PJR
BUILDING SERVICES
DESIGN ENGINEERS

Site 1 Langney Point, Martinique Way, Eastbourne

Energy Strategy Report

PJR Building Services
T: 01273 626 247
E: mail@PJRServices.co.uk

Revision Schedule

Revision No.	Date	Details of Change
Rev 00	15/12/2023	First Issue

PJR
BUILDING SERVICES
DESIGN ENGINEERS

Table of Contents

PJR
BUILDING SERVICES
DESIGN ENGINEERS

PJR
BUILDING SERVICES
DESIGN ENGINEERS

1.0 Introduction

PJR Building Services has been instructed to prepare an energy strategy for the proposed Site 1 Langney Point, Martinique Way development in Eastbourne, East Sussex. The project involves the construction of a new three block residential development to provide 137nr residential apartments over six floors. Public / social spaces for residents will be provided at ground floor level of block B, with a car parking facility provided at lower ground floor level.

As the development falls within the Eastbourne Borough Council jurisdiction, it is subject to the Eastbourne Core Strategy Local Plan. Under local planning policy the Sustainability Checklist for Major Developments should be considered. In particular, this checklist references National Planning Policy Framework (NPPF) Chapter 14: Meeting the challenge of climate change, flooding and low carbon energy. National and local policy requirements should be met by a reduction in energy use through the application of the following energy hierarchy, to be demonstrated through the submission of an energy statement:

Be lean: use less energy

Be clean: supply energy efficiently

Be green: use renewable energy

This report therefore assesses the performance of the proposed development in terms of energy efficiency measures, viability of district heating connection / on site CHP and potential specification of Low and Zero Carbon (LZC) technologies in accordance with NPPF and Eastbourne Core Strategy policy requirements. The report also address potential water use within the proposed residential apartments.

This report has been completed by George Kent, who is a registered Non-Domestic Low Carbon Energy Assessor (LCEA). George has 16 years continuous experience in energy simulation and consultancy and is not professionally connected or affiliated with any LZC technology or manufacturer. George is therefore considered to be an 'Energy Specialist'.

2.0 Planning Policy

The site is located within the town of Eastbourne and so is subject to Eastbourne Core Strategy Local Plan as well as the National Planning Policy Framework (NPPF). Under the Core Strategy Policy, Eastbourne's Sustainability Checklist for Major Developments should be followed to determine the sustainability policies that apply and to report the carbon reduction of the scheme.

Within the Sustainability Checklist it is confirmed that major development should *"seek to limit CO_2 production to the minimum possible."* Furthermore, the site should seek to achieve a 19% reduction in carbon emissions below the Part L TER baseline.

No residential development over 1,000sqm in floor area are expected to achieve BREEAM certification to a "Very Good2 standard. However, it is understood that the non-residential areas of the development do not exceed 1,000sqm floor

The design works will therefore be undertaken following the principles of the following energy hierarchy:

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

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

Be green: use renewable energy sources

The Sustainable Checklist also requires demonstration of the reduction of water use within the development. This report therefore also seeks to address this requirement.

PJR
BUILDING SERVICES
DESIGN ENGINEERS

3.0 3D Compliance Model

3.1 Geometry

A 3D model of the commercial elements of the development has been constructed within IES Virtual Environment software using the ModelIT tool. IES VE is a dynamic simulation modelling software, which has been selected and applied in accordance with CIBSE AM11. The geometry of both this model and the residential SAP assessments has been based upon the following planning issue drawings provided by Gaunt Francis:

- 23026-GFA-A-LG-DR-A-11100-P.01 – Lower Ground Floor Plan
- 23026-GFA-A-00-DR-A-11101-P.01 – Ground Floor Plan
- 23026-GFA-A-00-DR-A-11102-P.01 – First Floor Plan
- 23026-GFA-A-02-DR-A-11103-P.01 – Second Floor Plan
- 23026-GFA-A-03-DR-A-11104-P.01 – Third Floor Plan
- 23026-GFA-A-04-DR-A-11105-P.01 – Fourth Floor Plan
- 23026-GFA-A-05-DR-A-11106-P.01 – Fifth Floor Plan
- 23026-GFA-A-06-DR-A-11107-P.01 – Sixth Floor Plan
- 23026-GFA-A-ZZ-DR-A-12100-P.01 – Elevation AA – West
- 23026-GFA-A-ZZ-DR-A-12101-P.01 - Elevation AA North & Elevation AC South
- 23026-GFA-A-ZZ-DR-A-12102-P.01 – Elevation AA East

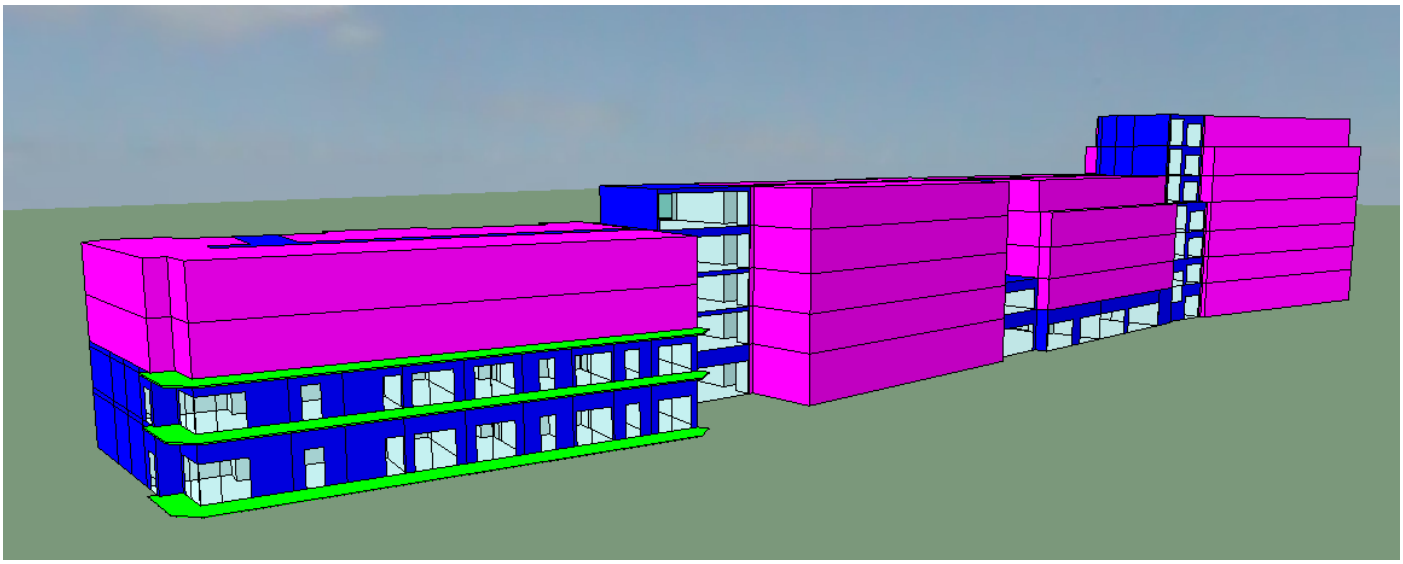

Figure 3.1 3D view of IES model from the South-East

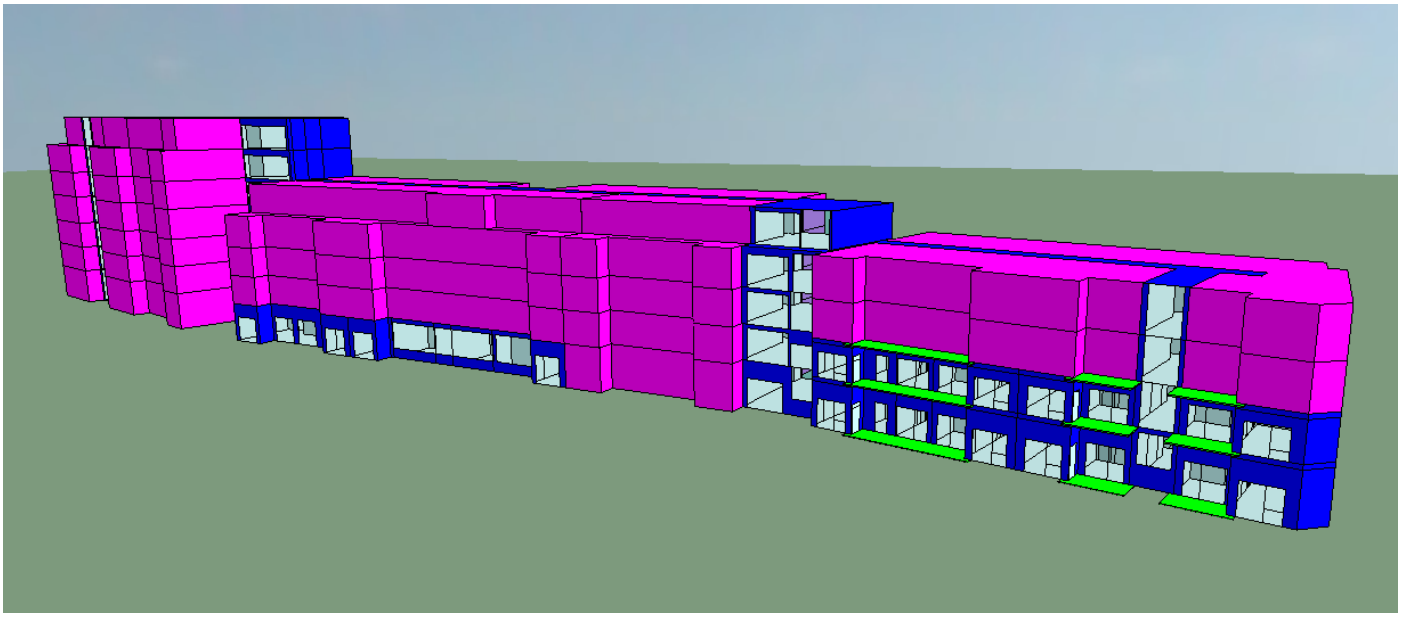

Figure 3.2 3D view of IES model from the South-West

3.2 Climate Data

To complete the energy assessment for the non-residential areas an AD Part L2 2021 assessment has been completed using the VE Compliance tool within IES Virtual Environment software package. This offers full dynamic simulation of the building using default NCM data sets. To complete this analysis a Test Reference Year (TRY) weather file must be selected and applied to the model.

The TRY is composed of 12 separate months of data, each chosen to be the most average month from the collected data. The TRY is used for energy analysis, compliance with the UK Building Regulations (Part L) and to assess winter thermal comfort. The TRY weather file used within the compliance model is the SouthamptonTRY 2016 file.

PJR
BUILDING SERVICES
DESIGN ENGINEERS

4.0 Baseline Assessment

4.1 Summary

To complete the assessment of the residential areas a total of eight apartment types were selected and an initial SAP assessment was completed upon each. The apartment types assessed were:

- Block B Ground Floor Corner – an apartment with an exposed floor and in a corner location
- Block B Ground Floor Mid-Terrace - an apartment with an exposed floor and with adjacent heated spaces on both sides
- Block B First Floor Corner – a mid-floor apartment with no exposed roof or floor and in a corner location
- Block B First Floor Mid-Terrace – a mid-floor apartment with no exposed roof or floor and with adjacent heated spaces on both sides
- Block B Third Floor Corner – a mid-floor apartment with a partially exposed roof and in a corner location
- Block B Third Floor Mid-Terrace – a mid-floor apartment with only a partially exposed roof and adjacent heated spaces on both sides
- Block C Third Floor Corner - an apartment with a fully exposed roof and in a corner location
- Block C Third Floor Mid-Terrace– an apartment with a fully exposed roof and adjacent heated spaces on both sides

These units were selected for analysis as they broadly represent the different apartment types and levels of external exposure present on the plan drawings provided.

As the SAP process reports regulated CO_2 emissions in $kgCO_2/m^2/yr$, the results for each plot type on each assessed floor were averaged based on floor area to provide an overall Target Emission rate for each assessed floor. These TERs were then applied to each floor of each block based on the most appropriate type (i.e., ground floor, mid floor, partially exposed roof or top floor). The average SAP results were then multiplied by the total floor area of each 'floor type, within each block to obtain an estimate of CO_2 emissions at each stage.

The baseline for the commercial spaces is derived from an Approved Document Part L2A 2021 compliance calculation and determining the Target Emission Rate (TER) from an SBEM (Simplified Building Energy Model) or DSM (Dynamic Simulation Model) calculation using NCM (National Calculation Methodology) approved software. The TER is the maximum permitted annual CO_2 emissions from the development that is calculated within SBEM / DSM simulation using NCM (National Calculation Methodology) approved software. In this instance a DSM model has been prepared to obtain a benchmark.

4.2 Baseline Assessment Results

Table 4.1 below shows the CO_2 breakdown of the baseline compliance analysis. The baseline annual CO_2 emissions are 1,766,902 per annum based upon the Target Emission Rates obtained from Part L 2021 software.

Floor Type	Total Area (m^2)	Average TER ($kg/m^2/yr$)	CO_2 (kg/yr)
Ground Floor	19,572	11.02	215,698
Mid Floor	60,677	16.13	978,841
Mid Floor Partial Roof	26,293	11.74	308,779
Top Floor	21,135	12.04	254,484
Commercial	3,074	2.96	9,100
Site Baseline CO_2 Totals			**1,766,902**

Table 4.1 Annual Baseline Energy Use & CO_2 Emissions

5.0 'Be Lean' Assessment

5.1 Summary

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

The 'Be Lean' fabric thermal performance is shown in table 5.1 below and is based upon information provided by the project design team.

Building Element	U-Value W/m²K	Part L 2021 W/m2K	
		Residential	Non-Residential
Ground Floor (insulated concrete slab with screed)	0.09	0.18	0.18
External Walls (Metsec frame infill to concrete structure, Metsec faced with sheathing board and built-up rainscreen cladding system of GRC and glass panels)	0.15	0.26	0.26
Roof (concrete deck warm roof)	0.10	0.16	0.18
Glazing (inc. glazed doors, g = 0.45)	1.10	1.60	1.60
Partitions (generally lightweight steel stud)	N/A	N/A	N/A
Intermediate floors (concrete slab and screed)	N/A	N/A	N/A

Table 5.1 Building Fabric Constructions

To further reduce the energy demand and associated CO_2 emissions from the development the efficiency of the building services strategy must also be considered. Within residential areas it is proposed that heating and hot will be delivered to each of the apartments from a communal Air Source Heat Pump energy centre. This communal ASHP system will circulate hot water around the building via a primary circuit, with heat interface units at each apartment then taking heat from the primary circuit to use for space heating and domestic hot water.

Due to coastal location and potential for high winds, the current ventilation strategy involves whole house mechanical ventilation with heat recovery (MVHR). This system extracts stale air from the apartments using a low fan power and passes this through a heat exchanger, where fresh supply air can reclaim up to 90% of the heat. This makes an MVHR strategy a low energy solution, whilst also ensuring that good indoor air quality is consistently maintained.

Lighting throughout will be low energy LED, with an efficacy of at least 85 lamp-lumens per circuit-watt.

The residential services strategy is summarised within table 5.2 below.

System	System Details	Delivery Method / Controls
Heating	From central ASHP, SCOP = 3.24	Under floor heating, from HIU
Ventilation	Whole house MVHR unit	Local MVHR units in ceiling voids
Hot water	As per heating	From HIU
Lighting	LED, assumed 85 lms/W	Manual control

Table 5.2 'Be Lean' stage Residential Building Services Systems & Performance Data

The non-residential areas of the development will also ultise a low energy services strategy. This strategy has been summarised within table 5.3 below and has been used to prepare the Part L 2021 analysis using dynamic simulation modelling.

System	System Details	Delivery Method / Controls	Zones
Heating / Cooling	Split VRF system with SCOP of 5.05 and SEER of 6.80	Ceiling or wall mounted FCUs	All areas
	From central ASHP, SCOP = 3.24	Underfloor heating	Residential communal corridors
Ventilation	MVHR units, SFP = 1.1 W/l.s, HR η = 80%	Local MVHR units in ceiling voids	Bar / Bistro & Private Dining
	Extract fans, SFP = 0.4 W/l.s	Local ceiling void	Staff changing and communal WCs
	Natural ventilation	Windows	Other areas
Hot water	As per heating	1,000L storage, 50W secondary circulation pump, losses 8W/m, time switch	All areas
Lighting	LED, assumed 110 lms/W	Manual control	Kitchen
		Presence detection	Corridors, stairs, storage
		Absence detection and daylight control	Offices, Communal areas

Table 5.3 'Be Lean' stage Building Services Systems & Performance Data

5.2 Be Lean' Assessment Results

The results of the 'Be Lean' assessment are shown in table 5.3 below. These demonstrate that the site has CO_2 emissions of 459,846 kg per annum. This is a reduction of 73.97% below the baseline figure.

Floor Type	Total Area (m^2)	Average TER ($kg/m^2/yr$)	Average DER / BER ($kg/m^2/yr$)	CO_2 (kg/yr)
Ground Floor	19,572	11.02	3.24	63,400
Mid Floor	60,677	16.13	3.58	217,435
Mid Floor Partial Roof	26,293	11.74	3.33	87,426
Top Floor	21,135	12.04	3.74	79,041
Commercial	3,074	2.96	4.08	12,544
Site 'Be Lean' Totals				**459,846**
% Reduction below TER baseline				**73.97%**

Table 5.3 Annual 'Be Lean' Regulated energy use & CO_2 Emissions

PJR
BUILDING SERVICES
DESIGN ENGINEERS

6.0 'Be Clean' Assessment

6.1 District Heat Networks

As part of the energy hierarchy assessment development should consider the feasibility of connecting to existing heat networks. Where these do not exist, development heating strategy should be designed to be 'network ready' to allow connection to a network in the future should one become available.

At the time of writing it is understood that there are no existing heat networks within the vicinity of the proposed development site, meaning a connection to such a network is not possible. There also are currently no known heat networks being proposed within the vicinity of the site and so a connection in the short to medium term at least is not considered likely.

Notwithstanding this, the proposed services strategy utlises a communal heat source, which will circulate hot water around the building through a primary circuit to be transferred to each apartment via local Heat Interface Units. As a centralised system is proposed rather than multiple local systems this can be easily designed with capacity for a future heat network connection should one become available. Therefore, the proposed heating and hot water strategy will be 'network ready.' The strategy could be considered a new heat network in itself since it will serve a total of 137no individual residential properties.

6.1 Combined Heat & Power

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

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

Furthermore, CHP does not perform particularly well against the new Part L2 2021 standard, as the gas used to generate the electricity within the unit actually has higher CO_2 emissions per kWh than grid supplied electricity. A CHP engine would therefore put the development at a disadvantage in terms of building regulations compliance.

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

analysis.

PJR
BUILDING SERVICES
DESIGN ENGINEERS

7.0 'Be Green' Assessment

7.1 Summary

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

7.2 Ground Source Heat Pumps

A ground sourced heat pump (GSHP) is a system used to extract heat from the ground to provide space heating and domestic hot water within buildings. At a depth of 2m below the surface the ground remains at a relatively constant temperature throughout the year (approximately 10-12^{0}C in England) and so this can be used as a heat source. A heat transfer fluid is circulated through a closed buried in the ground and passes through a heat exchanger in the heat pump that extracts heat from the fluid through a vapour compression cycle, similar to a refrigerator in reverse.

The existing site is predominantly occupied by the proposed building footprint and so there is not enough space available for a horizontal system. It is unlikely sufficient space would be available for vertical system either. Furthermore, the coastal location of the site means that salt ground water could adversely affect a vertical system and could make the installation complex .

Therefore, a GSHP system is not considered to be viable for this project.

7.3 Air Source Heat Pumps

In a similar way to GHPSs, Air Source Heat Pumps (ASHPs) extract renewable heat from the outside air using an external condenser unit and vapour compression cycle. This is then transferred through refrigeration pipework to an indoor unit, which conveys that heat to the heating emitters and / or hot water cylinder. This system can provide 100% of heating within a building when sized correctly.

An ASHP system could be utlised within the building to provide DHW and space heating, with the latter being achieved through the use of a wet heating system. With the lower emissions factor associated with grid supplied electricity in Part L 2021 and the high Co-Efficient of Performance (COP) of ASHPs this strategy will offer a low carbon solution to heating and domestic hot water provision.

This technology is therefore considered to offer a viable low carbon heating and hot water strategy. However, as discussed within section 5.2, this has already been considered within the 'be lean' strategy and so cannot be considered again at this stage.

7.4 Biomass

Within a biomass system waste timber, in the form of wood chips and pellets, can be used as fuel in boilers to provide heating and hot water within buildings. Biomass generation is close to carbon neutral, meaning the CO_2 that is emitted by the combustion is comparable to the CO_2 that is removed from the atmosphere during the life of the tree. Wood chips and pellets present no risk if accidentally released into the environment and there are no harmful by-products. The flue gas is smoke-free and the ash content of between 0.5% and 3% by volume (depending on material), is minimal.

Biomass heating systems are typically sized to meet the majority of the building heating load, with gas condensing boilers providing the additional input required at peak times to reduce the amount of on/off cycling of the biomass boilers. A biomass boiler system would therefore need to be coupled with gas fired boilers to offer a bivalent heating solution.

Storage of the biomass fuel would be required on site, sized to accommodate at least one peak month of heating. On this site there would be limited available space to locate the fuel storage and delivery of the fuel could pose an issue to local traffic in an urban context. There is also a concern regarding security of fuel supply since the building could accommodate vulnerable individuals. This would present a significant problem if the fuel were unavailable, or access to the site is not possible during periods of prolonged cold weather.

Furthermore, the flue emissions from the boiler could affect local air quality and may not comply with Local Authority policy in this regard.

For these reasons, a biomass heating system is not considered to be viable for the development.

7.5 Solar thermal

Solar thermal heating systems use the renewable energy from the sun to heat water, most commonly in the UK for hot water needs. The systems use a heat collector, generally mounted on the roof in which a fluid is heated by the sun. This fluid is passed through a heat exchanger and used to heat up water, which is stored in either a separate hot water cylinder or a twin coil hot water cylinder inside the building. There are two types of collectors used for solar water heating applications - flat plate collectors and evacuated tube collectors. Evacuated tube collectors are generally more expensive due to a more complex

manufacturing process (to achieve the vacuum) but offer a higher performance during winter months.

A solar thermal system would normally supply heat to a cylinder within the building in conjunction with a typical gas boiler arrangement. The solar thermal system would therefore need to feed into a central buffer vessel, which would then be 'topped up' by the primary heat generator.

A solar thermal system would be more preferable than photovoltaics (PV) for use with a system that is gas-fired, since gas has a higher emissions factor than electricity in Part L 2021. However, as the proposed heating and hot water strategy is likely to be electrically powered this will not be a factor. Furthermore, once the stored domestic hot water reaches the set point temperature any additional heat captured from the solar thermal system would have nowhere to go and would need 'dumped' to avoid the system overheating.

A solar thermal system would need to be installed on the roof of the development as there are no other suitable external areas on site. However, this would be in direct competition for roof space with photovoltaics (PV), which would offer a low maintenance method of offsetting emissions.

For these reasons, a solar thermal hot water system is not considered to be viable for this development.

7.6 Photovoltaics

Solar photovoltaic (PV) technology is a semi-conductor based technology that converts the energy in sunlight into electricity. The term describes a solid-state electronic cell that produces direct current electrical energy from the radiant energy of the sun. When sunlight strikes the surface of a PV cell, this electrical field provides momentum and direction to light-stimulated electrons, resulting in a flow of direct current when the solar cell is connected to an electrical load. The PV systems should be unshaded as shading, even over a small area of the panel, can significantly reduce performance. Excess energy can be exported to the grid, ensuring CO_2 savings can always be made.

The proposed development does have available roof space, which would be ideally suited to locating a PV array. As the proposed heating and hot water strategy will utilise electric heat pumps, any energy generated would be directly used for this purpose for the majority of the time.

A PV array could be installed on site to further reduce CO_2 emissions and this technology is therefore considered to be viable and preferable. This PV system would likely be connected to the non-residential areas supply and so would assist in reducing the Building Emission Rate (BER) for these areas within the Part L2 2021 assessment.

7.7 'Be Green' Strategy & Results

The above appraisal concludes that both a central ASHP heating and hot water system and a PV array would be the most viable technologies for consideration within the development's energy strategy. However, as the ASHP has already been considered at the 'be lean' stage this cannot be counted again and so the proposed LZC

strategy will be to incorporate a roof mounted PV array.

Commercially available PV panels have an area of approximately 2.0sqm and can achieve a peak output of 440Wp each. Based upon the available roof space a PV array of 100no 440Wp panels is proposed. These would be orientated South at an inclination of 10^0 from horizontal. The proposed PV array should generate approximately 42,027 kWh of electricity annually.

The results of the 'Be Green' assessment are shown in table 7.1 below. These demonstrate that the building achieves 'be green' emissions of 454,497 kgCO_2/annum, which is a reduction of 74.30% below the baseline figures.

Floor Type	Total Area (m^2)	Average TER ($kg/m^2/yr$)	Average DER / BER ($kg/m^2/yr$)	CO_2 (kg/yr)
Ground Floor	19,572	11.02	3.24	63,400
Mid Floor	60,677	16.13	3.58	217,435
Mid Floor Partial Roof	26,293	11.74	3.33	87,426
Top Floor	21,135	12.04	3.74	79,041
Commercial	3,074	2.96	2.34	7,194
Site 'Be Green' Totals				**454,497**
% Reduction below TER baseline				**74.30%**

Table 7.1 Annual 'Be Green' Regulated energy use & CO_2 Emissions

PJR
BUILDING SERVICES
DESIGN ENGINEERS

8.0 Proposed Energy and LZC Technology Strategy

8.1 Recommended Strategy

An energy strategy for the proposed residential and community development at Site 1 Langney Point, Martinique Way, Eastbourne has been assessed in accordance with local and national planning policy based upon the energy hierarchy:

Be Lean: use less energy
Be Clean: supply energy efficiently
Be Green: use renewable energy

Following this approach has resulted in an energy efficient scheme that has minimised CO_2 emissions associated with the use of regulated energy through the high thermal performance of the proposed extension envelope and high efficiency building services strategy. These measures have resulted in a reduction in annual CO_2 emissions of 74.0% below the Part L 2021 baseline.

Connection to a district heat network is not a viable option as there are no existing networks in close vicinity of the site and no known networks being considered. However, the proposed centralised heating system can be easily adapted to connect to a network should a connection become available in the future .

An LZC technology appraisal has been completed, which concludes that a PV array would be the most suitable option for inclusion. As such a 44.0 kWp PV array is proposed at roof level, which would offer a further 0.3% reduction in CO_2 emissions below the 'Be Lean' assessment and a total of 74.3% overall reduction below the baseline emissions.

The results of the energy hierarchy analysis followed within this energy strategy are shown in table 8.1 and figure 8.1 below.

Measure	Site CO_2 Emissions (kg/yr)	CO_2 Reduction (kg/yr)	Reduction at each Stage (%)	Reduction from Baseline (%)
Part L Baseline	1,766,902			
Be Lean	459,846	1,307,056	74.0%	74.0%
Be Green (proposed design)	454,497	1,312,406	1.2%	74.3%

Table 8.1 Results of energy hierarchy analysis using Part L2 2021

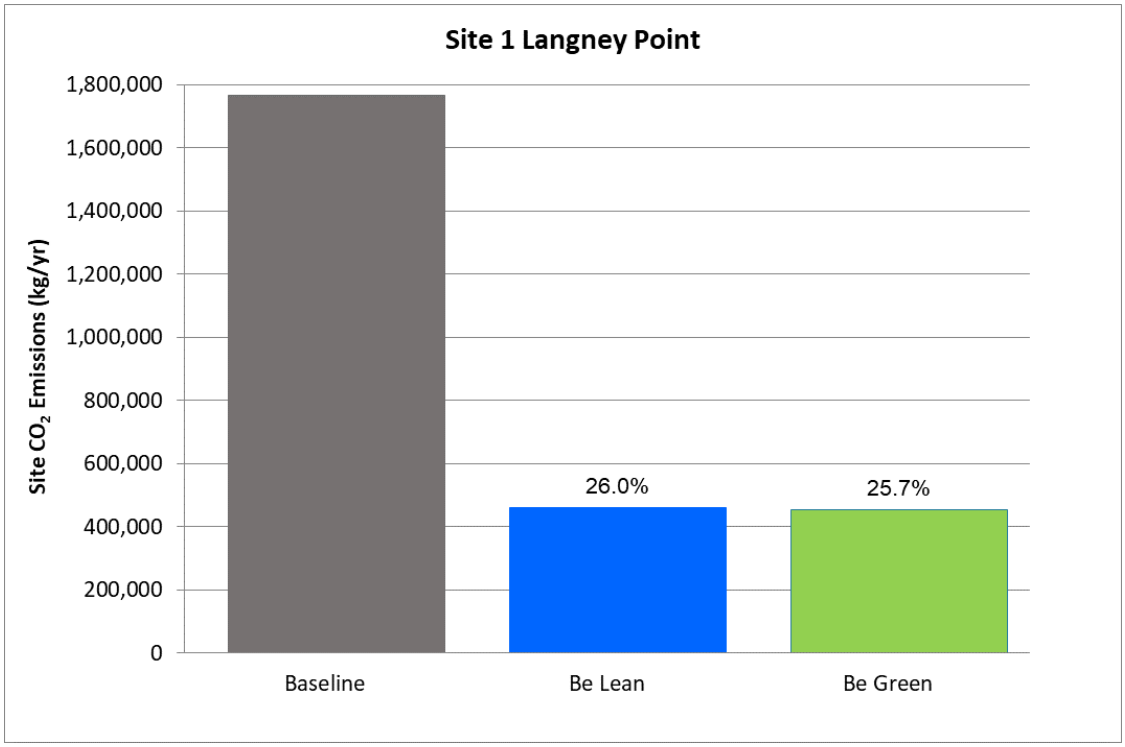

Figure 8.1 Graphical results of energy hierarchy analysis Part L2 2021

PJR
BUILDING SERVICES
DESIGN ENGINEERS

9.0 Water Management

To protect water resources, water consumption within the apartments will be reduced as far as practicable. To achieve this, Low and dual flush WC cisterns, restricted taps / showers and low capacity baths will be installed. The performance of these sanitary components will be the following or lower:

- WCs – 4.5/3.0L dual flush
- Basin taps – 6L/min
- Kitchen taps – 6L/min
- Showers – 6L/min
- Baths – 140L capacity to overflow

The above data has been entered into the Part G water calculator and a performance level of 98.5 L per person per day has been calculated. As the performance level of white goods cannot be confirmed at this stage these have been assumed to be typical. The results of the water calculator are shown in figure 7.1 below.

Rainwater collection is not considered a viable option on this development as the available catchment areas is relatively small compared to the water demand. Greywater collection is also not deemed to be viable as this would require multiple systems for each block and could pose a maintenance issue due to the number of apartments being served.

Installation Type	Unit of Measure	Capacity/Flow rate (1)	Use Factor (2)	Fixed use (litres/person/day) (3)	Litres/person/day = [(1)x(2)] + (3) (4)
WC (single flush)	Flush Volume (litres)		4.42	0.00	0
WC (dual flush)	Full flush Volume (litres)	4.5	1.46	0.00	6.57
	Part flush Volume (litres)	3	2.96	0.00	8.88
WC (multiple fittings)	Average effective flushing Volume (litres)		4.42	0.00	0
Taps (excluding kitchen/utility room taps)	Flow rate (litres/min)	6.00	1.58	1.58	11.06
Bath (where shower also present)	Capacity to overflow(litres)	140.00	0.11	0.00	15.40
Shower (where bath also present)	Flow Rate(litres / minute)	6.00	4.37	0.00	26.22
Bath Only	Capacity to overflow(litres)		0.50	0.00	0
Shower Only	Flow Rate (litres/minute)		5.60	0.00	0
Kitchen/Utility room sink taps	Flow rate (litres/minute)	6.00	0.44	10.36	13.00
Washing Machine	(Litres/kg dry load)	8.17	2.1	0.00	17.16
Dishwasher	(Litres/place setting)	1.25	3.6	0.00	4.50
Waste disposal unit	(Litres/use)	☐ Present	3.08	0.00	0
Water Softener	(Litres/person/day)		1.00	0.00	0
	(5)	Total Calculated use (litres/person/day) =SUM(column 4)			102.79
	(6)	Contribution from greywater (litres/person/day)			0
	(7)	Contribution from rainwater (litres/person/day)			0
	(8)	Normalisation factor			0.91
	(9)	Total internal water consumption = [(5)-(6)-(7)]x(8) (litres/person/day)			93.54
	(10)	External water use			5.0
	(11)	Total water consumption (Building Regulation 17.K) =(9)+(10)(litres/person/day)			98.5

Figure 7.1 – Results of Part G water calculation

PJR
BUILDING SERVICES
DESIGN ENGINEERS

Appendix 1- SAP Reports and BRUKL

BRUKL Output Document

HM Government

Compliance with England Building Regulations Part L 2021

Project name

Sovereign Harbour

As designed

Date: Fri Dec 15 11:09:54 2023

Administrative information

Building Details

Address: Eastbourne,

Certifier details

Name: PJR Services

Telephone number:

Address: , , Postcode

Certification tool

Calculation engine: Apache

Calculation engine version: 7.0.24

Interface to calculation engine: IES Virtual Environment

Interface to calculation engine version: 7.0.24

BRUKL compliance module version: v6.1.e.1

Foundation area [m²]: 431.33

The CO_2 emission and primary energy rates of the building must not exceed the targets

Target CO_2 emission rate (TER), $kgCO_2/m^2.annum$	2.96	
Building CO_2 emission rate (BER), $kgCO_2/m^2.annum$	2.34	
Target primary energy rate (TPER), $kWh_{PE}/m^2.annum$	31.35	
Building primary energy rate (BPER), $kWh_{PE}/m^2.annum$	23.42	
Do the building's emission and primary energy rates exceed the targets?	BER =< TER	BPER =< TPER

The performance of the building fabric and fixed building services should achieve reasonable overall standards of energy efficiency

Fabric element	$U_{a\text{-}Limit}$	$U_{a\text{-}Calc}$	$U_{i\text{-}Calc}$	First surface with maximum value
Walls*	0.26	0.15	0.15	BL000010:Surf[2]
Floors	0.18	0.09	0.09	BL000010:Surf[0]
Pitched roofs	0.16	-	-	No pitched roofs in building
Flat roofs	0.18	0.1	0.1	BL000026:Surf[16]
Windows** and roof windows	1.6	1.1	1.1	BL000010:Surf[1]
Rooflights***	2.2	-	-	No roof lights in building
Personnel doors^	1.6	-	-	No personnel doors in building
Vehicle access & similar large doors	1.3	-	-	No vehicle access doors in building
High usage entrance doors	3	-	-	No high usage entrance doors in building

$U_{a\text{-}Limit}$ = Limiting area-weighted average U-values [W/(m²K)] $U_{i\text{-}Calc}$ = Calculated maximum individual element U-values [W/(m²K)]

$U_{a\text{-}Calc}$ = Calculated area-weighted average U-values [W/(m²K)]

* Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows.

** Display windows and similar glazing are excluded from the U-value check. *** Values for rooflights refer to the horizontal position.

^ For fire doors, limiting U-value is 1.8 W/m²K

NB: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.

Air permeability	Limiting standard	This building
$m^3/(h.m^2)$ at 50 Pa	8	2.5

Building services

For details on the standard values listed below, system-specific guidance, and additional regulatory requirements, refer to the Approved Documents.

Whole building lighting automatic monitoring & targeting with alarms for out-of-range values	NO
Whole building electric power factor achieved by power factor correction	<0.9

1- Mitsubishi VRF and Nat Vent

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	5.05	6.8	0	-	-
Standard value	2.5*	5	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.					

2- Mitsubishi VRF (Kitchen)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	5.05	6.8	0	-	0.85
Standard value	2.5*	5	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.					

3- UGF corridors

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	5.05	-	0.2	0	-
Standard value	2.5*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.					

4- Mitsubishi VRF and MVHR

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	5.05	6.8	0	-	0.8
Standard value	2.5*	5	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.					

5- Resi corridors

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.65	-	0.2	-	-
Standard value	N/A	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO

1- DHW

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	3.44	0.005
Standard value	1	N/A

Zone-level mechanical ventilation, exhaust, and terminal units

ID	System type in the Approved Documents
A	Local supply or extract ventilation units
B	Zonal supply system where the fan is remote from the zone
C	Zonal extract system where the fan is remote from the zone
D	Zonal balanced supply and extract ventilation system
E	Local balanced supply and extract ventilation units
F	Other local ventilation units
G	Fan assisted terminal variable air volume units
H	Fan coil units
I	Kitchen extract with the fan remote from the zone and a grease filter

NB: Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.

Zone name	SFP [W/(l/s)]									HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I		
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard
BOH Commercial Kitchen	-	-	-	1.9	-	-	-	-	-	-	N/A
BOH Staff Changing	-	-	0.4	-	-	-	-	-	-	-	N/A
Common Parts Bar / Bistro	-	1.1	-	-	-	-	-	-	-	-	N/A
Common Parts Private Dining	-	1.1	-	-	-	-	-	-	-	-	N/A
Common Parts WCs	-	-	0.4	-	-	-	-	-	-	-	N/A
Village Hall	-	1.1	-	-	-	-	-	-	-	-	N/A

General lighting and display lighting	General luminaire	Display light source	
Zone name	Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]
Standard value	95	80	0.3
Atrium	110	-	-
BOH Bar Store	110	-	-
BOH Commercial Kitchen	110	-	-
BOH Comms	110	-	-
BOH Fire Store	110	-	-
BOH Staff Changing	110	-	-
BOH Staff Room	110	-	-
BOH Store	110	-	-
BOH Village Hall Store	110	-	-
Circulation	110	-	-
Circulation	110	-	-
Circulation	110	-	-
Common Parts Bar / Bistro	110	-	-
Common Parts Office / Meeting	110	-	-
Common Parts Office 01	110	-	-
Common Parts Office 02	110	-	-
Common Parts Private Dining	110	-	-
Common Parts WCs	110	-	-
Resi Circulation	110	-	-

General lighting and display lighting	General luminaire	Display light source	
Zone name	**Efficacy [lm/W]**	**Efficacy [lm/W]**	**Power density [W/m²]**
Standard value	95	80	0.3
Resi Circulation	110	-	-
Resi Circulation	110	-	-
Resi Circulation	110	-	-
Resi Circulation	110	-	-
Resi Circulation	110	-	-
Resi Circulation	110	-	-
Resi Circulation	110	-	-
Stairs	110	-	-
Store	110	-	-
Village Hall	110	-	-

The spaces in the building should have appropriate passive control measures to limit solar gains in summer

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Atrium	YES (+139.3%)	NO
BOH Commercial Kitchen	NO (-12.4%)	NO
BOH Staff Changing	YES (+9.3%)	NO
BOH Staff Room	YES (+15.6%)	NO
Circulation	N/A	N/A
Common Parts Bar / Bistro	YES (+101.8%)	NO
Common Parts Office / Meeting	YES (+16%)	NO
Common Parts Office 01	N/A	N/A
Common Parts Office 02	YES (+90.1%)	NO
Common Parts Private Dining	YES (+129.2%)	NO
Common Parts WCs	N/A	N/A
Stairs	YES (+128.7%)	NO
Village Hall	YES (+134.7%)	NO

Regulation 25A: Consideration of high efficiency alternative energy systems

Were alternative energy systems considered and analysed as part of the design process?	NO
Is evidence of such assessment available as a separate submission?	NO
Are any such measures included in the proposed design?	NO

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Floor area [m^2]	3074.4	3074.4
External area [m^2]	2965.5	2965.5
Weather	SOU	SOU
Infiltration [m^3/hm^2@ 50Pa]	3	3
Average conductance [W/K]	1106.71	1123.44
Average U-value [W/m^2K]	0.37	0.38
Alpha value* [%]	25.16	10

* Percentage of the building's average heat transfer coefficient which is due to thermal bridging

Building Use

% Area	Building Type
	Retail/Financial and Professional Services
	Restaurants and Cafes/Drinking Establishments/Takeaways
	Offices and Workshop Businesses
	General Industrial and Special Industrial Groups
	Storage or Distribution
	Hotels
	Residential Institutions: Hospitals and Care Homes
	Residential Institutions: Residential Schools
	Residential Institutions: Universities and Colleges
	Secure Residential Institutions
78	**Residential Spaces**
22	**Non-residential Institutions: Community/Day Centre**
	Non-residential Institutions: Libraries, Museums, and Galleries
	Non-residential Institutions: Education
	Non-residential Institutions: Primary Health Care Building
	Non-residential Institutions: Crown and County Courts
	General Assembly and Leisure, Night Clubs, and Theatres
	Others: Passenger Terminals
	Others: Emergency Services
	Others: Miscellaneous 24hr Activities
	Others: Car Parks 24 hrs
	Others: Stand Alone Utility Block

Energy Consumption by End Use [kWh/m^2]

	Actual	Notional
Heating	6.95	5.43
Cooling	1.33	0.31
Auxiliary	3.12	2.11
Lighting	7.89	5.22
Hot water	9.11	10.33
Equipment*	16.5	16.5
TOTAL**	**28.4**	**23.41**

* Energy used by equipment does not count towards the total for consumption or calculating emissions.
** Total is net of any electrical energy displaced by CHP generators, if applicable.

Energy Production by Technology [kWh/m^2]

	Actual	Notional
Photovoltaic systems	13.67	2.42
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
Displaced electricity	*13.67*	*2.42*

Energy & CO_2 Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m^2]	49.89	42.39
Primary energy [kWh_{PE}/m^2]	23.42	31.35
Total emissions [kg/m^2]	2.34	2.96

HVAC Systems Performance

System Type		Heat dem MJ/m2	Cool dem MJ/m2	Heat con kWh/m2	Cool con kWh/m2	Aux con kWh/m2	Heat SSEEF	Cool SSEER	Heat gen SEFF	Cool gen SEER
[ST] Split or multi-split system, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	117.4	149.6	6.9	8.6	5.1	4.71	4.83	5.05	6.8
	Notional	154	21.9	15.4	1.3	7.3	2.78	4.63	----	----
[ST] Split or multi-split system, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	24.5	101.7	1.4	5.9	5.3	4.71	4.83	5.05	6.8
	Notional	27	20.9	2.7	1.3	1.6	2.78	4.63	----	----
[ST] Central heating using water: floor heating, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity										
	Actual	19.5	0	9.3	0	2.6	0.58	0	0.65	0
	Notional	27	0	5.3	0	1.5	1.41	0	----	----
[ST] Split or multi-split system, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	0.3	151.9	0	8.7	10.3	4.71	4.83	5.05	6.8
	Notional	2.5	78.7	0.2	4.7	1.8	2.78	4.63	----	----
[ST] Central heating using water: floor heating, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	30.8	0	1.9	0	2.5	4.51	0	5.05	0
	Notional	52.6	0	5.3	0	1.4	2.78	0	----	----
[ST] No Heating or Cooling										
	Actual	0	0	0	0	0	0	0	0	0
	Notional	0	0	0	0	0	0	0	----	----

Key to terms

Heat dem [MJ/m2]	= Heating energy demand
Cool dem [MJ/m2]	= Cooling energy demand
Heat con [kWh/m2]	= Heating energy consumption
Cool con [kWh/m2]	= Cooling energy consumption
Aux con [kWh/m2]	= Auxiliary energy consumption
Heat SSEFF	= Heating system seasonal efficiency (for notional building, value depends on activity glazing class)
Cool SSEER	= Cooling system seasonal energy efficiency ratio
Heat gen SSEFF	= Heating generator seasonal efficiency
Cool gen SSEER	= Cooling generator seasonal energy efficiency ratio
ST	= System type
HS	= Heat source
HFT	= Heating fuel type
CFT	= Cooling fuel type

Summary for Input Data

Property Reference	AB First Floor End Terrace	**Issued on Date**	15/12/2023
Assessment Reference	Be Green	**Prop Type Ref**	First Floor End Terrace
Property	Ground Floor End Terrace, Sovereign Harbour, Eastbourne		

SAP Rating	84 B	**DER**	3.13	**TER**	12.11
Environmental	98 A	**% DER < TER**			74.15
CO_2 Emissions (t/year)	0.17	**DFEE**	20.52	**TFEE**	22.15
Compliance Check	See BREL	**% DFEE < TFEE**			7.38
% DPER < TPER	48.30	**DPER**	33.68	**TPER**	65.15

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

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

Orientation	Unknown	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Flat, End-Terrace	
Position of Flat	Mid-floor flat	
Which Floor	1	
2.0 Number of Storeys	1	
3.0 Date Built	2023	
3.0 Property Age Band	L	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	N/A	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	No	
Smart gas meter fitted	No	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Basement:	0.00 m	0.00 m²	0.00 m
Ground floor:	13.52 m	55.91 m²	2.80 m
1st Storey:	0.00 m	0.00 m²	0.00 m
2nd Storey:	0.00 m	0.00 m²	0.00 m
3rd Storey:	0.00 m	0.00 m²	0.00 m
4th Storey:	0.00 m	0.00 m²	0.00 m
5th Storey:	0.00 m	0.00 m²	0.00 m
6th Storey:	0.00 m	0.00 m²	0.00 m
7th Storey:	0.00 m	0.00 m²	0.00 m

8.0 Living Area	27.05	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	Steel Frame	Other	0.15	140.00	37.86	29.80	0.00	None	8.06	Calculate Wall 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	Steel frame	0.00	20.00	110.28	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Plasterboard on timber frame	9.00	149.19

10.1 Party Ceilings

Summary for Input Data

elmhurst energy

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Party Ceiling 1	Concrete floor slab, carpeted	100.00	55.91

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Concrete floor slab, carpeted	100.00	55.91

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Window	Manufacturer	Window	Double glazed		Air Filled	0.45	Wood	0.70	1.10

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
East	Window	External Wall 1	East	8.06	0

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	
17.0 Thermal Bridging	User Input	

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E16 Corner (normal)	Independently assessed	2.80	0.00	0.00	No
E18 Party wall between dwellings	Independently assessed	2.80	0.00	0.00	No
E7 Party floor between dwellings (in blocks of flats)	Independently assessed	12.56	0.00	0.00	No
E23 Balcony within or between dwellings, balcony support penetrates wall insulation	Independently assessed	14.48	0.00	0.00	No
E25 Staggered party wall between dwellings	Independently assessed	2.80	0.00	0.00	No
P3 Party wall - Intermediate floor between dwellings (in blocks of flats)	Independently assessed	50.42	0.00	0.00	No
E2 Other lintels (including other steel lintels)		3.84	0.00	0.00	Yes
E3 Sill		3.84	0.00	0.00	Yes
E4 Jamb		8.40	0.00	0.00	Yes

Y-value	0.05	W/m²K
Description	a	
18.0 Pressure Testing	Yes	
Designed AP_{50}	2.50	m³/(h.m²) @ 50 Pa
Property Tested?	Yes	
Test Method	Blower Door	

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	No
Mechanical Ventilation data Type	Database
Type	Balanced mechanical ventilation with heat recovery
MV Reference Number	500501
Configuration	1
Manufacturer SFP	0.50
Duct Type	Rigid
MVHR Efficiency	90.00
Wet Rooms	1
SFP from Installer Commissioning Certificate	No
MVHR System Location	Inside heated envelope (installed exclusively)
Duct Installation Specification	Level 1

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.19	In Room Fan Kitchen	1
0.18	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

21.0 Fixed Cooling System — No

22.0 Lighting

No Fixed Lighting — No

Name	Efficacy	Power	Capacity	Count
Lighting 1	85.00	8	680	5

24.0 Main Heating 1 — None

25.0 Main Heating 2 — None

26.0 Heat Networks — Space and Water Combined

Space Community Heating

Distribution Loss	Formal Declaration by Property Developer
Distribution Loss Value	1.05
SAP Code	2308

	Heat Source	Fuel Type	Heating Use	Efficiency	Percentage Of Heat	Heat	Heat Power Ratio	Electrical	Fuel Factor	Efficiency type
Heat source 1	Heat pump	Electricity	Space and Water	324.00	100.00					
Heat source 2	None		Space and Water							
Heat source 3	None		Space and Water							
Heat source 4	None		Space and Water							
Heat source 5	None		Space and Water							

28.0 Water Heating

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

28.1 Showers

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

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder — None

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

31.0 Thermal Store — None

34.0 Small-scale Hydro — None

Summary for Input Data

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

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

Property Reference	AB First Floor Mid Terrace	**Issued on Date**	15/12/2023
Assessment Reference	Be Green	**Prop Type Ref**	Mid Floor Mid Terrace
Property	Ground Floor End Terrace, Sovereign Harbour, Eastbourne		

SAP Rating	85 B	**DER**	2.73	**TER**	10.21
Environmental	98 A	**% DER < TER**			73.26
CO_2 Emissions (t/year)	0.2	**DFEE**	20.06	**TFEE**	20.63
Compliance Check	See BREL	**% DFEE < TFEE**			2.75
% DPER < TPER	46.14	**DPER**	29.39	**TPER**	54.57

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

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

Orientation	Unknown	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Flat, Mid-Terrace	
Position of Flat	Mid-floor flat	
Which Floor	1	
2.0 Number of Storeys	1	
3.0 Date Built	2023	
3.0 Property Age Band	L	
4.0 Sheltered Sides	3	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	N/A	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	No	
Smart gas meter fitted	No	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Basement:	0.00 m	0.00 m²	0.00 m
Ground floor:	9.73 m	75.12 m²	2.80 m
1st Storey:	0.00 m	0.00 m²	0.00 m
2nd Storey:	0.00 m	0.00 m²	0.00 m
3rd Storey:	0.00 m	0.00 m²	0.00 m
4th Storey:	0.00 m	0.00 m²	0.00 m
5th Storey:	0.00 m	0.00 m²	0.00 m
6th Storey:	0.00 m	0.00 m²	0.00 m
7th Storey:	0.00 m	0.00 m²	0.00 m

8.0 Living Area	29.08	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	Steel Frame	Other	0.15	140.00	27.24	13.49	0.00	None	13.75	Calculate Wall 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	Steel frame	0.00	20.00	108.94	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Plasterboard on timber frame	9.00	139.92

10.1 Party Ceilings

Summary for Input Data

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Party Ceiling 1	Concrete floor slab, carpeted	100.00	75.12

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Concrete floor slab, carpeted	100.00	75.12

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Window	Manufacturer	Window	Double glazed		Air Filled	0.45	Wood	0.70	1.10

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
East	Window	External Wall 1	East	13.75	0

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	
17.0 Thermal Bridging	User Input	

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E18 Party wall between dwellings	Independently assessed	5.60	0.00	0.00	No
E23 Balcony within or between dwellings, balcony support penetrates wall insulation	Independently assessed	19.46	0.00	0.00	No
P3 Party wall - Intermediate floor between dwellings (in blocks of flats)	Independently assessed	50.42	0.00	0.00	No
E2 Other lintels (including other steel lintels)		6.55	0.00	0.00	Yes
E3 Sill		6.55	0.00	0.00	Yes
E4 Jamb		12.60	0.00	0.00	Yes

Y-value	0.05	W/m²K
Description	a	
18.0 Pressure Testing	Yes	
Designed AP_{50}	2.50	m³/(h.m²) @ 50 Pa
Property Tested?	Yes	
Test Method	Blower Door	

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	No
Mechanical Ventilation data Type	Database
Type	Balanced mechanical ventilation with heat recovery
MV Reference Number	500501
Configuration	1
Manufacturer SFP	0.50
Duct Type	Rigid
MVHR Efficiency	90.00
Wet Rooms	1
SFP from Installer Commissioning Certificate	No
MVHR System Location	Inside heated envelope (installed exclusively)
Duct Installation Specification	Level 1

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.19	In Room Fan Kitchen	1
0.18	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

21.0 Fixed Cooling System — No

22.0 Lighting

No Fixed Lighting — No

Name	Efficacy	Power	Capacity	Count
Lighting 1	85.00	8	680	5

24.0 Main Heating 1 — None

25.0 Main Heating 2 — None

26.0 Heat Networks — Space and Water Combined

Space Community Heating

Distribution Loss	Formal Declaration by Property Developer
Distribution Loss Value	1.05
SAP Code	2308

	Heat Source	Fuel Type	Heating Use	Efficiency	Percentage Of Heat	Heat	Heat Power Ratio	Electrical	Fuel Factor	Efficiency type
Heat source 1	Heat pump	Electricity	Space and Water	324.00	100.00					
Heat source 2	None		Space and Water							
Heat source 3	None		Space and Water							
Heat source 4	None		Space and Water							
Heat source 5	None		Space and Water							

28.0 Water Heating

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

28.1 Showers

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

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder — None

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

31.0 Thermal Store — None

34.0 Small-scale Hydro — None

Electricity Generated	0.00	
Apportioned	0.00	kWh/Year

Summary for Input Data

Connected to dwelling's electricity meter	Yes
Electricity Generation	Annual

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

Property Reference	AB Ground Floor End Terrace	**Issued on Date**	15/12/2023
Assessment Reference	00001	**Prop Type Ref**	Ground Floor End Terrace
Property	Ground Floor End Terrace, Sovereign Harbour, Eastbourne		

SAP Rating	83 B	**DER**	3.81	**TER**	17.72
Environmental	97 A	**% DER < TER**			78.50
CO_2 Emissions (t/year)	0.2	**DFEE**	41.64	**TFEE**	47.91
Compliance Check	See BREL	**% DFEE < TFEE**			13.08
% DPER < TPER	57.40	**DPER**	40.64	**TPER**	95.38

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

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

Orientation	Unknown	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Flat, End-Terrace	
Position of Flat	Ground-floor flat	
Which Floor	0	
2.0 Number of Storeys	1	
3.0 Date Built	2023	
3.0 Property Age Band	L	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	N/A	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	No	
Smart gas meter fitted	No	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Basement:	0.00 m	0.00 m²	0.00 m
Ground floor:	13.52 m	55.91 m²	3.80 m
1st Storey:	0.00 m	0.00 m²	0.00 m
2nd Storey:	0.00 m	0.00 m²	0.00 m
3rd Storey:	0.00 m	0.00 m²	0.00 m
4th Storey:	0.00 m	0.00 m²	0.00 m
5th Storey:	0.00 m	0.00 m²	0.00 m
6th Storey:	0.00 m	0.00 m²	0.00 m
7th Storey:	0.00 m	0.00 m²	0.00 m

8.0 Living Area	27.05	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	Steel Frame	Other	0.15	140.00	51.38	43.32	0.00	None	8.06	Calculate Wall 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	Steel frame	0.00	20.00	110.28	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Plasterboard on timber frame	9.00	149.19

10.1 Party Ceilings

Summary for Input Data

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Party Ceiling 1	Concrete floor slab, carpeted	100.00	55.91

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 1	Exposed Floor - Solid	Lowest occupied	Other	0.09	None	0.00	0.00	55.91

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Window	Manufacturer	Window	Double glazed		Air Filled	0.45	Wood	0.70	1.10

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
East	Window	External Wall 1	East	8.06	0

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	
17.0 Thermal Bridging	User Input	

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	3.84	0.00	0.00	Yes
E4 Jamb	Independently assessed	8.40	0.00	0.00	Yes
E20 Exposed floor (normal)	Independently assessed	13.52	0.00	0.00	Yes
E16 Corner (normal)	Independently assessed	3.80	0.00	0.00	No
E18 Party wall between dwellings	Independently assessed	3.80	0.00	0.00	No
E7 Party floor between dwellings (in blocks of flats)	Independently assessed	6.28	0.00	0.00	No
E23 Balcony within or between dwellings, balcony support penetrates wall insulation	Independently assessed	7.24	0.00	0.00	No
E25 Staggered party wall between dwellings	Independently assessed	3.80	0.00	0.00	No
P3 Party wall - Intermediate floor between dwellings (in blocks of flats)	Independently assessed	16.55	0.00	0.00	No
P7 Party Wall - Exposed floor (normal)	Independently assessed	16.55	0.00	0.00	No

Y-value	0.05	W/m²K
Description	a	
18.0 Pressure Testing	Yes	
Designed AP_{50}	2.50	m³/(h.m²) @ 50 Pa
Property Tested?	Yes	
Test Method	Blower Door	

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	No
Mechanical Ventilation data Type	Database
Type	Balanced mechanical ventilation with heat recovery
MV Reference Number	500501
Configuration	1
Manufacturer SFP	0.50
Duct Type	Rigid
MVHR Efficiency	90.00
Wet Rooms	1
SFP from Installer Commissioning Certificate	No
MVHR System Location	Inside heated envelope (installed exclusively)
Duct Installation Specification	Level 1

19.1 Mechanical extract ventilation - Decentralised

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

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

20.0 Fans, Open Fireplaces, Flues

21.0 Fixed Cooling System — No

22.0 Lighting

No Fixed Lighting — No

Name	Efficacy	Power	Capacity	Count
Lighting 1	85.00	8	680	5

24.0 Main Heating 1 — None

25.0 Main Heating 2 — None

26.0 Heat Networks — Space and Water Combined

Space Community Heating

Distribution Loss	Formal Declaration by Property Developer
Distribution Loss Value	1.05
SAP Code	2308

	Heat Source	Fuel Type	Heating Use	Efficiency	Percentage Of Heat	Heat	Heat Power Ratio	Electrical	Fuel Factor	Efficiency type
Heat source 1	Heat pump	Electricity	Space and Water	324.00	100.00					
Heat source 2	None		Space and Water							
Heat source 3	None		Space and Water							
Heat source 4	None		Space and Water							
Heat source 5	None		Space and Water							

28.0 Water Heating

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

28.1 Showers

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

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder — None

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

31.0 Thermal Store — None

34.0 Small-scale Hydro — None

Summary for Input Data

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

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

Property Reference	AB Ground Floor Mid Terrace	**Issued on Date**	15/12/2023
Assessment Reference	Be Green	**Prop Type Ref**	Ground Floor End Terrace
Property	Ground Floor End Terrace, Sovereign Harbour, Eastbourne		

SAP Rating	84 B	**DER**	3.38	**TER**	14.95
Environmental	97 A	**% DER < TER**			77.39
CO_2 Emissions (t/year)	0.23	**DFEE**	38.62	**TFEE**	42.15
Compliance Check	See BREL	**% DFEE < TFEE**			8.38
% DPER < TPER	54.98	**DPER**	36.05	**TPER**	80.07

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

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

Orientation	Unknown	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Flat, Mid-Terrace	
Position of Flat	Ground-floor flat	
Which Floor	0	
2.0 Number of Storeys	1	
3.0 Date Built	2023	
3.0 Property Age Band	L	
4.0 Sheltered Sides	3	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	N/A	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	No	
Smart gas meter fitted	No	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Basement:	0.00 m	0.00 m²	0.00 m
Ground floor:	9.73 m	75.12 m²	3.80 m
1st Storey:	0.00 m	0.00 m²	0.00 m
2nd Storey:	0.00 m	0.00 m²	0.00 m
3rd Storey:	0.00 m	0.00 m²	0.00 m
4th Storey:	0.00 m	0.00 m²	0.00 m
5th Storey:	0.00 m	0.00 m²	0.00 m
6th Storey:	0.00 m	0.00 m²	0.00 m
7th Storey:	0.00 m	0.00 m²	0.00 m

8.0 Living Area	29.08	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	Steel Frame	Other	0.15	140.00	36.97	23.22	0.00	None	13.75	Calculate Wall 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	Steel frame	0.00	20.00	108.94	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Plasterboard on timber frame	9.00	139.92

10.1 Party Ceilings

Summary for Input Data

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Party Ceiling 1	Concrete floor slab, carpeted	100.00	75.12

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 1	Exposed Floor - Solid	Lowest occupied	Other	0.09	None	0.00	0.00	75.12

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Window	Manufacturer	Window	Double glazed		Air Filled	0.45	Wood	0.70	1.10

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
East	Window	External Wall 1	East	13.75	0

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	
17.0 Thermal Bridging	User Input	

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E18 Party wall between dwellings	Independently assessed	7.60	0.00	0.00	No
E23 Balcony within or between dwellings, balcony support penetrates wall insulation	Independently assessed	9.73	0.00	0.00	No
P3 Party wall - Intermediate floor between dwellings (in blocks of flats)	Independently assessed	25.21	0.00	0.00	No
P7 Party Wall - Exposed floor (normal)	Independently assessed	25.21	0.00	0.00	No
E2 Other lintels (including other steel lintels)		6.55	0.00	0.00	Yes
E4 Jamb		12.60	0.00	0.00	Yes
E20 Exposed floor (normal)		9.73	0.00	0.00	No

Y-value	0.05	W/m²K
Description	a	
18.0 Pressure Testing	Yes	
Designed AP_{50}	2.50	m³/(h.m²) @ 50 Pa
Property Tested?	Yes	
Test Method	Blower Door	

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	No
Mechanical Ventilation data Type	Database
Type	Balanced mechanical ventilation with heat recovery
MV Reference Number	500501
Configuration	1
Manufacturer SFP	0.50
Duct Type	Rigid
MVHR Efficiency	90.00
Wet Rooms	1
SFP from Installer Commissioning Certificate	No
MVHR System Location	Inside heated envelope (installed exclusively)
Duct Installation Specification	Level 1

19.1 Mechanical extract ventilation - Decentralised

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

0.08	Through Wall Fan Kitchen	0
0.08	Through Wall Fan Other Wet Room	0

20.0 Fans, Open Fireplaces, Flues

21.0 Fixed Cooling System	No
22.0 Lighting	
No Fixed Lighting	No

Name	Efficacy	Power	Capacity	Count
Lighting 1	85.00	8	680	5

24.0 Main Heating 1	None
25.0 Main Heating 2	None
26.0 Heat Networks	Space and Water Combined
Space Community Heating	
Distribution Loss	Formal Declaration by Property Developer
Distribution Loss Value	1.05
SAP Code	2308

	Heat Source	Fuel Type	Heating Use	Efficiency	Percentage Of Heat	Heat	Heat Power Ratio	Electrical	Fuel Factor	Efficiency type
Heat source 1	Heat pump	Electricity	Space and Water	324.00	100.00					
Heat source 2	None		Space and Water							
Heat source 3	None		Space and Water							
Heat source 4	None		Space and Water							
Heat source 5	None		Space and Water							

28.0 Water Heating

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

28.1 Showers

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

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	None
Cylinder Stat	No
Cylinder In Heated Space	No
Independent Time Control	No
In Airing Cupboard	No
31.0 Thermal Store	None
34.0 Small-scale Hydro	None
Electricity Generated	0.00
Apportioned	0.00 kWh/Year

Summary for Input Data

Connected to dwelling's electricity meter	Yes
Electricity Generation	Annual

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Property Reference	AB Third Floor End Terrace	**Issued on Date**	15/12/2023
Assessment Reference	Be Green	**Prop Type Ref**	Mid Floor Partial Roof
Property	Ground Floor End Terrace, Sovereign Harbour, Eastbourne		

SAP Rating	84 B	**DER**	3.16	**TER**	12.77
Environmental	98 A	**% DER < TER**			75.25
CO_2 Emissions (t/year)	0.17	**DFEE**	22.22	**TFEE**	25.28
Compliance Check	See BREL	**% DFEE < TFEE**			12.10
% DPER < TPER	50.56	**DPER**	33.98	**TPER**	68.74

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

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

Orientation	Unknown	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Flat, End-Terrace	
Position of Flat	Mid-floor flat	
Which Floor	3	
2.0 Number of Storeys	1	
3.0 Date Built	2023	
3.0 Property Age Band	L	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	N/A	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	No	
Smart gas meter fitted	No	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Basement:	0.00 m	0.00 m²	0.00 m
Ground floor:	13.52 m	55.91 m²	2.80 m
1st Storey:	0.00 m	0.00 m²	0.00 m
2nd Storey:	0.00 m	0.00 m²	0.00 m
3rd Storey:	0.00 m	0.00 m²	0.00 m
4th Storey:	0.00 m	0.00 m²	0.00 m
5th Storey:	0.00 m	0.00 m²	0.00 m
6th Storey:	0.00 m	0.00 m²	0.00 m
7th Storey:	0.00 m	0.00 m²	0.00 m

8.0 Living Area	27.05	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	Steel Frame	Other	0.15	140.00	37.86	29.80	0.00	None	8.06	Calculate Wall 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	Steel frame	0.00	20.00	110.28	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Plasterboard on timber frame	9.00	149.19

10.0 External Roofs

Summary for Input Data

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
External Roof 1	External Flat Roof	Other	0.10	0.00	10.72	10.72	None	0.00	Enter Gross Area	0.00

10.1 Party Ceilings

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Party Ceiling 1	Concrete floor slab, carpeted	100.00	50.36

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Concrete floor slab, carpeted	100.00	55.91

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Window	Manufacturer	Window	Double glazed		Air Filled	0.45	Wood	0.70	1.10

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
East	Window	External Wall 1	East	8.06	0

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	
17.0 Thermal Bridging	User Input	

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E16 Corner (normal)	Independently assessed	2.80	0.00	0.00	No
E18 Party wall between dwellings	Independently assessed	2.80	0.00	0.00	No
E7 Party floor between dwellings (in blocks of flats)	Independently assessed	6.38	0.00	0.00	No
E23 Balcony within or between dwellings, balcony support penetrates wall insulation	Independently assessed	7.24	0.00	0.00	No
E25 Staggered party wall between dwellings	Independently assessed	2.80	0.00	0.00	No
P3 Party wall - Intermediate floor between dwellings (in blocks of flats)	Independently assessed	31.62	0.00	0.00	No
E2 Other lintels (including other steel lintels)		3.84	0.00	0.00	Yes
E3 Sill		3.84	0.00	0.00	Yes
E4 Jamb		8.40	0.00	0.00	Yes
E14 Flat roof		8.72	0.00	0.00	No
E24 Eaves (insulation at ceiling level - inverted)		7.24	0.00	0.00	No
P4 Party wall - Roof (insulation at ceiling level)		1.48	0.00	0.00	No

Y-value	0.05	W/m²K
Description	a	
18.0 Pressure Testing	Yes	
Designed AP_{50}	2.50	m³/(h.m²) @ 50 Pa
Property Tested?	Yes	
Test Method	Blower Door	

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	No
Mechanical Ventilation data Type	Database
Type	Balanced mechanical ventilation with heat recovery
MV Reference Number	500501
Configuration	1
Manufacturer SFP	0.50
Duct Type	Rigid
MVHR Efficiency	90.00
Wet Rooms	1
SFP from Installer Commissioning Certificate	No

Summary for Input Data

elmhurst energy

MVHR System Location	Inside heated envelope (installed exclusively)
Duct Installation Specification	Level 1

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.19	In Room Fan Kitchen	1
0.18	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

21.0 Fixed Cooling System	No

22.0 Lighting

No Fixed Lighting	No

Name	Efficacy	Power	Capacity	Count
Lighting 1	85.00	8	680	5

24.0 Main Heating 1	None
25.0 Main Heating 2	None
26.0 Heat Networks	Space and Water Combined
Space Community Heating	
Distribution Loss	Formal Declaration by Property Developer
Distribution Loss Value	1.05
SAP Code	2308

	Heat Source	Fuel Type	Heating Use	Efficiency	Percentage Of Heat	Heat	Heat Power Ratio	Electrical	Fuel Factor	Efficiency type
Heat source 1	Heat pump	Electricity	Space and Water	324.00	100.00					
Heat source 2	None		Space and Water							
Heat source 3	None		Space and Water							
Heat source 4	None		Space and Water							
Heat source 5	None		Space and Water							

28.0 Water Heating

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

28.1 Showers

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

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	None
Cylinder Stat	No

Summary for Input Data

Cylinder In Heated Space	No	
Independent Time Control	No	
In Airing Cupboard	No	
31.0 Thermal Store	None	
34.0 Small-scale Hydro	None	
Electricity Generated	0.00	
Apportioned	0.00	kWh/Year
Connected to dwelling's electricity meter	Yes	
Electricity Generation	Annual	

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

Property Reference	AB Third Floor Mid Terrace	**Issued on Date**	15/12/2023
Assessment Reference	Be Green	**Prop Type Ref**	Mid Terrace Partial Roof
Property	Ground Floor End Terrace, Sovereign Harbour, Eastbourne		

SAP Rating	85 B	**DER**	2.77	**TER**	10.98
Environmental	98 A	**% DER < TER**			74.77
CO_2 Emissions (t/year)	0.2	**DFEE**	21.73	**TFEE**	24.13
Compliance Check	See BREL	**% DFEE < TFEE**			9.95
% DPER < TPER	49.29	**DPER**	29.76	**TPER**	58.69

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

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

Orientation	Unknown	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Flat, Mid-Terrace	
Position of Flat	Mid-floor flat	
Which Floor	3	
2.0 Number of Storeys	1	
3.0 Date Built	2023	
3.0 Property Age Band	L	
4.0 Sheltered Sides	3	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	N/A	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	No	
Smart gas meter fitted	No	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Basement:	0.00 m	0.00 m²	0.00 m
Ground floor:	9.73 m	75.12 m²	2.80 m
1st Storey:	0.00 m	0.00 m²	0.00 m
2nd Storey:	0.00 m	0.00 m²	0.00 m
3rd Storey:	0.00 m	0.00 m²	0.00 m
4th Storey:	0.00 m	0.00 m²	0.00 m
5th Storey:	0.00 m	0.00 m²	0.00 m
6th Storey:	0.00 m	0.00 m²	0.00 m
7th Storey:	0.00 m	0.00 m²	0.00 m

8.0 Living Area	29.08	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	Steel Frame	Other	0.15	140.00	27.24	13.49	0.00	None	13.75	Calculate Wall 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	Steel frame	0.00	20.00	108.94	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Plasterboard on timber frame	9.00	139.92

10.0 External Roofs

Summary for Input Data

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
External Roof 1	External Flat Roof	Other	0.10	0.00	14.40	14.40	None	0.00	Enter Gross Area	0.00

10.1 Party Ceilings

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Party Ceiling 1	Concrete floor slab, carpeted	100.00	60.72

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Concrete floor slab, carpeted	100.00	75.12

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Window	Manufacturer	Window	Double glazed		Air Filled	0.45	Wood	0.70	1.10

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
East	Window	External Wall 1	East	13.75	0

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	
17.0 Thermal Bridging	User Input	

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E18 Party wall between dwellings	Independently assessed	5.60	0.00	0.00	No
E23 Balcony within or between dwellings, balcony support penetrates wall insulation	Independently assessed	9.73	0.00	0.00	No
P3 Party wall - Intermediate floor between dwellings (in blocks of flats)	Independently assessed	47.46	0.00	0.00	No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	2.96	0.00	0.00	No
E2 Other lintels (including other steel lintels)		6.55	0.00	0.00	Yes
E3 Sill		6.55	0.00	0.00	Yes
E4 Jamb		12.60	0.00	0.00	Yes
E14 Flat roof		12.69	0.00	0.00	No
E24 Eaves (insulation at ceiling level - inverted)		9.73	0.00	0.00	No

Y-value	0.05	W/m²K
Description	a	
18.0 Pressure Testing	Yes	
Designed AP_{50}	2.50	m³/(h.m²) @ 50 Pa
Property Tested?	Yes	
Test Method	Blower Door	

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	No
Mechanical Ventilation data Type	Database
Type	Balanced mechanical ventilation with heat recovery
MV Reference Number	500501
Configuration	1
Manufacturer SFP	0.50
Duct Type	Rigid
MVHR Efficiency	90.00
Wet Rooms	1
SFP from Installer Commissioning Certificate	No
MVHR System Location	Inside heated envelope (installed exclusively)
Duct Installation Specification	Level 1

Summary for Input Data

elmhurst energy

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.19	In Room Fan Kitchen	1
0.18	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

21.0 Fixed Cooling System	No
22.0 Lighting	
No Fixed Lighting	No

Name	Efficacy	Power	Capacity	Count
Lighting 1	85.00	8	680	5

24.0 Main Heating 1	None
25.0 Main Heating 2	None
26.0 Heat Networks	Space and Water Combined
Space Community Heating	
Distribution Loss	Formal Declaration by Property Developer
Distribution Loss Value	1.05
SAP Code	2308

	Heat Source	Fuel Type	Heating Use	Efficiency	Percentage Of Heat	Heat	Heat Power Ratio	Electrical	Fuel Factor	Efficiency type
Heat source 1	Heat pump	Electricity	Space and Water	324.00	100.00					
Heat source 2	None		Space and Water							
Heat source 3	None		Space and Water							
Heat source 4	None		Space and Water							
Heat source 5	None		Space and Water							

28.0 Water Heating

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

28.1 Showers

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

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	None
Cylinder Stat	No
Cylinder In Heated Space	No
Independent Time Control	No

Summary for Input Data

In Airing Cupboard	No	
31.0 Thermal Store	None	
34.0 Small-scale Hydro	None	
Electricity Generated	0.00	
Apportioned	0.00	kWh/Year
Connected to dwelling's electricity meter	Yes	
Electricity Generation	Annual	

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Property Reference	AC Third Floor End Terrace	**Issued on Date**	15/12/2023
Assessment Reference	Be Green	**Prop Type Ref**	Top Floor End Terrace
Property	Ground Floor End Terrace, Sovereign Harbour, Eastbourne		

SAP Rating	84 B	**DER**	3.16	**TER**	11.73
Environmental	97 A	**% DER < TER**			73.06
CO_2 Emissions (t/year)	0.22	**DFEE**	32.31	**TFEE**	32.49
Compliance Check	See BREL	**% DFEE < TFEE**			0.55
% DPER < TPER	45.29	**DPER**	33.68	**TPER**	61.56

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

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

Orientation	Unknown	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Flat, End-Terrace	
Position of Flat	Top-floor flat	
Which Floor	3	
2.0 Number of Storeys	1	
3.0 Date Built	2023	
3.0 Property Age Band	L	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	N/A	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	No	
Smart gas meter fitted	No	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Basement:	0.00 m	0.00 m²	0.00 m
Ground floor:	17.46 m	75.20 m²	2.80 m
1st Storey:	0.00 m	0.00 m²	0.00 m
2nd Storey:	0.00 m	0.00 m²	0.00 m
3rd Storey:	0.00 m	0.00 m²	0.00 m
4th Storey:	0.00 m	0.00 m²	0.00 m
5th Storey:	0.00 m	0.00 m²	0.00 m
6th Storey:	0.00 m	0.00 m²	0.00 m
7th Storey:	0.00 m	0.00 m²	0.00 m

8.0 Living Area	29.17	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	Steel Frame	Other	0.15	140.00	48.89	35.14	0.00	None	13.75	Calculate Wall 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	Steel frame	0.00	20.00	52.61	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Plasterboard on timber frame	9.00	145.88

10.0 External Roofs

Summary for Input Data

elmhurst energy

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
External Roof 1	External Flat Roof	Other	0.10	0.00	75.20	75.20	None	0.00	Enter Gross Area	0.00

10.1 Party Ceilings

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Party Ceiling 1	Concrete floor slab, carpeted	100.00	50.36

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Concrete floor slab, carpeted	100.00	75.20

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Window	Manufacturer	Window	Double glazed		Air Filled	0.45	Wood	0.70	1.10

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
East	Window	External Wall 1	East	13.75	0

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	
17.0 Thermal Bridging	User Input	

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E16 Corner (normal)	Independently assessed	2.80	0.00	0.00	No
E18 Party wall between dwellings	Independently assessed	2.80	0.00	0.00	No
E7 Party floor between dwellings (in blocks of flats)	Independently assessed	6.38	0.00	0.00	No
E23 Balcony within or between dwellings, balcony support penetrates wall insulation	Independently assessed	9.74	0.00	0.00	No
E25 Staggered party wall between dwellings	Independently assessed	2.80	0.00	0.00	No
P3 Party wall - Intermediate floor between dwellings (in blocks of flats)	Independently assessed	18.79	0.00	0.00	No
E14 Flat roof		17.46	0.00	0.00	No
P4 Party wall - Roof (insulation at ceiling level)		18.79	0.00	0.00	No
E2 Other lintels (including other steel lintels)		6.55	0.00	0.00	Yes
E3 Sill		6.55	0.00	0.00	Yes
E4 Jamb		12.60	0.00	0.00	Yes

Y-value	0.05	W/m²K
Description	a	
18.0 Pressure Testing	Yes	
Designed AP_{50}	2.50	m³/(h.m²) @ 50 Pa
Property Tested?	Yes	
Test Method	Blower Door	

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	No
Mechanical Ventilation data Type	Database
Type	Balanced mechanical ventilation with heat recovery
MV Reference Number	500501
Configuration	1
Manufacturer SFP	0.50
Duct Type	Rigid
MVHR Efficiency	90.00
Wet Rooms	1
SFP from Installer Commissioning Certificate	No
MVHR System Location	Inside heated envelope (installed exclusively)

Summary for Input Data

elmhurst energy

Duct Installation Specification	Level 1

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.19	In Room Fan Kitchen	1
0.18	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

21.0 Fixed Cooling System	No

22.0 Lighting

No Fixed Lighting	No

Name	Efficacy	Power	Capacity	Count
Lighting 1	85.00	8	680	6

24.0 Main Heating 1	None
25.0 Main Heating 2	None
26.0 Heat Networks	Space and Water Combined
Space Community Heating	
Distribution Loss	Formal Declaration by Property Developer
Distribution Loss Value	1.05
SAP Code	2308

	Heat Source	Fuel Type	Heating Use	Efficiency	Percentage Of Heat	Heat	Heat Power Ratio	Electrical	Fuel Factor	Efficiency type
Heat source 1	Heat pump	Electricity	Space and Water	324.00	100.00					
Heat source 2	None		Space and Water							
Heat source 3	None		Space and Water							
Heat source 4	None		Space and Water							
Heat source 5	None		Space and Water							

28.0 Water Heating

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

28.1 Showers

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

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	None
Cylinder Stat	No
Cylinder In Heated Space	No

Summary for Input Data

Independent Time Control	No	
In Airing Cupboard	No	
31.0 Thermal Store	None	
34.0 Small-scale Hydro	None	
Electricity Generated	0.00	
Apportioned	0.00	kWh/Year
Connected to dwelling's electricity meter	Yes	
Electricity Generation	Annual	

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

elmhurst energy

Property Reference	AC Third Floor Mid Terrace	**Issued on Date**	15/12/2023
Assessment Reference	Be Green	**Prop Type Ref**	Top Floor Mid Terrace
Property	Ground Floor End Terrace, Sovereign Harbour, Eastbourne		

SAP Rating	84 B	**DER**	3.33	**TER**	12.46
Environmental	98 A	**% DER < TER**			73.27
CO_2 Emissions (t/year)	0.18	**DFEE**	26.05	**TFEE**	28.01
Compliance Check	See BREL	**% DFEE < TFEE**			6.99
% DPER < TPER	45.72	**DPER**	35.70	**TPER**	65.78

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

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

Orientation	Unknown	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	Flat, Mid-Terrace	
Position of Flat	Top-floor flat	
Which Floor	3	
2.0 Number of Storeys	1	
3.0 Date Built	2023	
3.0 Property Age Band	L	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	N/A	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	No	
Smart gas meter fitted	No	

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Basement:	0.00 m	0.00 m²	0.00 m
Ground floor:	7.23 m	55.80 m²	2.80 m
1st Storey:	0.00 m	0.00 m²	0.00 m
2nd Storey:	0.00 m	0.00 m²	0.00 m
3rd Storey:	0.00 m	0.00 m²	0.00 m
4th Storey:	0.00 m	0.00 m²	0.00 m
5th Storey:	0.00 m	0.00 m²	0.00 m
6th Storey:	0.00 m	0.00 m²	0.00 m
7th Storey:	0.00 m	0.00 m²	0.00 m

8.0 Living Area	27.04	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	Steel Frame	Other	0.15	140.00	20.24	12.18	0.00	None	8.06	Calculate Wall 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	Steel frame	0.00	20.00	63.48	0.00	None

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Plasterboard on timber frame	9.00	109.79

10.0 External Roofs

Summary for Input Data

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
External Roof 1	External Flat Roof	Other	0.10	0.00	55.80	55.80	None	0.00	Enter Gross Area	0.00

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Concrete floor slab, carpeted	100.00	55.80

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Window	Manufacturer	Window	Double glazed		Air Filled	0.45	Wood	0.70	1.10

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
East	Window	External Wall 1	East	8.06	0

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

17.0 Thermal Bridging	User Input	

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E18 Party wall between dwellings	Independently assessed	5.60	0.00	0.00	No
E23 Balcony within or between dwellings, balcony support penetrates wall insulation	Independently assessed	9.74	0.00	0.00	No
E23 Balcony within or between dwellings, balcony support penetrates wall insulation	Independently assessed	7.23	0.00	0.00	No
P3 Party wall - Intermediate floor between dwellings (in blocks of flats)	Independently assessed	22.67	0.00	0.00	No
E14 Flat roof		7.23	0.00	0.00	No
P4 Party wall - Roof (insulation at ceiling level)		22.67	0.00	0.00	No
E2 Other lintels (including other steel lintels)		3.84	0.00	0.00	Yes
E3 Sill		3.84	0.00	0.00	Yes
E4 Jamb		8.40	0.00	0.00	Yes

Y-value	0.05	W/m²K
Description	a	

18.0 Pressure Testing	Yes	
Designed AP_{50}	2.50	m³/(h.m²) @ 50 Pa
Property Tested?	Yes	
Test Method	Blower Door	

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	No
Mechanical Ventilation data Type	Database
Type	Balanced mechanical ventilation with heat recovery
MV Reference Number	500501
Configuration	1
Manufacturer SFP	0.50
Duct Type	Rigid
MVHR Efficiency	90.00
Wet Rooms	1
SFP from Installer Commissioning Certificate	No
MVHR System Location	Inside heated envelope (installed exclusively)
Duct Installation Specification	Level 1

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.19	In Room Fan Kitchen	1

0.18	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

21.0 Fixed Cooling System — No

22.0 Lighting

No Fixed Lighting — No

Name	Efficacy	Power	Capacity	Count
Lighting 1	85.00	8	680	6

24.0 Main Heating 1 — None

25.0 Main Heating 2 — None

26.0 Heat Networks — Space and Water Combined

Space Community Heating

Distribution Loss	Formal Declaration by Property Developer
Distribution Loss Value	1.05
SAP Code	2308

	Heat Source	Fuel Type	Heating Use	Efficiency	Percentage Of Heat	Heat	Heat Power Ratio	Electrical	Fuel Factor	Efficiency type
Heat source 1	Heat pump	Electricity	Space and Water	324.00	100.00					
Heat source 2	None		Space and Water							
Heat source 3	None		Space and Water							
Heat source 4	None		Space and Water							
Heat source 5	None		Space and Water							

28.0 Water Heating

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

28.1 Showers

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

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder — None

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

31.0 Thermal Store — None

Summary for Input Data

34.0 Small-scale Hydro	None	
Electricity Generated	0.00	
Apportioned	0.00	kWh/Year
Connected to dwelling's electricity meter	Yes	
Electricity Generation	Annual	

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None