pipework	

Summary for Input Data

31.0 Thermal Store	None
34.0 Small-scale Hydro	None

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Plot Reference	Type 7	**Issued on Date**	09/02/2026
Assessment Reference	001	**Plot Type Ref**	Type 7
Plot Address	Type 7	**SAP Version**	10.2

SAP Rating	84 B	**DER**	3.40	**TER**	10.33
Environmental	97 A	**% DER < TER**			67.09
CO_2 Emissions (t/year)	0.38	**DFEE**	40.70	**TFEE**	41.86
Compliance Check	See BREL	**% DFEE < TFEE**			2.75
% DPER < TPER	34.59	**DPER**	35.32	**TPER**	54.00

Assessor Details	Mr. Matthew Fitzpatrick	**Assessor ID**	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	1.00 m	63.01 m²	2.38 m
1st Storey:	1.00 m	60.97 m²	2.61 m

8.0 Living Area 22.24 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
Masonary Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	79.36	59.32	0.00	None	20.04	Enter Gross Area
Tile Hanging Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	82.83	72.40	0.00	None	10.43	Enter Gross Area

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud Partitions	Plasterboard on timber frame	9.00	174.61
Block Partitions	Dense block, plasterboard on dabs	75.00	62.27

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	60.97	60.97	None	0.00	Enter Gross Area	0.00
Bay Roof	External Flat Roof	Plasterboard, insulated flat roof	0.11	9.00	2.09	2.09	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	60.97

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Suspended Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	63.01

Summary for Input Data

elmhurst energy

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	18.00	60.97

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
1	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30
2	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30
3	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30
4	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30
5	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30
6	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30
7	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30
8	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30
Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
1	1	Masonary Wall	North	6.44	
2	2	Masonary Wall	East	3.00	
3	3	Masonary Wall	West	5.73	
4	4	Masonary Wall	South	3.09	
5	5	Tile Hanging Wall	North	4.43	
6	6	Tile Hanging Wall	East	3.00	
7	7	Tile Hanging Wall	West	1.50	
8	8	Tile Hanging Wall	South	1.50	
Front Door	Front Door	Masonary Wall	North	1.78	

14.0 Conservatory	None	
15.0 Draught Proofing	0	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	21.74	0.05	0.05	HiTherm	No
E3 Sill	Non Gov Approved Schemes	17.21	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	60.00	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	33.27	0.05	0.05	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	27.50	0.00	0.00	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	18.29	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	17.68	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	24.75	0.04	0.04	RCD	No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	4.77	-0.10	-0.10	RCD	No

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	500755
Configuration	500755
Duct Type	Rigid
Wet Rooms	5

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.15	In Room Fan Kitchen	1
0.15	In Room Fan Other Wet Room	4

20.0 Fans, Open Fireplaces, Flues

Summary for Input Data

elmhurst energy

Number of open chimneys	0	
Number of open flues	0	
Number of chimneys/flues attached to closed fire	0	
Number of flues attached to solid fuel boiler	0	
Number of flues attached to other heater	0	
Number of blocked chimneys	0	
Number of intermittent extract fans	0	
Number of passive vents	0	
Number of flueless gas fires	0	
21.0 Fixed Cooling System	No	
22.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	$m^3/(h.m^2)$ @ 50 Pa
Test Method	Blower Door	

22.0 Lighting

No Fixed Lighting: No

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	25

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	104432	
Fuel Type	Electricity	
Model Name	aroTHERM plus 7kW + AI	
Manufacturer	Vaillant Group UK Ltd	
Controls SAP Code	2207	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	45.00	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	
28.0 Water Heating		
Water Heating	Main Heating 1	
SAP Code	901	
Flue Gas Heat Recovery System	No	
Waste Water Heat Recovery Instantaneous System 1	No	
Waste Water Heat Recovery Instantaneous System 2	No	
Waste Water Heat Recovery Storage System	No	
Solar Panel	No	
Water use <= 125 litres/person/day	Yes	
Cold Water Source	From mains	
Bath Count	1	
Immersion Only Heating Hot Water	No	

28.1 Showers

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

2	Combi boiler or unvented hot water system	8.00	No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	200.00	L
Loss	1.20	kWh/day
Pipes insulation	Fully insulated primary pipework	
31.0 Thermal Store	None	
34.0 Small-scale Hydro	None	

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

Plot Reference	Type 8	**Issued on Date**	09/02/2026
Assessment Reference	001	**Plot Type Ref**	Type 8
Plot Address	Type 8	**SAP Version**	10.2

SAP Rating	85 B	**DER**	3.56	**TER**	9.34
Environmental	96 A	**% DER < TER**			61.88
CO_2 Emissions (t/year)	0.44	**DFEE**	37.56	**TFEE**	38.20
Compliance Check	See BREL	**% DFEE < TFEE**			1.69
% DPER < TPER	24.13	**DPER**	37.03	**TPER**	48.81

Assessor Details	Mr. Matthew Fitzpatrick	**Assessor ID**	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	1.00 m	68.90 m²	2.38 m
1st Storey:	1.00 m	68.90 m²	2.61 m

8.0 Living Area	18.37	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
Brick	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	171.96	147.72	0.00	None	24.24	Enter Gross Area

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud Partitions	Plasterboard on timber frame	9.00	203.33
Block Partitions	Dense block, plasterboard on dabs	75.00	61.23

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	68.90	68.90	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	68.90

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Suspended Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	68.90

11.2 Internal Floors

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

Internal Floor	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor		18.00	68.90

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30
Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30
Rear Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
1	Windows	Brick	North	9.58	
2	Windows	Brick	South	3.71	
3	Windows	Brick	South	6.88	
Front Door	Front Door	Brick	North	2.04	
Rear Door	Rear Door	Brick	West	2.03	

14.0 Conservatory	None	
15.0 Draught Proofing	0	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	16.61	0.05	0.05	HiTherm	No
E3 Sill	Non Gov Approved Schemes	11.79	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	38.10	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	34.40	0.05	0.05	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	34.45	0.00	0.00	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	15.31	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	19.14	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	24.98	0.04	0.04	RCD	No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	5.00	-0.10	-0.10	RCD	No

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	500755
Configuration	500755
Duct Type	Rigid
Wet Rooms	5

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.15	In Room Fan Kitchen	1
0.15	In Room Fan Other Wet Room	4

20.0 Fans, Open Fireplaces, Flues

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

21.0 Fixed Cooling System	No
22.0 Pressure Testing	Yes

Summary for Input Data

elmhurst energy

Designed AP_{50}	4.00	$m^3/(h.m^2)$ @ 50 Pa
Test Method	Blower Door	

22.0 Lighting

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

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	104416	
Fuel Type	Electricity	
Model Name	aroTHERM plus 5kW + AI	
Manufacturer	Vaillant Group UK Ltd	
Controls SAP Code	2207	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	45.00	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	

28.0 Water Heating

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

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
1	Combi boiler or unvented hot water system	8.00		No	
2	Combi boiler or unvented hot water system	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	200.00	L
Loss	1.20	kWh/day
Pipes insulation	Fully insulated primary pipework	
31.0 Thermal Store	None	

Summary for Input Data

34.0 Small-scale Hydro None

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Plot Reference	Type 9	Issued on Date	09/02/2026
Assessment Reference	001	Plot Type Ref	Type 9
Plot Address	Type 9	SAP Version	10.2

SAP Rating	84 B	DER	3.43	TER	9.30
Environmental	97 A	% DER < TER			63.12
CO_2 Emissions (t/year)	0.43	DFEE	37.46	TFEE	37.97
Compliance Check	See BREL	% DFEE < TFEE			1.34
% DPER < TPER	26.63	DPER	35.67	TPER	48.61

Assessor Details	Mr. Matthew Fitzpatrick	Assessor ID	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	33.34 m	69.42 m²	2.39 m
1st Storey:	33.34 m	69.42 m²	2.61 m

8.0 Living Area 17.00 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	174.03	148.36	0.00	None	25.67	Enter Gross Area

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud Partitions	Plasterboard on timber frame	9.00	225.89
Block Partitions	Dense block, plasterboard on dabs	75.00	76.70

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	69.42	69.42	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	69.42

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	69.42

11.2 Internal Floors

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

Internal Floor 1	+1	Plasterboard ceiling, carpeted chipboard floor		18.00	69.42

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Doors	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Door	Doors	External Wall 1	North	2.02	
W1	Windows	External Wall 1	North	9.26	
W2	Windows	External Wall 1	South	11.76	
W3	Windows	External Wall 1	West	0.66	
Utility Door	Doors	External Wall 1	East	1.97	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges	

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	15.52	0.05	0.05	HiTherm	No
E3 Sill	Non Gov Approved Schemes	12.00	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	36.00	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	33.34	0.05	0.05	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	17.12	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	16.22	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	20.00	0.04	0.04	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	33.34	0.00	0.00	RCD	No

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	No
Mechanical Ventilation data Type	Database
Type	Mechanical extract ventilation - decentralised
MV Reference Number	500755
Duct Type	Rigid
Wet Rooms	6

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.15	In Room Fan Kitchen	1
0.15	In Room Fan Other Wet Room	5
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other Wet Room	0
0.11	Through Wall Fan Kitchen	0
0.14	Through Wall Fan Other Wet Room	0

20.0 Fans, Open Fireplaces, Flues

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

21.0 Fixed Cooling System	No

Summary for Input Data

elmhurst energy

22.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	m³/(h.m²) @ 50 Pa
Test Method	Blower Door	

22.0 Lighting

No Fixed Lighting	No

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	10

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	104431	
Fuel Type	Electricity	
Model Name	aroTHERM plus 7kW + AI	
Manufacturer	Vaillant Group UK Ltd	
Controls SAP Code	2207	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	

28.0 Water Heating

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

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Shower 2	Combi boiler or unvented hot water system	8.00		No	
Shower 1	Combi boiler or unvented hot water system	8.00		No	
Shower 3	Combi boiler or unvented hot water system	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	250.00	L
Loss	1.40	kWh/day
Pipes insulation	Fully insulated primary pipework	

Summary for Input Data

31.0 Thermal Store	None
34.0 Small-scale Hydro	None

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Plot Reference	Type 10	**Issued on Date**	09/02/2026
Assessment Reference	001	**Plot Type Ref**	Type 10
Plot Address	Type 10	**SAP Version**	10.2

SAP Rating	84 B	**DER**	3.26	**TER**	8.89
Environmental	97 A	**% DER < TER**			63.33
CO_2 Emissions (t/year)	0.45	**DFEE**	37.46	**TFEE**	38.51
Compliance Check	See BREL	**% DFEE < TFEE**			2.71
% DPER < TPER	27.15	**DPER**	33.87	**TPER**	46.49

Assessor Details	Mr. Matthew Fitzpatrick	**Assessor ID**	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	1.00 m	77.21 m²	2.39 m
1st Storey:	1.00 m	77.21 m²	2.61 m

8.0 Living Area 21.67 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	189.95	156.12	0.00	None	33.83	Enter Gross Area

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud Partitions	Plasterboard on timber frame	9.00	210.38
Block Partitions	Dense block, plasterboard on dabs	75.00	89.29

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	77.21	77.21	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	77.21

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	77.21

11.2 Internal Floors

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

Internal Floor 1	+1	Plasterboard ceiling, carpeted chipboard floor		18.00	77.21

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Doors	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Door	Doors	External Wall 1	North	2.13	
W1	Windows	External Wall 1	North	11.49	
W2	Windows	External Wall 1	East	1.68	
W3	Windows	External Wall 1	West	2.87	
W4	Windows	External Wall 1	South	15.66	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	22.42	0.05	0.05	HiTherm	No
E3 Sill	Non Gov Approved Schemes	14.96	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	51.30	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	38.03	0.05	0.05	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	19.93	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	18.10	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	24.98	0.04	0.04	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	38.03	0.00	0.00	RCD	No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	5.00	-0.10	-0.10	RCD	No

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	No
Mechanical Ventilation data Type	Database
Type	Mechanical extract ventilation - decentralised
MV Reference Number	500755
Duct Type	Rigid
Wet Rooms	6

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.15	In Room Fan Kitchen	1
0.15	In Room Fan Other Wet Room	5
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other Wet Room	0
0.11	Through Wall Fan Kitchen	0
0.14	Through Wall Fan Other Wet Room	0

20.0 Fans, Open Fireplaces, Flues

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

Summary for Input Data

21.0 Fixed Cooling System	No	
22.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	m³/(h.m²) @ 50 Pa
Test Method	Blower Door	
22.0 Lighting		
No Fixed Lighting	No	

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	10

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	104431	
Fuel Type	Electricity	
Model Name	aroTHERM plus 7kW + AI	
Manufacturer	Vaillant Group UK Ltd	
Controls SAP Code	2207	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	
28.0 Water Heating		
Water Heating	Main Heating 1	
SAP Code	901	
Flue Gas Heat Recovery System	No	
Waste Water Heat Recovery Instantaneous System 1	No	
Waste Water Heat Recovery Instantaneous System 2	No	
Waste Water Heat Recovery Storage System	No	
Solar Panel	No	
Water use <= 125 litres/person/day	Yes	
Cold Water Source	From mains	
Bath Count	1	
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	8.00		No	
Shower 2	Combi boiler or unvented hot water system	8.00		No	
Shower 3	Combi boiler or unvented hot water system	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	250.00	L
Loss	1.40	kWh/day

Summary for Input Data

Pipes insulation	Fully insulated primary pipework
31.0 Thermal Store	None
34.0 Small-scale Hydro	None

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Plot Reference	Type 11	**Issued on Date**	09/02/2026
Assessment Reference	001	**Plot Type Ref**	Type 11
Plot Address	Type 11	**SAP Version**	10.2

SAP Rating	84 B	**DER**	3.15	**TER**	8.45
Environmental	97 A	**% DER < TER**			62.72
CO_2 Emissions (t/year)	0.49	**DFEE**	37.07	**TFEE**	38.04
Compliance Check	See BREL	**% DFEE < TFEE**			2.55
% DPER < TPER	26.30	**DPER**	32.64	**TPER**	44.29

Assessor Details	Mr. Matthew Fitzpatrick	**Assessor ID**	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	1.00 m	86.40 m²	2.39 m
1st Storey:	1.00 m	88.33 m²	2.61 m

8.0 Living Area 17.77 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	190.31	156.42	0.00	None	33.89	Enter Gross Area

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud Partitions	Plasterboard on timber frame	9.00	215.37
Block Partitions	Dense block, plasterboard on dabs	75.00	110.85

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	88.33	88.33	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	88.33

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	86.40
Exposed Floor	Exposed Floor - Timber	+1	Timber exposed floor, insulation between joists	0.15	None	0.00	20.00	1.97

11.2 Internal Floors

Summary for Input Data

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1	+1	Plasterboard ceiling, carpeted chipboard floor	18.00	88.33

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Doors	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Door	Doors	External Wall 1	North	2.02	
W1	Windows	External Wall 1	North	12.58	
W2	Windows	External Wall 1	East	0.67	
W3	Windows	External Wall 1	West	0.67	
W4	Windows	External Wall 1	South	15.98	
Utility Door	Doors	External Wall 1	South	1.97	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	23.12	0.05	0.05	HiTherm	No
E3 Sill	Non Gov Approved Schemes	16.17	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	46.80	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	37.40	0.05	0.05	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	19.15	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	19.62	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	25.20	0.04	0.04	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	34.47	0.00	0.00	RCD	No
E20 Exposed floor (normal)	Table K1 - Default	4.27	0.32	0.32		No
E21 Exposed floor (inverted)	Table K1 - Default	2.93	0.32	0.32		No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	5.22	-0.10	-0.10	RCD	No

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	No
Mechanical Ventilation data Type	Database
Type	Mechanical extract ventilation - decentralised
MV Reference Number	500755
Duct Type	Rigid
Wet Rooms	6

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.15	In Room Fan Kitchen	1
0.15	In Room Fan Other Wet Room	5
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other Wet Room	0
0.11	Through Wall Fan Kitchen	0
0.14	Through Wall Fan Other Wet Room	0

20.0 Fans, Open Fireplaces, Flues

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

Summary for Input Data

Number of passive vents	0	
Number of flueless gas fires	0	
21.0 Fixed Cooling System	No	
22.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	m³/(h.m²) @ 50 Pa
Test Method	Blower Door	
22.0 Lighting		
No Fixed Lighting	No	

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	10

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	104431	
Fuel Type	Electricity	
Model Name	aroTHERM plus 7kW + AI	
Manufacturer	Vaillant Group UK Ltd	
Controls SAP Code	2207	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	
28.0 Water Heating		
Water Heating	Main Heating 1	
SAP Code	901	
Flue Gas Heat Recovery System	No	
Waste Water Heat Recovery Instantaneous System 1	No	
Waste Water Heat Recovery Instantaneous System 2	No	
Waste Water Heat Recovery Storage System	No	
Solar Panel	No	
Water use <= 125 litres/person/day	Yes	
Cold Water Source	From mains	
Bath Count	1	
Immersion Only Heating Hot Water	No	

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Shower 2	Combi boiler or unvented hot water system	8.00		No	
Shower 1	Combi boiler or unvented hot water system	8.00		No	
Shower 3	Combi boiler or unvented hot water system	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	

Summary for Input Data

Insulation Type	Measured Loss	
Cylinder Volume	250.00	L
Loss	1.40	kWh/day
Pipes insulation	Fully insulated primary pipework	

31.0 Thermal Store	None	
34.0 Small-scale Hydro	None	

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Plot Reference	Type A3	**Issued on Date**	09/02/2026
Assessment Reference	001	**Plot Type Ref**	Type A3
Plot Address	Type A3	**SAP Version**	10.2

SAP Rating	85 B	**DER**	3.81	**TER**	11.41
Environmental	97 A	**% DER < TER**			66.61
CO_2 Emissions (t/year)	0.28	**DFEE**	34.31	**TFEE**	35.45
Compliance Check	See BREL	**% DFEE < TFEE**			3.21
% DPER < TPER	33.13	**DPER**	39.96	**TPER**	59.76

Assessor Details	Mr. Matthew Fitzpatrick	**Assessor ID**	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Semi-Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	1.00 m	39.97 m²	2.39 m
1st Storey:	1.00 m	39.97 m²	2.61 m

8.0 Living Area	19.59	m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	89.58	77.80	0.00	None	11.78	Enter Gross Area

9.1 Party Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
Party Wall 1	Filled Cavity with Edge Sealing	Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill	0.00	110.00	48.89	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud Partitions	Plasterboard on timber frame	9.00	115.22
Block Partitions	Dense block, plasterboard on dabs	75.00	14.41

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	39.97	39.97	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	39.97

11.0 Heat Loss Floors

Summary for Input Data

elmhurst energy

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	39.97

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1	+1	Plasterboard ceiling, carpeted chipboard floor	18.00	39.97

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Doors	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Door	Doors	External Wall 1	North	2.15	
W1	Windows	External Wall 1	North	3.53	
W4	Windows	External Wall 1	South	3.95	
Rear Door	Doors	External Wall 1	South	2.15	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges	

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	8.28	0.05	0.05	HiTherm	No
E3 Sill	Non Gov Approved Schemes	6.24	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	20.25	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	17.91	0.05	0.05	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	8.16	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	9.79	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	9.99	0.04	0.04	RCD	No
E18 Party wall between dwellings	Non Gov Approved Schemes	9.99	0.05	0.05	RCD	No
P1 Party wall - Ground floor	Non Gov Approved Schemes	9.78	0.04	0.04	RCD	No
P2 Party wall - Intermediate floor within a dwelling	Table K1 - Default	9.79	0.00	0.07	Table K1	No
P4 Party wall - Roof (insulation at ceiling level)	Non Gov Approved Schemes	9.79	0.03	0.03	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	17.96	0.00	0.00	RCD	No

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	500755
Duct Type	Rigid
Wet Rooms	3

19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0
Number of flues attached to solid fuel boiler	0
Number of flues attached to other heater	0

Summary for Input Data

elmhurst energy

Number of blocked chimneys	0	
Number of intermittent extract fans	0	
Number of passive vents	0	
Number of flueless gas fires	0	
21.0 Fixed Cooling System	No	
22.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	$m^3/(h.m^2)$ @ 50 Pa
Test Method	Blower Door	

22.0 Lighting

No Fixed Lighting: No

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	10

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	104431	
Fuel Type	Electricity	
Model Name	aroTHERM plus 7kW + AI	
Manufacturer	Vaillant Group UK Ltd	
Controls SAP Code	2207	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	

28.0 Water Heating

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

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Showers	Combi boiler or unvented hot water system	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	

Summary for Input Data

Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	200.00	L
Loss	1.20	kWh/day
Pipes insulation	Fully insulated primary pipework	

31.0 Thermal Store	None
34.0 Small-scale Hydro	None

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Plot Reference	Type A5	**Issued on Date**	09/02/2026
Assessment Reference	001	**Plot Type Ref**	Type A5
Plot Address	Type A5	**SAP Version**	10.2

SAP Rating	84 B	**DER**	3.81	**TER**	11.10
Environmental	97 A	**% DER < TER**			65.68
CO_2 Emissions (t/year)	0.32	**DFEE**	37.14	**TFEE**	38.34
Compliance Check	See BREL	**% DFEE < TFEE**			3.13
% DPER < TPER	31.36	**DPER**	39.76	**TPER**	57.93

Assessor Details	Mr. Matthew Fitzpatrick	**Assessor ID**	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Semi-Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	1.00 m	46.85 m²	2.39 m
1st Storey:	1.00 m	46.85 m²	2.61 m

8.0 Living Area 22.57 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	96.69	76.77	0.00	None	19.92	Enter Gross Area

9.1 Party Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
Party Wall 1	Filled Cavity with Edge Sealing	Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill	0.00	110.00	48.91	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud Partitions	Plasterboard on timber frame	9.00	146.93
Block Partitions	Dense block, plasterboard on dabs	75.00	17.57

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	46.85	46.85	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	46.85

11.0 Heat Loss Floors

Summary for Input Data

elmhurst energy

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	39.97

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1	+1	Plasterboard ceiling, carpeted chipboard floor	18.00	39.97

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Doors	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Door	Doors	External Wall 1	North	2.15	
W1	Windows	External Wall 1	North	8.28	
W4	Windows	External Wall 1	East	4.07	
Rear Door	Doors	External Wall 1	South	2.15	
W3	Windows	External Wall 1	West	3.27	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges	

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	14.73	0.05	0.05	HiTherm	No
E3 Sill	Non Gov Approved Schemes	12.23	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	31.95	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	19.35	0.05	0.05	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	9.79	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	9.56	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	9.99	0.04	0.04	RCD	No
E18 Party wall between dwellings	Non Gov Approved Schemes	9.99	0.05	0.05	RCD	No
P1 Party wall - Ground floor	Non Gov Approved Schemes	9.79	0.04	0.04	RCD	No
P2 Party wall - Intermediate floor within a dwelling	Table K1 - Default	9.79	0.00	0.07	Table K1	No
P4 Party wall - Roof (insulation at ceiling level)	Non Gov Approved Schemes	9.79	0.03	0.03	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	19.35	0.00	0.00	RCD	No

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	No
Mechanical Ventilation data Type	Database
Type	Mechanical extract ventilation - decentralised
MV Reference Number	500755
Duct Type	Rigid
Wet Rooms	3

19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0
Number of flues attached to solid fuel boiler	0
Number of flues attached to other heater	0

Summary for Input Data

Number of blocked chimneys	0	
Number of intermittent extract fans	0	
Number of passive vents	0	
Number of flueless gas fires	0	
21.0 Fixed Cooling System	No	
22.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	m³/(h.m²) @ 50 Pa
Test Method	Blower Door	
22.0 Lighting		
No Fixed Lighting	No	

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	10

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	104431	
Fuel Type	Electricity	
Model Name	aroTHERM plus 7kW + AI	
Manufacturer	Vaillant Group UK Ltd	
Controls SAP Code	2207	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	
28.0 Water Heating		
Water Heating	Main Heating 1	
SAP Code	901	
Flue Gas Heat Recovery System	No	
Waste Water Heat Recovery Instantaneous System 1	No	
Waste Water Heat Recovery Instantaneous System 2	No	
Waste Water Heat Recovery Storage System	No	
Solar Panel	No	
Water use <= 125 litres/person/day	Yes	
Cold Water Source	From mains	
Bath Count	1	
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	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	

Summary for Input Data

Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	200.00	L
Loss	1.20	kWh/day
Pipes insulation	Fully insulated primary pipework	

31.0 Thermal Store	None
34.0 Small-scale Hydro	None

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Plot Reference	Type A6	**Issued on Date**	09/02/2026
Assessment Reference	001	**Plot Type Ref**	Type A6
Plot Address	Type A6	**SAP Version**	10.2

SAP Rating	84 B	**DER**	3.64	**TER**	10.48
Environmental	97 A	**% DER < TER**			65.27
CO_2 Emissions (t/year)	0.31	**DFEE**	33.52	**TFEE**	34.70
Compliance Check	See BREL	**% DFEE < TFEE**			3.40
% DPER < TPER	30.42	**DPER**	38.12	**TPER**	54.78

Assessor Details	Mr. Matthew Fitzpatrick	**Assessor ID**	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Semi-Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	1.00 m	46.73 m²	2.39 m
1st Storey:	1.00 m	46.73 m²	2.61 m

8.0 Living Area 22.55 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	96.67	82.81	0.00	None	13.86	Enter Gross Area

9.1 Party Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
Party Wall 1	Filled Cavity with Edge Sealing	Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill	0.00	110.00	48.90	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud Partitions	Plasterboard on timber frame	9.00	144.80
Block Partitions	Dense block, plasterboard on dabs	75.00	17.41

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	46.73	46.73	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	46.73

11.0 Heat Loss Floors

Summary for Input Data

elmhurst energy

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	46.73

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1	+1	Plasterboard ceiling, carpeted chipboard floor	18.00	46.73

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Doors	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Door	Doors	External Wall 1	North	2.15	
W1	Windows	External Wall 1	North	4.79	
W4	Windows	External Wall 1	South	4.77	
Rear Door	Doors	External Wall 1	South	2.15	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges	

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	10.09	0.05	0.05	HiTherm	No
E3 Sill	Non Gov Approved Schemes	8.05	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	22.65	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	19.34	0.05	0.05	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	9.57	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	9.80	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	9.99	0.04	0.04	RCD	No
E18 Party wall between dwellings	Non Gov Approved Schemes	9.99	0.05	0.05	RCD	No
P1 Party wall - Ground floor	Non Gov Approved Schemes	9.78	0.04	0.04	RCD	No
P2 Party wall - Intermediate floor within a dwelling	Table K1 - Default	9.80	0.00	0.07	Table K1	No
P4 Party wall - Roof (insulation at ceiling level)	Non Gov Approved Schemes	9.80	0.03	0.03	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	19.37	0.00	0.00	RCD	No

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	500755
Duct Type	Rigid
Wet Rooms	3

19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0
Number of flues attached to solid fuel boiler	0
Number of flues attached to other heater	0

Summary for Input Data

Number of blocked chimneys	0	
Number of intermittent extract fans	0	
Number of passive vents	0	
Number of flueless gas fires	0	
21.0 Fixed Cooling System	No	
22.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	m³/(h.m²) @ 50 Pa
Test Method	Blower Door	
22.0 Lighting		
No Fixed Lighting	No	

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	10

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	104431	
Fuel Type	Electricity	
Model Name	aroTHERM plus 7kW + AI	
Manufacturer	Vaillant Group UK Ltd	
Controls SAP Code	2207	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	
28.0 Water Heating		
Water Heating	Main Heating 1	
SAP Code	901	
Flue Gas Heat Recovery System	No	
Waste Water Heat Recovery Instantaneous System 1	No	
Waste Water Heat Recovery Instantaneous System 2	No	
Waste Water Heat Recovery Storage System	No	
Solar Panel	No	
Water use <= 125 litres/person/day	Yes	
Cold Water Source	From mains	
Bath Count	1	
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	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	

Summary for Input Data

Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	200.00	L
Loss	1.20	kWh/day
Pipes insulation	Fully insulated primary pipework	

31.0 Thermal Store	None
34.0 Small-scale Hydro	None

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Plot Reference	Type A7	**Issued on Date**	09/02/2026
Assessment Reference	001	**Plot Type Ref**	Type A7
Plot Address	Type A7	**SAP Version**	10.2

SAP Rating	85 B	**DER**	3.48	**TER**	9.94
Environmental	97 A	**% DER < TER**			64.99
CO_2 Emissions (t/year)	0.31	**DFEE**	33.02	**TFEE**	34.12
Compliance Check	See BREL	**% DFEE < TFEE**			3.22
% DPER < TPER	29.78	**DPER**	36.35	**TPER**	51.76

Assessor Details	Mr. Matthew Fitzpatrick	**Assessor ID**	7601-0001
Client	Bellway Homes Ltd (Strategic), Bellway Homes Ltd (Strategic)		

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Semi-Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	0.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	Yes	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	1.00 m	50.18 m²	2.40 m
1st Storey:	1.00 m	50.18 m²	2.61 m

8.0 Living Area 30.84 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.24	60.00	100.82	83.65	0.00	None	17.17	Enter Gross Area

9.1 Party Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
Party Wall 1	Filled Cavity with Edge Sealing	Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill	0.00	110.00	45.71	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Stud Partitions	Plasterboard on timber frame	9.00	190.37

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Cold Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.09	9.00	50.18	50.18	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	50.18

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)

Summary for Input Data

elmhurst energy

Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	50.18

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1	+1	Plasterboard ceiling, carpeted chipboard floor	18.00	50.18

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Doors	Manufacturer	Half Glazed Door	Double Low-E Soft 0.1			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.1			0.45			1.30

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Door	Doors	External Wall 1	North	2.15	
W1	Windows	External Wall 1	North	6.08	
W2	Windows	External Wall 1	East	1.42	
W3	Windows	External Wall 1	South	7.52	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted	Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	13.02	0.05	0.05	HiTherm	No
E3 Sill	Non Gov Approved Schemes	10.80	0.02	0.02	RCD	No
E4 Jamb	Non Gov Approved Schemes	29.10	0.01	0.01	RCD	No
E5 Ground floor (normal)	Non Gov Approved Schemes	20.12	0.05	0.05	RCD	No
E10 Eaves (insulation at ceiling level)	Non Gov Approved Schemes	11.00	0.05	0.05	RCD	No
E12 Gable (insulation at ceiling level)	Non Gov Approved Schemes	9.12	0.04	0.04	RCD	No
E16 Corner (normal)	Non Gov Approved Schemes	10.02	0.04	0.04	RCD	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	20.12	0.00	0.00	RCD	No
E18 Party wall between dwellings	Non Gov Approved Schemes	10.02	0.05	0.05	RCD	No

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	No
Mechanical Ventilation data Type	Database
Type	Mechanical extract ventilation - decentralised
MV Reference Number	500755
Duct Type	Rigid
Wet Rooms	3

19.1 Mechanical extract ventilation - Decentralised

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

20.0 Fans, Open Fireplaces, Flues

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

Summary for Input Data

Number of flueless gas fires	0	
21.0 Fixed Cooling System	No	
22.0 Pressure Testing	Yes	
Designed AP_{50}	4.00	$m^3/(h.m^2)$ @ 50 Pa
Test Method	Blower Door	
22.0 Lighting		
No Fixed Lighting	No	

Name	Efficacy	Power	Capacity	Count
Lighting 1	75.00	10.00	750.00	10

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	104431	
Fuel Type	Electricity	
Model Name	aroTHERM plus 7kW + AI	
Manufacturer	Vaillant Group UK Ltd	
Controls SAP Code	2207	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	
28.0 Water Heating		
Water Heating	Main Heating 1	
SAP Code	901	
Flue Gas Heat Recovery System	No	
Waste Water Heat Recovery Instantaneous System 1	No	
Waste Water Heat Recovery Instantaneous System 2	No	
Waste Water Heat Recovery Storage System	No	
Solar Panel	No	
Water use <= 125 litres/person/day	Yes	
Cold Water Source	From mains	
Bath Count	1	
Immersion Only Heating Hot Water	No	

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Showers	Combi boiler or unvented hot water system	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	200.00	L

Summary for Input Data

Loss	1.20	kWh/day
Pipes insulation	Fully insulated primary pipework	
31.0 Thermal Store	None	
34.0 Small-scale Hydro	None	

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None