

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	



## Table of Contents

Table of (	Contents	1			
1.0	Introduction	3			
2.0	Planning Policy	4			
3.0	3D Compliance Model	5			
3.1	Geometry	5			
3.2	Climate Data	6			
4.0	Baseline Assessment	7			
4.1	Summary	7			
4.2	Baseline Assessment Results	8			
5.0	'Be Lean' Assessment	8			
5.1	Summary	8			
5.2	Be Lean' Assessment Results	10			
6.0	'Be Clean' Assessment	. 11			
6.1	District Heat Networks	. 11			
6.1	Combined Heat & Power	. 11			
7.0	'Be Green' Assessment	13			
7.1	Summary	13			
7.2	Ground Source Heat Pumps	13			
7.3	Air Source Heat Pumps	13			
7.4	Biomass	14			
7.5	Solar thermal	14			
7.6	Photovoltaics	15			
7.7	'Be Green' Strategy & Results	15			
8.0	Proposed Energy and LZC Technology Strategy	18			
8.1	Recommended Strategy	18			
9.0	Water Management	20			
Appendix	Appendix 1- SAP Reports and BRUKL				





## 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<sub>2</sub> 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.



## 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.



## 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 kg $CO_2/m^2/yr$ , 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<sub>2</sub> 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<sub>2</sub> breakdown of the baseline compliance analysis. The baseline annual CO<sub>2</sub> emissions are 1,766,902 per annum based upon the Target Emission Rates obtained from Part L 2021 software.

Floor Type	Total Area (m²)	Average TER (kg/m²/yr)	CO₂ (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 Base	1,766,902		

Table 4.1 Annual Baseline Energy Use & CO<sub>2</sub> 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	Part L 2021 W/m2K	
	w/m <sup>-</sup> K	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<sub>2</sub> 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 /	Split VRF system with SCOP of 5.05 and SEER of 6.80	Ceiling or wall mounted FCUs	All areas
Cooling	From central ASHP, SCOP = 3.24	Underfloor heating	Residential communal corridors
	MVHR units, SFP = 1.1 W/l.s, HR $\eta$ = 80%	Local MVHR units in ceiling voids	Bar / Bistro & Private Dining
Ventilation	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
		Manual control	Kitchen
Lighting	LED, assumed 110 lms/W	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 (m²)	Average TER (kg/m²/yr)	Average DER / BER (kg/m²/yr)	CO₂ (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
	459,846			
%	73.97%			

 Table 5.3
 Annual 'Be Lean' Regulated energy use & CO2 Emissions



## 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 utilises 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<sub>2</sub> 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.



## 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°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<sub>2</sub> that is emitted by the combustion is comparable to the CO<sub>2</sub> 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 lightstimulated 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<sub>2</sub> 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<sub>2</sub> 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<sup>o</sup> 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<sub>2</sub>/annum, which is a reduction of 74.30% below the baseline figures.

Floor Type	Total Area (m²)	Average TER (kg/m²/yr)	Average DER / BER (kg/m²/yr)	CO₂ (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
	454,497			
9	74.30%			

Table 7.1 Annual 'Be Green' Regulated energy use & CO<sub>2</sub> Emissions



## 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<sub>2</sub> 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<sub>2</sub> 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<sub>2</sub> 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 CO2 Emissions (kg/yr)	CO2 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



## 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 (litre =SUM(column 4)	es/person/day)		102.79
	(6)	Contribution from greywat (litres/person/day)	ter		0
	(7)	Contribution from rainwate (litres/person/day)	Contribution from rainwater (litres/person/day)		
	(8)	Normalisation factor			0.91
	(9)	Total internal water consu = [(5)-(6)-(7)]x(8) (litres/person/day)	umption		93.54
	(10)	External water use			5.0
	(11)	Total water consumption =(9)+(10)(litres/person/d	(Building Regulation	17.K)	98.5

Figure 7.1 – Results of Part G water calculation



## Appendix 1- SAP Reports and BRUKL

## **BRUKL Output Document**

HM Government

Compliance with England Building Regulations Part L 2021

## **Project name**

## **Sovereign Harbour**

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 [m<sup>2</sup>]: 431.33

## The CO<sub>2</sub> emission and primary energy rates of the building must not exceed the targets

Target CO <sub>2</sub> emission rate (TER), kgCO <sub>2</sub> /m <sup>2</sup> annum	2.96	
Building CO <sub>2</sub> emission rate (BER), kgCO <sub>2</sub> /m <sup>2</sup> annum	2.34	
Target primary energy rate (TPER), kWhe∈/m²annum31.35		
Building primary energy rate (BPER), kWh <sub>PE</sub> /m <sup>2</sup> .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	Ua-Limit	Ua-Calc	Ui-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	(57)	-	No high usage entrance doors in building	
Uating = Limiting area-weighted average U-values [W/(m <sup>2</sup> K)] U <sub>1-Calc</sub> = Calculated maximum individual element U-values [W/(m <sup>2</sup> K)]					

 $U_{a-Limit}$  = Limiting area-weighted average U-values [W/(m<sup>2</sup>K)] U<sub>a-Calc</sub> = Calculated area-weighted average U-values [W/(m<sup>2</sup>K)]

\* 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
m³/(h.m²) at 50 Pa	8	2.5

## As designed

### **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

6 8	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(I/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/(I/s)]	HF	R efficiency	
This system	5.05	6.8	0	-	0.8	35	
Standard value	2.5*	5	N/A	N/A	N//	4	
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/(I/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/(I/s)]	<b>HR efficiency</b>		
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/(I/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							

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
Α	Local supply or extract ventilation units
В	Zonal supply system where the fan is remote from the zone
С	Zonal extract system where the fan is remote from the zone
D	Zonal balanced supply and extract ventilation system
Е	Local balanced supply and extract ventilation units
F	Other local ventilation units
G	Fan assisted terminal variable air volume units
Н	Fan coil units
1	Kitchen extract with the fan remote from the zone and a grease filter
NB: I	imiting SEP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.

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

Zone name		SFP [W/(I/s)]										
ID of system type	A	в	С	D	Е	F	G	H	I	HRE	HR efficiency	
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	-	-	-	-	-	-	-	- 1	N/A	
Common Parts Private Dining	-	1.1	-	-	-	-	-	-		-	N/A	
Common Parts WCs	-		0.4	-	-		-				N/A	
Village Hall	-	1.1		-		0 <b>-</b> 0	-		-	. 81	N/A	

General lighting and display lighting	General luminaire	Display light source			
Zone name	Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m <sup>2</sup> ]		
Standard value	95	80	0.3		
Atrium	110	-			
BOH Bar Store	110	-	-		
BOH Commercial Kitchen	110	8 <b>-</b>	ар С		
BOH Comms	110		-		
BOH Fire Store	110	· · · · · · · · · · · · · · · · · · ·	-		
BOH Staff Changing	110				
BOH Staff Room	110				
BOH Store	110	ः ्र <del>ह</del> ्य	, <b>-</b>		
BOH Village Hall Store	110	, 2 <del></del> .	, <b>T</b>		
Circulation	110	,. <del></del> .	,		
Circulation	110	(H	-		
Circulation	110	-	) <del>-</del>		
Common Parts Bar / Bistro	110	, s <del></del> .	्रा <b>स्त</b> ह		
Common Parts Office / Meeting	110	,	, <b>-</b>		
Common Parts Office 01	110	(H	-		
Common Parts Office 02	110		-		
Common Parts Private Dining	110	-	-		
Common Parts WCs	110	2 <b>.</b>	2		
Resi Circulation	110	3 <del>4</del>	-		

General lighting and display lighting	General luminaire	Displa	y light source
Zone name	Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m <sup>2</sup> ]
Standard value	95	80	0.3
Resi Circulation	110		-
Resi Circulation	110	(B	-
Resi Circulation	110	-	-
Resi Circulation	110		
Resi Circulation	110	-	
Resi Circulation	110	2 <b>4</b>	-
Resi Circulation	110	-	
Stairs	110	2 <b>4</b>	÷
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 <sup>2</sup> ]	3074.4	3074.4
External area [m <sup>2</sup> ]	2965.5	2965.5
Weather	SOU	SOU
Infiltration [m <sup>3</sup> /hm <sup>2</sup> @ 50Pa]	3	3
Average conductance [W/K]	1106.71	1123.44
Average U-value [W/m <sup>2</sup> K]	0.37	0.38
Alpha value* [%]	25.16	10

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

## Energy Consumption by End Use [kWh/m<sup>2</sup>]

	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<sup>2</sup>]

	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<sub>2</sub> Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m <sup>2</sup> ]	49.89	42.39
Primary energy [kWh <sub>PE</sub> /m <sup>2</sup> ]	23.42	31.35
Total emissions [kg/m <sup>2</sup> ]	2.34	2.96

## **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
70	Secure Residential Institutions
78 22	Residential Spaces Non-residential Institutions: Community/Day Centre
	Non-residential Institutions: Libraries, Museums, and Galleries Non-residential Institutions: Education
	Non-residential Institutions: Crown and County Courts General Assembly and Leisure, Night Clubs, and Theatres
	Others: Passenger Terminals Others: Emergency Services Others: Miscellangous 24br Activities
	Others: Car Parks 24 hrs Others: Stand Alone Utility Block

Н	VAC Sys	stems Per	rformanc	е						
Syst	tem 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 m	ulti-split sy	stem, [HS]	ASHP, [HF1	[] Electricit	y, [CFT] Ele	ctricity	24		8
	Actual	117.4	149.6	6.9	8.6	5.1	4.71	4.83	5.05	6.8
1	Notional	154	21.9	15.4	1.3	7.3	2.78	4.63	-	
[ST]	Split or m	ulti-split sy	stem, [HS]	ASHP, [HF1	[] Electricit	y, [CFT] Ele	ctricity		54 17	
	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 he	eating using	g water: floo	or heating,	[HS] Direct	or storage	electric hea	ater, [HFT] I	Electricity,	[CFT] Electi
	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 m	ulti-split sy	stem, [HS]	ASHP, [HF]	[] Electricit	y, [CFT] Ele	ctricity			
	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 he	eating using	g water: floo	or heating,	[HS] ASHP,	[HFT] Elec	tricity, [CF	[] Electricit	y	
	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 Heatin	g or Coolin	g					2		
	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 = Heating fuel type HFT CFT = Cooling fuel type



Assessment Reference         Be Green         Prop Type Ref         First Floor End Tenses           Progerty         Ground Floor End Tenses. Sovereign Hatsour, Eastburne         5.07         12.11         12	Property Reference	AB	AB First Floor End Terrace Issued on D						l on Date	15/1	2/202	3			
Property         Cocund Floor End Terrace, Soverleigh Hattour, Eastibuurne         St. 10         TER         52.11           SAF Rating         64.8         DEX         5.13         TER         72.15           Compliance Unleak         69.4         DEX         5.0 ER STER         72.15         72.15           Compliance Unleak         See BREE         3.0 DFEE         25.2         TFEE         72.35           Compliance Unleak         See BREE         3.0 DFEE         25.55         73.93         73.93           X DER < TPER	Assessment Reference	Ве	Green					Prop	o Type_F	Ref	First Floo	or End Te	errace		
AP Raining         H4 8         DER         5.13         TER         12.11           Environmental         BB A         30 DER 5 TER         74.15         74.15           COLEmissions (type)         0.17         DPEE         20.52         TPEE         73.8           COLEmissions (type)         0.17         DPEE         20.52         TPEE         73.8           COLEMISSIONS (type)         0.17         DPEE         20.52         TPEE         73.8           So DPER State         42.30         DPER         53.88         TPER         05.15           Assessor Details         Mr. George Kont         Assessor DB         DE07-0001         DE07-0001           Clinat         ND         Transaction Type         6         DE07-0001         DE07-0001           Clinat         ND         Transaction Type         6         DE07-0001         DE07-0001           Clinat         ND         Transaction Type         10         DE07-0001         DE07-0001           Clinat         ND         Transaction Type         10         DE07-001         DE07-001           2.0 Number Flat         ND         Transaction Type         10         DE07-001         DE07-001           2.0 Number of Storeys	Property	Gro	und Floor	End Terrac	e, Sover	reign Harbour, E	astbour	ne							
BAP Rang         64 B         DEx         0.13         Text         (2.11           Comparing Check         99 A         VolDEx TEX         (7.15)         (7.15)           Comparing Check         See BREL         % DEX TEX         (7.8)         (7.8)           Comparing Check         See BREL         % DEX TEX         (7.8)         (7.8)           Assessor Details         Mr. George Kent         Assessor D         (7.8)         (7.8)           Assessor Details         Mr. George Kent         Assessor D         (7.8)         (7.8)           Committion         Unknown         (7.8)         (7.8)         (7.8)           Property Tenture         NO         (7.8)         (7.8)         (7.8)           Position of Ful         Mde-floor Bai         (7.8)         (7.8)         (7.8)           Which Floor         1         (7.8)         (7.8)         (7.8)         (7.8)           2.0 Number of Storys         1         (7.8)         (7.8)         (7.8)         (7.8)           3.0 Diate Bailt         (7.2)         (7.8)         (7.8)         (7.8)         (7.8)           3.0 Diate Storys         1         (7.8)         (7.8)         (7.8)         (7.8)           3.0															
Environmental         68.4         Va DER XTER         74.15           CO-Demissione (typer)         0.17         DPEE         20.52         TTEE         22.15           Compliance Check         Exe BREL         Ya DPEE < TTEE	SAP Rating				84 B		DER		3.13			TER			
CO. Enaisons (typer)         0.17         DFEE         20.52         TFE         22.15           Compliance Check         See BREIL         '% DFEE < TFEE	Environmental				98 A		% DER < TER					74.			
Comparison Chook         See BREL         V DPER STORY         7.38           X DPER STDER         43.30         DPER         \$33.08         TPER         66.15           Assessor Details         Mr. George Kent         Assessor D         B.097-0001         B.097-0001           SUMMARY FOR INPUT DATA FOR: New Build (As Designed)         Orientation         Property Tenture         NO         Property Tenture         B.097-0001           Transaction Type         B         B.007-0001         B.007-0001         B.007-0001         B.007-0001           Transaction Type         B         B.007-0001         B.007-0001         B.007-0001         B.007-0001           Transaction Type         B         B.007-0001         B.007-0001         B.007-0001         B.007-0001           Transaction Type         B         Suburban         Property Tenture         B.007-0001         B.007-0001           10 Property Type         Flat, End-Terrace         Prodot of Storys         1         Storys         B.007-0001           2.0 Number of Storys         1         Storys         1         Storys         B.007-0001           3.0 Property Age Band         L         C.0000         Storys         Storys         Storys         Storys         Storys         Storys	CO <sub>2</sub> Emissions (t/year)				0.17		DFEE		20.5	2		TFEE			
SobeEk - TPER         Ba.30         DPER         33.68         TPER         65.15           Assessor Dubititio         Mr. George Kent         Assessor ID         BG97-0001           Citent         State	Compliance Check				See Bl	REL	% DFE	E < TFEE					7	.38	
Assessor Dutable       Mr. George Kent       Assessor ID       BQ37-0001         Client          BQ37-0001         SUMMARY FOR INPUT DATA FOR: New Build (As Dasigned)             Orientation       Unknown              Property Tenture       ND	% DPER < TPER				48.30		DPER		33.6	8		<b>FPER</b>	6	5.15	
Otion           SUMMARY FOR INPUT DATA FOR: New Build (As Designed)           Orientation         Unknown           Property Tenture         ND           Transaction Type         6           10 Property Type         Flat, End-Farance           Position of Flat         Mod-ficer flat           Vinknown         Position of Flat           20 Number of Storeys         1           3.0 Date Built         2023           3.0 Date Built         2023           3.0 Date Built         2023           3.0 Property Age Band         L           4.0 Shothered Stores         2           5.0 Sunlight/Shade         Average or unknown           6.0 Storey Mage Band         No           7.0 Measurements         MA           Via Bander         No           7.0 Measurements         No           7.0 Measurements         Madard           7.0 Measurements         No           7.0 Measurements         Zind Storey:         0.00 m <sup>+1</sup> 0.00 m <sup>+1</sup> 8.0 Living Area         Zind Storey:         0.00 m <sup>+1</sup> 0.00 m <sup>+1</sup> 0.00 m <sup>+1</sup> 8.0 Living Area         Zind Storey:         0.00 m <sup>+1</sup> 0.00 m <sup>+1</sup> 0.00 m <sup>+1</sup>	Assessor Details	Mr. Geo	rge Kent									Assessoi	r ID E	Q97-0	0001
SUMMARY FOR INPUT DATA FOR: Now Build (As Dosigned)         Orientation       Unknown         Property Tenture       ND         Transaction Type       6         Tansaction Type       6         Terrain Type       Suburban         Postion of Flat       Mid-floor flat         Which Floor       1         2.0 Number of Storoys       1         3.0 Date Built       2023         3.0 Property Age Band       L         4.0 Sheltered Sides       2         5.0 SinglifytBhade       Average or unknown         Formal Mass       N/A         Thermal Mass       N/A         Visit Storey:       0.00 m       0.00 m'       0.00 m'         Smart electricity Tariff       Standard       No       2.80 m i       2.80 m i         7.0 Measurements       Heat Loss Perimeter       Internal Floor Area       Average Storey Height         7.0 Measurements       Internal Floor Area       Average Storey Height         8.0 Living Area       27.05       m²       3.00 m       0.00 m'       0.00 m         8.0 Living Area       27.05       m²       Mas       No       3.80 m i       <	Client														
Orientation       Unknown         Property Tonkure       ND         Transaction Type       6         Transaction Type       Suburban         Transaction 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 Sheftered Sides       2         5.0 SunlightNade       Average or unknown         6.0 Thermal Mass       Predise calculation         Thermal Mass       NaA         Smart gas meler filted       No         Storey:       0.00 m       0.00 m*         Storey:       0.00 m       0.00 m*       0.00 m*         Storey:       0.00 m       0.00 m*       0.00 m*         Smart gas meler filted       No       0.00 m*       0.00 m*         Storey:       0.00 m       0.00 m*       0.00 m*       0.00 m*	SUMMARY FOR INPUT	DATA F	OR: Nev	w Build (A	As Des	igned)									
Property Tenture         ND           Transaction Type         6           Tarnsaction Type         Suburban           Tarnain Type         Suburban           Tarnain Type         Suburban           Postion of Flat         Mid-floor flat           Postion of Flat         Mid-floor flat           Which Floor         1           2.0 Number of Storoys         1           3.0 Date Bult         202.3           3.0 Property Age Band         L           4.0 Shelared Sides         2           5.0 Sundig/NSade         Average or unknown           Formal Mass Parameter         Precise calculation           Thermal Mass         N/A           Smart electricity meter fitted         No           Smart gas meter fitted         No           Smart gas meter fitted         No           Smart gas meter fitted         No           Storogy:         0.00 m         0.00 m'         0.00 m'           Storogy:         0.00 m         0.00 m'         0.00 m'         0.00 m'           Storogy:         0.00 m         0.00 m'         0.00 m'         0.00 m'         0.00 m'           Storogy:         0.00 m         0.00 m'         0.00 m'         0.0	Orientation				Unkno	wn									
Transaction Type       6         Terrain Type       Suburban         1.0 Property Type       Field. End-Terrace         Position of Flat       Mid-floor flat         Which Floor       1         2.0 Number of Storays       1         3.0 Date Built       2023         3.0 Property Age Band       L         4.0 Shelterod Stoles       2         5.0 Sunlight/Shade       Average or unknown         6.0 Thermal Mass Parameter       Precise calculation         Thermal Mass       Na         Smart electricity Tariff       Standard         Smart electricity retiff       Standard         Smart seter fitted       No         Smart seter fitted       No         7.0 Electricity Tariff       Standard         Growert Moors       0.00 m         Smart set fitted       No         7.0 Electricity Tariff       Standard         Stand retifitted       No         7.0 Electricity Tariff       Standard         Stand retifitted       No         7.0 Electricity Tariff       Standard         Stand retifitted       No         7.0 Electricity Tariff       Standard         Stand Storopy:       0.00 m	Property Tenture Transaction Type Terrain Type 1.0 Property Type Position of Flat Which Floor 2.0 Number of Storeys 3.0 Date Built			ND											
Terrain Type       Suburban         1.0 Property Type       Fial, End-Terrace         Position of Fial       Mid-floor flat         Which Floor       1         2.0 Number of Storeys       1         3.0 Date Built       2023         3.0 Date Built       2023         3.0 Property Age Band       L         4.0 Sheltered Sides       2         5.0 SunlightShele       Average or unknown         6.0 Thermal Mass Parameter       Precise calculation         Thermal Mass       N/A         Smart electricity Tariff       Standard         Smart electricity rariff       Standard         Smart electricity meter fitted       No         Smart electricity and floor:       0.00 m         Smart electricity and floor:       0.00 m         Standard       2.80 m         Smart electricity and floor:       0.00 m         Standard       0.00 m         Standard <td< td=""><td>6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>				6											
1.0 Property Type       Flat. End-Terrace         Position of Flat       Mid-floor flat         Which Floor       1         2.0 Number of Storeys       1         3.0 Property Age Band       2023         4.0 Shothered Sides       2         5.0 Sunlight/Shade       Average or unknown         6.0 Thermal Mass Parameter       Precise calculation         Thermal Mass Parameter       Precise calculation         Thermal Mass Parameter       N/A         Via Electricity Tariff       Standard         Smart electricity meter filted       No         Smart electricity meter filted       No         7.0 Electricity Tariff       Standard         Standard       0.00 m²       0.00 m²         2.00 m       0.00 m²       0.00 m²         2.00 m       0.00 m²       0.00 m²         1.1 Storey:       0.00 m       0.00 m²       0.00 m²         2.00 m       0.00 m²       0.00 m²       0.00 m²       0.00 m²         3.0 External Walls       27.05       m²       0.00 m       0.00 m²       0.00 m				Suburt	ban										
Position of Flat Which Floor I O Description You Position of Flat Which Floor I O Description Yue Position Yue Position Yue Position Md-floor I O Description Yue Construction Construction Construction Vue PasterFood Construction Vue PasterFood Construction Vue PasterFood Construction Vue PasterFood Vue Pa				Flat, E	nd-Terrace										
Which Floor         I           2.0 Number of Storeys         I           3.0 Date Built         2023           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           7.0 Electricity Tariff         Standard           Smart electricity meter fitted         No           Smart electricity meter fitted         No           7.0 Measurements         Heat Loss Perimeter         Average Storey Height           Ground floor:         13.52 m         5.91 m²         2.80 m           7.0 Measurements         No         0.00 m²         0.00 m²         0.00 m²           7.0 Measurements         0.00 m²         0.00 m²         0.00 m²         0.00 m²         0.00 m²           8.0 Living Area         27.05         m²         0.00 m				Mid-flo	or flat										
2.0 Number of Storeys         1           3.0 Date Built         2023           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           7.0 Electricity Tariff         Standard           Smart gas meter fitted         No           Smart gas meter fitted         No           7.0 Measurements         Heat Loss Perimeter         Internal Floor Area         Average Storey Height           Ground floor:         13.6 Zm         55.91 m²         2.00 m         0.00 m           7.0 Measurements         Heat Loss Perimeter         Internal Floor Area         Average Storey Height           Ground floor:         13.6 Zm         55.91 m²         2.00 m         0.00 m           3.1 Basement:         0.00 m         0.00 m²         0.00 m         0.00 m         0.00 m           9.0 External Walls         Description         Type         Construction         Wim/Y (klum/Y Ground Mass         None         None         None         Shelter         None           9.1 External Walls         Description <td>1</td> <td></td>				1											
3.0 Date Built  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  Thermal Mass Parameter  Thermal Mass N/A  NA  N/A  NA  KJ/m*K  7.0 Electricity Tariff  Standard No  Smart gas meter fitted No  7.0 Measurements  Heat Loss Perimeter Internal Floor Area Average Storey Height 0.00 m  0.0				1											
A De Property Age Band 4.0 Sheltered Sides 2 5.0 Sunlight/Shade Average or unknown 6.0 Thermal Mass Parameter Precise calculation Thermal Mass Parameter Mited No Smart gas meter fitted No Smart gas meter fitted No T.0 Measurements Heat Loss Perimeter Internal Floor Area Average Storey Height Ground floor: 13.52 m 0.00 m <sup>2</sup> 0.00 m 2.00 0 m 0.00 m <sup>2</sup> 0.00 m 8.0 Living Area 227.05 m <sup>2</sup> 9.0 External Walls Description Type Construction UValue Kappa Gross Nett Area Shelter Openings Area Calculation 1.15 Mo.00 20.00 m 0.00 m <sup>2</sup> 0.00 m				2023											
A O Shelter of Sides 2	3.0 Property Age Band				L										
Average or unknown       Average or unknown         6.0 Thermal Mass Parameter       Precise calculation         Thermal Mass       N/A         7.0 Electricity Tariff       Standard         Smart electricity meter fitted       No         Smart gas meter fitted       No         7.0 Measurements       Heat Loss Parimeter       Internal Floor Area       Average Storey Height         Ground floor:       135 2 m       0.00 m²       0.00 m²       2.00 m         7.0 Measurements       Heat Loss Parimeter       Internal Floor Area       Average Storey Height       2.00 m²         7.0 Measurements       Test Storey:       0.00 m       0.00 m²       0.00 m²       2.00 m         3rd Storey:       0.00 m       0.00 m²       0.00 m²       0.00 m       0.00 m²       0.00 m         3rd Storey:       0.00 m       0.00 m²       0.00 m²       0.00 m       0.00 m²       0.00 m         8.0 Living Area       27.05       m²       0.00 m²       0.00 m²       0.00 m²       0.00 m       0.00 m²	4.0 Sheltered Sides				2										
Construction         Interview         Precise calculation         kJm*K           6.0 Thermal Mass         N/A         kJm*K           7.0 Electricity Tariff         Standard         kJm*K           Smart electricity meter fitted         No         No           Smart gas meter fitted         No         000 m²         000 m²           7.0 Measurements         Heat Loss Perimeter         Internal Floor Area         Average Storey Height           Basement:         0.00 m         0.00 m²         0.00 m²         0.00 m²           7.0 Measurements         Heat Loss Perimeter         Internal Floor Area         Average Storey Height           Basement:         0.00 m²         0.00 m²         0.00 m²         0.00 m²           13 S2 m         55.91 m²         2.80 m         2.80 m         2.80 m           2 nd Storey:         0.00 m         0.00 m²         0.00 m         0.00 m²         0.00 m           3 d Storey:         0.00 m         0.00 m²         0.00 m²         0.00 m         0.00 m²         0.00 m           8.0 Living Area         27.05         m²         0.00 m         8.00 calculate Kapaa         Gross Net Area Shelter         Shelter         None         8.05 Calculate Kalake Kalakarea         None         8.05 Calculate Kalake	5.0 Sunlight/Shade				Average or unknown										
Thermal Mass       Inductor         Thermal Mass       N/A         KJ/m <sup>2</sup> K         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         Ground floor:       13.52 m       55.91 m²       2.80 m         2.1 Storey:       0.00 m       0.00 m²       0.00 m         3.1 Storey:       0.00 m       0.00 m²       0.00 m         3.1 Storey:       0.00 m       0.00 m²       0.00 m         3.1 Storey:       0.00 m       0.00 m²       0.00 m         3.0 External Walls       Construction       UValue Kappa Gross Nett Area Shelter (Wm <sup>2</sup> K) (KJ/m	6 0 Thermal Mass Parameter				Precise calculation										
Internal interest       Kom it is it is the internal Floor Area of the inter of the internal Floor Area of the interna	Thermal Mass				NI/A						k	l/m²k			
Standard       Standard         Smart electricity meter fitted       No         Smart gas meter fitted       No         7.0 Measurements         Heat Loss Perimeter Internal Floor Area Ground floor: 13.52 m 55.91 m²       Average Storey Height 0.00 m²         7.0 Measurements       Heat Loss Perimeter Internal Floor Area Ground floor: 13.52 m 55.91 m²       Average Storey Height 0.00 m²         7.0 Measurements       Its Storey: 0.00 m 0.00 m²       0.00 m²         2nd Storey: 0.00 m 0.000 m²       0.00 m²       0.00 m         2nd Storey: 0.00 m 0.000 m²       0.00 m       0.00 m²         Storey: 0.00 m 0.000 m²       0.00 m       0.00 m         Sth Storey: 0.00 m 0.000 m²       0.00 m       0.00 m         Sth Storey: 0.00 m 0.000 m²       0.00 m       0.00 m         Sth Storey: 0.00 m 0.000 m²       0.00 m       0.00 m         8.0 Living Area       27.05       m²       0.00 m²       0.00 m         9.0 External Walls       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 Kappa Orea       None       8.06 Calculate Wall Area         9.1 Internal Walls       Plasterboard on timber frame       0.00       20.0															
Smart electricity meter fitted No Smart gas meter fitted No T.0 Measurements Heat Loss Perimeter Internal Floor Area Average Storey Height Basement: 0.00 m 0.00 m <sup>2</sup> 0.00 m 0.00 m <sup>2</sup> 0.00 m 2.00 Storey: 0.00 m 0.00 m <sup>2</sup> 0.00 m	7.0 Electricity Tariff				Standa	ard									
Smart gas meter fitted       No         7.0 Measurements       Heat Loss Perimeter Internal Floor Area Average Storey Height Ground floor:         Ground floor:       13.52 m       55.91 m²       2.80 m         1st Storey:       0.00 m       0.00 m²       0.00 m²         2nd Storey:       0.00 m       0.00 m²       0.00 m         3rd Storey:       0.00 m       0.00 m²       0.00 m         3rd Storey:       0.00 m       0.00 m²       0.00 m         3rd Storey:       0.00 m       0.00 m²       0.00 m         6th Storey:       0.00 m       0.00 m²       0.00 m         6th Storey:       0.00 m       0.00 m²       0.00 m         9.0 External Walls       Image: Storey:       0.00 m       0.00 m²       0.00 m         9.1 Party Walls       Image: Steel Frame       Other       0.15 140.00 37.88 28.00       None       8.06 Calculate Wall Area         9.1 Party Walls       Image: Steel Frame       Other       0.00       20.00       110.28       None       None         9.2 Internal Walls       Image: Steel Frame       Construction       U-Value Kappa (Mm*K) (Km/m*K) (Mm*K) (M	Smart electricity meter fitte	d			No										
Neasurements       Neasurements       None       Average Storey Height 0.00 m <sup>2</sup> Ground floor: 13.52 m       Storey: 0.00 m <sup>2</sup> 0.00 m <sup>2</sup> 1st Storey:       0.00 m       0.00 m <sup>2</sup> 0.00 m         2nd Storey:       0.00 m       0.00 m <sup>2</sup> 0.00 m         2nd Storey:       0.00 m       0.00 m <sup>2</sup> 0.00 m         2nd Storey:       0.00 m       0.00 m <sup>2</sup> 0.00 m         3rd Storey:       0.00 m       0.00 m <sup>2</sup> 0.00 m         4th Storey:       0.00 m       0.00 m <sup>2</sup> 0.00 m         6th Storey:       0.00 m       0.00 m <sup>2</sup> 0.00 m         8.0 Living Area       27.05       m <sup>2</sup> 0.00 m         9.0 External Walls       External Walls       Steel Frame       Other       UValue       Kappa       Gross       Nente       None       8.06       Calculation         9.1 Party Walls       External Walls       Output       Construction       U-Value       Kappa       Gross       None       8.06       Calculation         9.2 Internal Walls       Edge Sealing       Steel frame       Other       0.00       37.85       29.90       0.00       None	Smart gas meter fitted				No										
Basement:         0.00 m         0.00 m²         0.00 m²           Ground floor:         13:52 m         55.91 m²         2.80 m           1 st Storey:         0.00 m         0.00 m²         0.00 m²           2nd 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           6th Storey:         0.00 m         0.00 m²         0.00 m           8.0 Living Area         27.05         m²         0.00 m           9.0 External Walls         Description         Type         Construction         U-Value         Kappa         Greas         None         8.06         Calculate Wall Area           9.1 Party Walls         Description         Type         Construction         U-Value         Kappa         Area         Shelter         Shelter         Shelter         Shelter         Shelter         Shelter         Shelter         None         8.06 <t< td=""><td>7.0 Measurements</td><td></td><td></td><td></td><td></td><td></td><td>Hoat</td><td></td><td>rimoto</td><td>r Inf</td><td>tornal Elo</td><td>or Aroa</td><td>Avorac</td><td>o Sto</td><td>rov Hoight</td></t<>	7.0 Measurements						Hoat		rimoto	r Inf	tornal Elo	or Aroa	Avorac	o Sto	rov Hoight
Ground noer:         13.52 m         55.91 m²         2.80 m           1 st Storey:         0.00 m         0.00 m²         0.00 m           2rd Storey:         0.00 m         0.00 m²         0.00 m           3rd 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           6th Storey:         0.00 m         0.00 m²         0.00 m           6th Storey:         0.00 m         0.00 m²         0.00 m           9.0 External Walls         0.00 m²         0.00 m         0.00 m²         0.00 m           9.1 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         Kappa         Area         Shelter         Shelter         Shelter         Shelter         Shelter         Type           9.1 Party Walls         Description         Type         Construction         U-Value         Kappa         Area         Shelter         Shelter         Shelter <td></td> <td></td> <td></td> <td></td> <td></td> <td>Basement</td> <td>neat</td> <td>0.00 m</td> <td></td> <td></td> <td>0.00 m</td> <td>ווים אופם ז<sup>2</sup></td> <td>Averag</td> <td>0.00</td> <td>m</td>						Basement	neat	0.00 m			0.00 m	ווים אופם ז <sup>2</sup>	Averag	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           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           8.0 Living Area         27.05         m²         0.00 m           9.0 External Walls         Description         Type         Construction         U-Value         Kappa         Gross Nett Area         Shelter         Openings Area Calculation           9.0 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         Kappa         Area         Shelter         Shelter         Shelter         Shelter         Shelter         None         8.06         Calculate Wall Area           9.1 Party Walls         Description         Type         Construction         U-Value         Kappa         Area         <						Ground floor: 1st Storey:		13.52 r 0.00 m	ท เ		55.91 r 0.00 m	ກ² າ²		2.80 0.00	m 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         6th Storey:       0.00 m       0.00 m²       0.00 m         8.0 Living Area       27.05       m²       0.00 m         9.0 External Walls       Description       Type       Construction       U-Value       Kappa       Gross       Nett Area Shelter       Openings Area Calculation         9.0 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       Kappa       Area       Shelter       Shelter       Shelter       Shelter       Shelter       Shelter       Shelter       Shelter       Shelter       Mone       8.06       Calculate Wall Area         9.1 Party Wall 1       Filled Cavity with Edge Sealing       Steel frame       0.00       20.00       110.28       0.00       None         9.2 Internal Wall 1       Plasterboard on timber frame       9.00       149.19       149.19       149.19       149.19 <td< td=""><td></td><td></td><td></td><td></td><td></td><td>2nd Storey: 3rd Storey:</td><td></td><td>0.00 m</td><td>1</td><td></td><td>0.00 m</td><td>1<sup>2</sup> 1<sup>2</sup></td><td></td><td>0.00</td><td>m m</td></td<>						2nd Storey: 3rd Storey:		0.00 m	1		0.00 m	1 <sup>2</sup> 1 <sup>2</sup>		0.00	m m
Sth Storey:     0.00 m     0.00 m²     0.00 m²       6th Storey:     0.00 m     0.00 m²     0.00 m²       7th Storey:     0.00 m     0.00 m²     0.00 m²       8.0 Living Area     27.05     m²       9.0 External Walls     Description     Type     Construction       External Wall 1     Steel Frame     Other     U-Value     Kappa     Gross Nett Area Shelter     Shelter     Openings Area Calculation       9.1 Party Walls     Description     Type     Construction     U-Value     Kappa     Area     Shelter     Shelter     Shelter     Openings Area Calculation       9.1 Party Walls     Description     Type     Construction     U-Value     Kappa     Area     Shelter     Shelter     Shelter     Shelter     Shelter     Shelter     Shelter     Mone     None     8.06     Calculate Wall Area       9.1 Party Wall 1     Filled Cavity with Edge Sealing     Steel frame     0.00     20.00     110.28     0.00     None       9.2 Internal Wall 1     Plasterboard on timber frame     9.00     149.19     149.19						4th Storey:		0.00 m	1		0.00 m	1 <sup>2</sup>		0.00	m
7th Storey:       0.00 m       0.00 m²       0.00 m²         8.0 Living Area       27.05       m²         9.0 External Walls						5th Storey: 6th Storey:		0.00 m 0.00 m	ו ו		0.00 m 0.00 m	1² 1²		0.00	m m
8.0 Living Area       27.05       m²         9.0 External Walls       Description       Type       Construction       U-Value Kappa (Wim*K) (kJ/m*K) Area(m²) (m²) Res 29.80       Shelter None       Shelter Valuate Wall Area         9.1 Party Walls       Description       Type       Construction       U-Value Kappa (Wim*K) (kJ/m*K) (kJ/m*K) (kJ/m*K) (kJ/m*K)       Area Shelter Wall Area       Shelter Valuate Wall Area         9.1 Party Walls       Description       Type       Construction       U-Value Kappa (W/m*K) (kJ/m*K) (kJ/m*K)       Area Shelter Mall Area         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 (M/m*K) (kJ/m*K)       Area (m²) (kJ/m*K)       None       Area (m²) (kJ/m*K)         9.1 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/m*K) (kJ/m*K)       Area (m²) (kJ/m*K) (kJ/m*K)       149.19         9.00       Internal Wall 1       Plasterboard on timber frame       9.00       149.19						7th Storey:		0.00 m	1		0.00 m	1 <sup>2</sup>		0.00	m
9.0 External Walls       Type       Construction       U-Value (W/m²K) (kJ/m²K)       Gross (Met Area Shelter (m²))       Shelter (m²)       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) (kJ/m²K) (kJ/m²K)       Area (m²) (W/m²K) (kJ/m²K)       Shelter (m²) (M/m²K) (kJ/m²K)       Shelter (m²) (M/m²K) (kJ/m²K)       Shelter (m²) (K/m²K)       Shelter (M²) (KJ/m²K)       Shelter	8.0 Living Area				27.05						m	1 <sup>2</sup>			
Description     Type     Construction     U-Value (Kappa 0.15     Gross NetLarea Shelter (KJ/m²K) (M²)     Shelter Res     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 (Kappa 0.00     Area (m²) (m²)     Area (m²)     Shelter     Shelter     Shelter     Shelter     Shelter     Type       9.1 Party Walls     Description     Type     Construction     U-Value (Kappa 0.00     Area (m²)     (m²)     Res     Shelter     Shelter     Shelter     Shelter     Shelter     Shelter     None     8.06     Calculate Wall Area       9.1 Party Wall 1     Filled Cavity with Steel frame Edge Sealing     Steel frame     0.00     20.00     110.28     0.00     None       9.2 Internal Walls     Description     Construction     Kappa (KJ/m²K)     Area (m²)     (KJ/m²K)     9.00     149.19       9.2 Internal Wall 1     Plasterboard on timber frame     9.00     149.19     9.00     149.19	9.0 External Walls														
External want     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     Kappa     Area     Shelter     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)     Kappa (kJ/m²K)     Area (m²) (kJ/m²K)       Internal Wall 1     Plasterboard on timber frame     9.00     149.19	Description Typ	De	Const	ruction			U-Value (W/m <sup>2</sup> K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openin	gs Are	a Calculation Type
Description       Type       Construction       U-Value (Kappa (W/m²K) (kJ/m²K)		ei Franîê	Uther				U. 15	140.00	31.00	29.00	0.00	inone	8.06	Caic	uiate wall Area
Party Wall 1     Filled Cavity with Steel frame Edge Sealing     (W/m²K) (kJ/m²K) (m²) Res 0.00     Res 0.00       9.2 Internal Walls       Description     Construction (kJ/m²K) 9.00     Area (m²) (kJ/m²K) 9.00       Internal Wall 1     Plasterboard on timber frame     9.00	Description	Туре		Construc	tion					U-Value	Kappa	Area	Shelter	s	helter
9.2 Internal Walls       Description     Construction     Kappa (m²) (kJ/m²K)       Internal Wall 1     Plasterboard on timber frame     9.00     149.19	Party Wall 1	Filled C Edge S	avity with ealing	Steel fram	ne					<b>(W/m²K)</b> 0.00	<b>(kJ/m²K)</b> 20.00	<b>(m²)</b> 110.28	<b>Res</b> 0.00		None
Description     Construction     Kappa (m²) (kJ/m²K)       Internal Wall 1     Plasterboard on timber frame     9.00     149.19	9.2 Internal Walls			Const.											A mag ( 2)
Internal Vvali 1 Plasterboard on timber frame 9.00 149.19	Description			Constructi	ion								Ka (kJ	ippa /m²K)	Area (m²)
	Internal Wall 1			Plasterboa	rd on tim	iber frame							9	.00	149.19



D	escription		Const	truction						Карра	Area (m²)
Р	arty Ceiling 1		Concr	ete floor slab, carpeted						( <b>KJ/M<sup>2</sup>K)</b> 100.00	55.91
11.1	Party Floors										
D	Description Storey		Storey Index	Construction						Kappa (kJ/m²K)	Area (m²)
P	arty Floor 1		Lowest occupied	Concrete floor slab, carpeted						100.00	55.91
12.0	Opening Types										
D	escription	Data Source	Туре	Glazing		Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
N	/indow	Manufacturer	Window	Double glazed			Air Filled	0.45	Wood	0.70	1.10
13.0 (	Openings	Opening Tu		Location		Oriont	otion	A	(ma <sup>2</sup> )	Di	tah
E	ast	Window	he	External Wall 1		Ea	st	8.0	6 6	FI	0
14.0	Conservatory			None							
15.0	Draught Proofing			100				%			
16.0	Draught Lobby			No				i i			
	<u> </u>										
17.0 <sup>-</sup> 17 1 1	Thermal Bridging			User Input							
В	ridge Type			Source Type	Length	Psi	Adjusted	Reference	:		Imported
E	16 Corner (normal) 18 Party wall betwee	n dwellings		Independently assessed	2.80 2.80	0.00	0.00 0.00				No
Ē	7 Party floor betweer	n dwellings (in block	s of flats)	Independently assessed	12.56	0.00	0.00				No
E SI	upport penetrates wa	ll insulation	balcony	independently assessed	14.48	0.00	0.00				NO
E P	25 Staggered party w 3 Party wall - Interme	vall between dwellin ediate floor betweer	ngs n dwellings	Independently assessed Independently assessed	2.80 50.42	0.00 0.00	0.00 0.00				No No
(ii F	n blocks of flats) 2 Other lintels (includ	ling other steel linte	els)		3 84	0.00	0.00				Yes
Ē	3 Sill		,		3.84	0.00	0.00				Yes
-	4 Janib				0.40	0.00	0.00				165
Y.	-value			0.05				W/m²K			
D	escription			а							
18.0	Pressure Testing			Yes							
D	esigned AP50			2.50				m³/(h.m	²) @ 50 P	а	
Р	roperty Tested?			Yes							
Te	est Method			Blower Door							
19.0	Mechanical Ventilat	ion									
Μ	lechanical Ventilatio	on						_			
	Mechanical Vent	ilation System Pres	ent	Yes							
	Approved Installa	ation		No							
	Mechanical Vent	ilation data Type		Database							
	Туре			Balanced mechanical ve	ntilation with h	neat recove	ery				
	MV Reference N	umber		500501							
	Configuration			1							
	Manufacturer SF	P		0.50							
	Duct Type			Rigid							
	MVHR Efficiency	1		90.00							
	Wet Rooms			1							
	SFP from Installe	er Commissioning C	Certificate	No							
	MVHR System L	ocation		Inside heated envelope	installed exclu	usively)					
	Duct Installation	Specification		Level 1							
19.1	Mechanical extract	ventilation - Decer	ntralised								
S	<b>FP F</b> 19 Ir	an/Room Type	Count								
0.	19 II	itchen	1								
U.	. 10 Ir W	Vet Room	1								

In Duct Fan Kitchen 0

0.00



0.00	In Duct Fan Other	0
0.11	Through Wall Fan	0
0.14	Kitchen Through Wall Fan	0
	Other Wet Room	

#### 20.0 Fans, Open Fireplaces, Flues No 21.0 Fixed Cooling System 22.0 Lighting No Fixed Lighting No Name Efficacy Power Capacity Count Lighting 1 85.00 . 680 8 5 None 24.0 Main Heating 1 25.0 Main Heating 2 None Space and Water Combined 26.0 Heat Networks **Space Community Heating Distribution Loss** Formal Declaration by Property Developer **Distribution Loss Value** 1.05 SAP Code 2308 Efficiency Percentage Of Electrical Fuel Type Heating Use Heat Source Heat Heat Fuel Factor Efficiency type Power Heat Ratio Heat source 1 Heat pump Electricity Space and Water 324.00 100.00 Space and Water Heat source 2 None 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 901 SAP Code 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 No Water use <= 125 litres/person/day Summer Immersion No Cold Water Source From mains Bath Count 1 No Supplementary Immersion Immersion Only Heating Hot Water No

28.1 Showers
--------------

Description	Shower Type	Flow Rate	Rated Power	Connected	Connected To
Shower	Combi boiler or unvented hot water sys	stem 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 Gen	erated			0.00					]			
Apportioned				0.00			kWh/Year	kWh/Year				
Connected to o	welling's ele	ctricity meter		Yes					]			
Electricity Gen	eration			Annual					]			
Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec	

Recommendations

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



Property Reference	AB First Floo	or Mid Terrac	e						Issued	on Date	15/1	2/2023	3
Assessment Reference	Be Green					Prop	Type I	Ref	Mid Floo	r Mid Ter	race		
Property	Ground Floo	r End Terrac	e, Sovereig	gn Harbour, Ea	astbourr	ne							
SAP Rating			85 B				2.73			ER	1	).21	
Environmental			98 A		% DER	< TER					7	3.26	
CO <sub>2</sub> Emissions (t/year)			0.2		DFEE		20.0	6		IFEE	2	0.63	
Compliance Check			See BRE	L	% DFEE	< TFEE					2	75	
% DPER < TPER			46.14		DPER		29.3	9		[PER	5	4.57	
Assessor Details	Ir. George Kent								Å	Assessoi	r ID B	Q97-0	001
Client													
SUMMARY FOR INPUT D	ATA FOR: Ne	w Build (A	As Desig	ned)									
Orientation			Unknown										
Property Tenture			ND										
Transaction Type			6										
Terrain Type			Suburbar	1									
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 c	alculation									
Thermal Mass			N/A						k.	J/m²K			
			Chandand										
			Standard										
Smart december fitted			No										
			INO										
7.0 Measurements			G	Basement: iround floor: 1st Storey: 2nd Storey: 3rd Storey: 4th Storey: 5th Storey: 6th Storey: 7th Storey:	Heat	Loss Pe 0.00 m 9.73 m 0.00 m 0.00 m 0.00 m 0.00 m 0.00 m 0.00 m		r Int	ernal Flor 0.00 m 75.12 r 0.00 m 0.00 m 0.00 m 0.00 m 0.00 m 0.00 m	or Area 1 <sup>2</sup> 1 <sup>2</sup>	Averag	e Stor 0.00 2.80 0.00 0.00 0.00 0.00 0.00 0.00	rey Height m m m m m m m m m m
8.0 Living Area			29.08						m	2			
9.0 External Walls Description Type External Wall 1 Steel	<b>Cons</b> Frame Other	truction			U-Value (W/m²K) 0.15	Kappa (kJ/m²K) / 140.00	Gross Area(m²) 27.24	Nett Area (m²) 13.49	Shelter Res 0.00	Shelter None	Opening 13.75	<b>js Are</b> : Calcu	a Calculation Type Jate Wall Area
9.1 Party Walls													
Description	Туре	Construc	tion					U-Value	Kappa	Area	Shelter	S	helter
Party Wall 1	Filled Cavity with Edge Sealing	Steel fram	IE					0.00	20.00	108.94	0.00		None
9.2 Internal Walls Description		Constructi	on								Ka	ppa	Area (m²)
Internal Wall 1		Plasterboar	d on timbe	r frame							(ĸJ/ 9.	m <b>∸K)</b> 00	139.92
10.1 Party Ceilings													



Description		Const	ruction						Карра	Area (m²)
Party Ceiling 1		Concr	ete floor slab, carpeted						( <b>kJ/m²K)</b> 100.00	75.12
11.1 Party Floors Description Party Floor 1		Storey Index Lowest	Construction Concrete floor slab, carpeted	I					<b>Kappa</b> (kJ/m²K) 100.00	<b>Area (m²)</b> 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)
	Manulaclurer	window	Double glazed			AIr Filled	0.45	vvood	0.70	1.10
Name East	<b>Opening Ty</b> Window	rpe	<b>Location</b> External Wall 1		<b>Orient</b> Ea	<b>ation</b> st	<b>Area (</b> 13.7	( <b>m²)</b> 75	Pi	<b>tch</b> 0
14.0 Conservatory			None							
15.0 Draught Proofing			100				%			
16.0 Draught Lobby			No							
17.0 Thermal Bridging			User Input							
Bridge Type E18 Party wall betwee E23 Balcony within or	en dwellings between dwellings,	balcony	Source Type Independently assessed Independently assessed	<b>Length</b> 5.60 19.46	<b>Psi</b> 0.00 0.00	Adjusted 0.00 0.00	Reference	:		<b>Imported</b> No No
P3 Party wall - Interme	ediate floor between	n dwellings	Independently assessed	50.42	0.00	0.00				No
(in blocks of flats) E2 Other lintels (includ E3 Sill E4 Jamb	ding other steel linte	ls)		6.55 6.55 12.60	0.00 0.00 0.00	0.00 0.00 0.00				Yes Yes Yes
Y-value			0.05				W/m²K			
Description			а							
18.0 Pressure Testing			Yes				7			
Designed AP <sub>50</sub>			2.50				 	²) @ 50 P	a	
Property Tested?			Yes							
Test Method			Blower Door							
19.0 Mechanical Ventilat Mechanical Ventilati Mechanical Veni	t <b>ion</b> on tilation System Pres	ent	Yes							
Approved Install	ation		No				i i			
Mechanical Vent	tilation data Type		Database				Ī			
Туре			Balanced mechanical ve	entilation with h	neat recove	ery				
MV Reference N	lumber		500501							
Configuration			1							
Manufacturer SF	P		0.50							
Duct Type			Rigid							
MVHR Efficiency	ý		90.00							
Wet Rooms			1							
SFP from Install	er Commissioning C	Certificate	No							
MVHR System L			Inside heated envelope	(installed exclu	usively)					
	Specification		Level I							
19.1 Mechanical extract SFP F	ventilation - Decer an/Room Type	ntralised Count								
0.19 li	n Room Fan	1								
0.18 li	n Room Fan Other	1								
0.00 li 0.00 li V	n Duct Fan Kitchen n Duct Fan Other Vet Room	0 0								



0.11	Through Wall Fan	0
0.14	Kitchen Through Wall Fan Other Wet Room	0

20.0 Fans, Open F	ireplaces, Flues											
21.0 Fixed Cooling	g System			No								
22.0 Lighting No Fixed Lightir	ng			No <b>Na</b> Ligh	ame ting 1	Efficacy 85.00		Power 8		Ca	<b>pacity</b> 680	Count 5
24.0 Main Heating	1			None								
25.0 Main Heating	2			None								
26.0 Heat Network Space Commu	s nity Heating			Space	e and Wate	r Combined						
Distributio	n Loss			Form	al Declarati	on by Property I	Developer					
Distributio	n Loss Value			1.05								
SAP Code	9			2308								
	Heat Source	Fuel Type	Heating Us	6e	Efficiency	Percentage O Heat	f Heat	Heat Power	Electr	ical	Fuel Factor	Efficiency type
Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5	Heat pump None None None None	Electricity	Space and Space and Space and Space and Space and	Water Water Water Water Water	324.00	100.00		Ratio				
28.0 Water Heating	3											
Water Heating				Comr	nunity Heat	ting						
SAP Code				901								
Flue Gas Heat I	Recovery System	I		No								
Waste Water He	eat Recovery Inst	antaneous S	ystem 1	No								
Waste Water He	eat Recovery Inst	antaneous S	ystem 2	No								
Waste Water He	eat Recovery Sto	rage System		No								
Solar Panel				No								
Water use <= 1	25 litres/person/d	ay		No								
Summer Immer	sion			No								
Cold Water Sou	irce			From	mains							
Bath Count				1								
Supplementary	Immersion			No								
Immersion Only	Heating Hot Wat	ter		No								
28.1 Showers												
Description		s	hower Type	er upv	antod bot w	I Inter evetem	Flow Rate [I/min]	Rated Pov [kW]	ver Cor	nect	ted Connected	І То

Completion unvented not water system 11.00	INU
None	
No	
No	
No	
No	
None	
None	
0.00	
0.00	kWh/Year
	None         No           No         No           No         No           No         No           No         No           None         0.00           0.00         0.00



Connected to	dwelling's ele	ctricity meter		Yes							
Electricity Gen	eration			Annual							
Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Recommendations Lower cost measures

None

Further measures to achieve even higher standards None



Property Reference	AB Ground F	loor End Ter	race						Issued	on Date	15/12	2/2023	3
Assessment Reference	00001					Prop	Туре Б	Ref	Ground	Floor End	Terrace		
Property	Ground Floor	End Terrace	e, Soverei	gn Harbour, Ea	astbourr	ne							
				-									
SAP Rating			83 B		DER		3.81			TER	1	7.72	
Environmental			97 A		% DER	< TER					78	3.50	
CO <sub>2</sub> Emissions (t/year)			0.2		DFEE		41.6	4		IFEE	47	7.91	
Compliance Check			See BRE	il i	% DFEE	E < TFEE					1:	3.08	
% DPER < TPER			57.40		DPER		40.6	4		IPER	9	5.38	
Assessor Details	Ir. George Kent									Assessor	D B	Q97-0	001
Client													
SUMMARY FOR INPUT D	ATA FOR: Nev	w Build (A	s Desig	ned)									
Orientation			Unknowr	1									
Property Tenture			ND										
Transaction Type			6										
Terrain Type			Suburba	n									
1.0 Property Type			Flat, End	-Terrace									
Position of Flat			Ground-1	loor flat									
Which Floor			0										
2.0 Number of Storevs			1										
3.0 Date Built			2023										
3 0 Property Age Band			1										
4.0 Sheltered Sides													
5.0 Suplight/Shado		orupkpowp											
6.0 Thormal Mass Parameter			Droping										
Thermal Mass Farameter				alculation						1/m21/			
			IN/A						K.	J/III-K			
7.0 Electricity Tariff			Standard										
Smart electricity meter fitted			No										
Smart gas meter fitted			No										
7.0 Measurements					Heat		rimata		ornal Ela		Averes	. 644	ov Usiaht
				Basement:	пеа	0.00 m	inneter		0.00 n	η <sup>2</sup>	Average	0.00	m meight
			(	Ground floor: 1st Storey:		13.52 n 0.00 m	n I		55.91 ı 0.00 n	ກ² າ²		3.80 0.00	m m
				2nd Storey:		0.00 m	1		0.00 n	1 <sup>2</sup>		0.00	m
				4th Storey:		0.00 m	1		0.00 n	1 1 <sup>2</sup>		0.00	m
				5th Storey: 6th Storey:		0.00 m 0.00 m	1		0.00 n 0.00 n	ו² ו²		0.00 0.00	m m
				7th Storey:		0.00 m	1		0.00 n	1 <sup>2</sup>		0.00	m
8.0 Living Area			27.05						m	2			
9.0 External Walls													
Description Type	Const	ruction			U-Value (W/m²K)	Kappa (kJ/m <sup>2</sup> K)	Gross Area(m <sup>2</sup> )	Nett Area (m <sup>2</sup> )	Shelter Res	Shelter	Opening	is Area	a Calculation Type
Externar Wall 1 Steel 1	-rame Other				0.15	140.00	31.38	43.32	0.00	None	8.06	Calci	aldle vvall Area
9.1 Party Walls Description	vpe	Construct	tion					U-Value	Kappa	Area	Shelter	s	helter
Party Wall 1	Filled Cavity with	Steel fram	e					(W/m²K) 0.00	(kJ/m²K) 20.00	(m²) 110.28	<b>Res</b> 0.00		None
9.2 Internal Walls	5 5												
Description		Construction	on								Ka	ppa	Area (m²)
Internal Wall 1		Plasterboar	d on timbe	er frame							<b>(kJ/</b> i 9.	<b>m²K)</b> 00	149.19
10.1 Party Ceilings													



Description		Constru	iction					(	Kappa kJ/m²K)	Area (m²)
Party Ceiling 1		Concret	e floor slab, carpeted					(	100.00	55.91
11.0 Heat Loss Floors Description Heatloss Floor 1	<b>Type</b> Exposed Floor - Solid	Storey Index Lowest occupie	Construction ed Other		<b>U-Va</b> (W/m 0.0	lue ²K) 9	Shelter Code None	Shel Fac 0.0	ter Kapp tor (kJ/m 0 0.00	<b>ba Area(m²)</b> ² <b>K)</b> ○ 55.91
12.0 Opening Types										
Description	Data Source	Туре	Glazing		Glazing	Filling	G-value	Frame	Frame	U Value
Window	Manufacturer	Window	Double glazed		Gap	<b>Type</b> Air Filled	0.45	T <b>ype</b> Wood	Factor 0.70	(W/m²K) 1.10
13.0 Openings Name	Opening Ty	/pe	Location		Orient	ation	Area (	(m²)	Pi	tch
Easi	VVINDOW				Ea	si	8.0	0		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 E2 Other lintels (includi E4 Jamb E20 Exposed floor (nor E16 Corner (normal) E18 Party wall between E7 Party floor between E23 Balcony within or b support penetrates wall E25 Staggered party wi	ng other steel linte mal) dwellings dwellings (in block etween dwellings, insulation all between dwellin diete floer between	els)       ks of flats)     balcony     ngs   	Source Type ndependently assessed ndependently assessed ndependently assessed ndependently assessed ndependently assessed ndependently assessed ndependently assessed	Length 3.84 8.40 13.52 3.80 3.80 6.28 7.24 3.80 16.55	<b>Psi</b> 0.00 0.00 0.00 0.00 0.00 0.00 0.00	Adjusted 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	I Reference:			Imported Yes Yes No No No No
(in blocks of flats)	diate floor betweer	n dwellings I	ndependently assessed	16.55	0.00	0.00				No
P7 Party Wall - Expose	d floor (normal)		ndependently assessed	16.55	0.00	0.00				No
Y-value			0.05				W/m²K			
Description			а							
18.0 Pressure Testing			Yes							
Designed AP <sub>50</sub>			2.50				m³/(h.m	²) @ 50 Pa		
Property Tested?			Yes							
Test Method			Blower Door							
19.0 Mechanical Ventilatio	on									
Mechanical Ventilation	n									
Mechanical Ventil	ation System Pres	ent	Yes							
Approved Installa	tion		No							
Mechanical Ventil	ation data Type		Database							
Туре			Balanced mechanical ve	entilation with h	neat recove	ery				
MV Reference Nu	ımber		500501							
Configuration			1							
Manufacturer SFF	þ		0.50							
Duct Type			Rigid							
MVHR Efficiency			90.00				7			
Wet Rooms			1				=			
SFP from Installer	r Commissioning (	Certificate	No							
MVHR System Lo	ocation		Inside heated envelope	(installed exclu	usively)		7			
- Duct Installation S	Specification		Level 1		- /		Ē			
19.1 Mechanical extract v SFP Fa	entilation - Decer	ntralised Count								
0.14 In Kit 0.11 In Wi	Room Fan Ichen Room Fan Other et Room	1								



0.00	In Duct Fan In Duct Fan	Kitchen 0 Other 0										
0.08	Wet Room	ll Fan 0										
0.00	Kitchen	II Fan 0										
0.00	Other Wet R	loom										
20.0 Fans, Open Fi	replaces, Flues											
21.0 Fixed Cooling	System			No								
22.0 Lighting												
No Fixed Lighting	g			No Na Ligh	ame ting 1	<b>Efficac</b> 85.00	у	Power 8		Car	<b>bacity</b> 680	Count 5
24.0 Main Heating 1	I			None								
25.0 Main Heating 2	2			None								
26.0 Heat Networks				Space	e and Wate	r Combined						
Space Commun	nity Heating											
Distribution	n Loss			Forma	al Declarat	ion by Property	Developer					
Distributior	n Loss Value			1.05								
SAP Code				2308								
	Heat Source	Fuel Type	Heating Us	se l	Efficiency	Percentage ( Heat	Of Heat	Heat Power Ratio	Elect	rical	Fuel Factor	Efficiency type
Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5	Heat pump None None None None	Electricity	Space and Space and Space and Space and Space and	Water Water Water Water Water	324.00	100.00						
28.0 Water Heating												
Water Heating				Comn	nunity Hea	ting						
SAP Code				901								
Flue Gas Heat R	ecovery System			No								
Waste Water He	at Recovery Insta	antaneous S	ystem 1	No								
Waste Water He	at Recovery Insta	antaneous S	ystem 2	No								
Waste Water He	at Recovery Stor	age System		No								
Solar Panel				No								
Water use <= 12	5 litres/person/da	ау		No								
Summer Immers	ion			No								
Cold Water Sour	ce			From	mains							
Bath Count				1								
Supplementary I	mmersion			No								
Immersion Only	Heating Hot Wat	er		No								
28.1 Showers												
Description		S	hower Type	)			Flow Rate [l/min]	Rated Pov [kW]	ver Co	nnect	ed Connected	d To
Shower	la at Da any amy C	(	Combi boiler	or unve	ented hot w	ater system	11.00			No		
28.3 Waste Water H	leat Recovery S	ystem										
29.0 Hot Water Cyli	nder			None								
Cylinder Stat				No								
Cylinder In Heate	ed Space			No								
Independent Tim	e Control			No								
In Airing Cupboa	rd			No								
31.0 Thermal Store				None								

None

34.0 Small-scale H	ydro
--------------------	------



Electricity Gen	erated			0.00					]		
Apportioned				0.00					kWh/Year		
Connected to o	welling's ele	ctricity meter		Yes					]		
Electricity Gen	eration			Annual					]		
Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Recommendations

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



Property Reference	AB Ground Fl	oor Mid Terra	ace						Issue	d on Date	15/*	12/202	3
Assessment Reference	Be Green					Prop	Type I	Ref	Ground	iround Floor End Terrace			
Property	Ground Floor	End Terrace	, Sover	eign Harbour, E	astbour	ne							
			,	, ,									
SAP Rating			84 B		DER		3.38	8		TER		14.95	
Environmental			97 A		% DER	< TER					7	77.39	
CO <sub>2</sub> Emissions (t/year)			0.23		DFEE		38.6	62		TFEE	4	42.15	
Compliance Check			See BF	REL	% DFE	E < TFEE					8	3.38	
% DPER < TPER			54.98		DPER		36.0	)5		TPER	٤	30.07	
Assessor Details Mr	. George Kent									Assessor	ID I	3Q97-(	0001
Client													
SUMMARY FOR INPUT DA	TA FOR: Nev	v Build (As	s Des	igned)									
Orientation		Γ	Unknov	wn									
Property Tenture		Ī	ND										
Transaction Type		[	6										
Terrain Type		[	Suburb	ban									
1.0 Property Type		[	Flat, M	id-Terrace									
Position of Flat		Ī	Ground	d-floor flat									
Which Floor		[	0										
2.0 Number of Storeys		ſ	1										
3.0 Date Built		ſ	2023										
3.0 Property Age Band		ſ	L										
4.0 Sheltered Sides		Ĩ	3										
5.0 Sunlight/Shade		Į.	Averag	je or unknown									
6.0 Thermal Mass Parameter		Ĩ	Precise	e calculation									
Thermal Mass		[	N/A						k	J/m²K			
7.0 Electricity Tariff		]	Standa	ard									
Smart electricity meter fitted		ſ	No										
Smart gas meter fitted		[	No										
7.0 Measurements													
				Basement: Ground floor: 1st Storey: 2nd Storey: 3rd Storey: 4th Storey: 5th Storey: 6th Storey: 7th Storey:	Heat	Loss Pe 0.00 m 9.73 m 0.00 m 0.00 m 0.00 m 0.00 m 0.00 m 0.00 m	rimete	r In	ternal Fic 0.00 r 75.12 0.00 r 0.00 r 0.00 r 0.00 r 0.00 r 0.00 r	oor Area n² m² n² n² n² n² n² n² n² n²	Avera	ge Sto 0.00 3.80 0.00 0.00 0.00 0.00 0.00 0.00	rey Height m m m m m m m m m m
8.0 Living Area		[	29.08						n	n²			
9.0 External Walls Description Type External Wall 1 Steel Fit	<b>Constr</b> rame Other	uction			U-Value (W/m²K) 0.15	<b>Kappa</b> (kJ/m²K) 140.00	Gross Area(m²) 36.97	Nett Area (m²) 23.22	Shelter Res 0.00	Shelter None	Openii 13.7	n <b>gs Are</b> 5 Calc	a Calculation Type ulate Wall Area
9.1 Party Walls													
Description Ty	ype	Constructi	ion					U-Value (W/m <sup>2</sup> K)	Kappa (kJ/m <sup>2</sup> K)	Area (m²)	Shelter Res	S	helter
Party Wall 1 Fi	illed Cavity with dge Sealing	Steel frame	e 					0.00	20.00	108.94	0.00		None
9.2 Internal Walls Description		Constructio	on								Ki (kJ	appa //m²K)	Area (m²)
Internal Wall 1		Plasterboard	l on tim	ber frame							, e	9.00	139.92
10.1 Party Ceilings													



<b>Description</b> Party Ceiling 1		<b>Const</b> i Concre	ruction te floor slab, carpeted			(	<b>Kappa</b> [ <b>kJ/m²K)</b> 100.00	<b>Area (m²)</b> 75.12		
11.0 Heat Loss Flo	ors									
Description	Туре	Storey Index	Construction		U-Va (W/r	alue n²K)	Shelter Code	She Fac	lter Kappa tor (kJ/m²l	a Area (m²) K)
Heatloss Floor 1	Exposed Floor - Solid	Lowest occup	bied Other		0.0	09	None	0.	0.00	75.12
12.0 Opening Type Description	s Data Source	Туре	Glazing		Glazing	Filling	G-value	Frame	Frame	U Value
Window	Manufacturer	Window	Double glazed		Gap	Air Filled	0.45	Vood	0.70	(w/m²K) 1.10
13.0 Openings										
<b>Name</b> East	<b>Opening T</b> y Window	уре	Location External Wall 1		Orien Ea	<b>tation</b> ast	<b>Area (</b> 13.7	<b>m²)</b> 5	Pit 0	ch )
14.0 Conservatory			None							
15.0 Draught Proof	ing		100				%			
16.0 Draught Lobb	у		No							
17 0 Thormal Bride	ina									
17.1 List of Bridge	s		User input							
Bridge Type E18 Party wall b E23 Balcony wit	etween dwellings hin or between dwellings,	, balcony	Source Type Independently assessed Independently assessed	<b>Length</b> 7.60 9.73	<b>Psi</b> 0.00 0.00	Adjusted 0.00 0.00	Reference:			Imported No No
support penetrat P3 Party wall - Ir	tes wall insulation ntermediate floor betweer	n dwellings	Independently assessed	25.21	0.00	0.00				No
(in blocks of flats	s) Exposed floor (normal)	0	Independently assessed	25 21	0.00	0.00				No
E2 Other lintels	(including other steel linte	els)	independently assessed	6.55	0.00	0.00				Yes
E4 Jamb E20 Exposed flc	or (normal)			12.60 9.73	0.00 0.00	0.00 0.00				Yes No
	× ,		0.05				W/m²k			
Description			0.05							
			u							
18.0 Pressure Test	ing		Yes							
Designed AP 50			2.50				m³/(h.m	²) @ 50 Pa	I	
Property Tested	?		Yes							
Test Method			Blower Door							
19.0 Mechanical Ve	entilation									
Mechanical Ver	ntilation									
Mechanica	al Ventilation System Pres	sent	Yes							
Approved	Installation		No							
Mechanica	al Ventilation data Type		Database							
Туре			Balanced mechanical ve	entilation with h	neat recov	ery				
MV Refere	ence Number		500501							
Configurat	ion		1							
Manufactu	rer SFP		0.50							
Duct Type			Rigid							
MVHR Effi	ciency		90.00							
Wet Room	S		1							
SFP from	Installer Commissioning (	Certificate	No							
MVHR Sys	stem Location		Inside heated envelope	(installed exclu	usively)					
Duct Insta	lation Specification		Level 1							

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



0.08	Through Wall Fan	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 Lighting 1	Efficacy 85.00	<b>Capa</b> 680	Capacity 680			
24.0 Main Heating 1	None						
25.0 Main Heating 2	None						
26.0 Heat Networks Space Community Heating Distribution Loss	Space and Water	Combined	veloper				
Distribution Loss Value	1.05						
SAP Code	2308						
Heat Source Fuel Type Heating Us	e Efficiency	Percentage Of Heat	Heat	Heat I Power Ratio	Electrical F	uel Factor	Efficiency type
Heat source 1Heat pumpElectricitySpace and bit sourceHeat source 2NoneSpace and bit sourceSpace and bit sourceHeat source 3NoneSpace and bit sourceSpace and bit sourceHeat source 4NoneSpace and bit sourceSpace and bit sourceHeat source 5NoneSpace and bit source	Water 324.00 Water Water Water Water	100.00					
28.0 Water Heating							
Water Heating	Community Heat	ing					
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	er unvented het w	Fic [	ow Rate I/min]	Rated Power [kW]	Connected	Connected	І То
- Control Doller ( 		alor system	11.00		INU		

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



Connected to	dwelling's ele	ctricity meter		Yes							
Electricity Gen	eration			Annual							
Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Recommendations Lower cost measures

None

Further measures to achieve even higher standards None



Property Reference	AB Third Floo	or End Terrac	ce					Issued	on Date	15/1	2/2023	3
Assessment Reference	Be Green				Pror	o T <u>ype</u>	Ref	Mid Floo	Mid Floor Partial Roof			
Property	Ground Floor	End Terrace	e. Sovereign Harbo	ur. Eas	tbourne							
SAP Rating			84 B	DE	ER	3.16	6		TER	1	2.77	
Environmental			98 A	%	DER < TER					7	5.25	
CO <sub>2</sub> Emissions (t/year)			0.17	DF	FEE	22.2	22		IFEE	2	25.28	
Compliance Check			See BREL	%	DFEE < TFE	1				1	2.10	
% DPER < TPER			50.56	DF	PER	33.9	98	1	IPER	6	8.74	
Assessor Details	Mr. George Kent							A	Assessor	· ID E	3Q97-0	001
Client												
SUMMARY FOR INPUT	DATA FOR: Nev	w Build (A	s Designed)									
Orientation			Unknown									
Property Tenture			ND									
Transaction Type			6									
Terrain Type			Suburban									
1.0 Property Type			Flat, End-Terrace									
Position of Flat		i	Mid-floor flat									
Which Floor		i	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 unkno	wn								
6.0 Thermal Mass Parameter			Precise calculation	n								
Thermal Mass			N/A					k.	J/m²K			
7.0 Electricity Tariff			Standard									
Smart electricity meter fitted	1		No									
Smart gas meter fitted			No									
7.0 Measurements			Basen Ground fi 1st Stc 2nd Stc 3rd Stc 4th Stc 5th Stc 6th Stc 7th Stc	nent: loor: orey: orey: orey: orey: orey: orey: orey:	Heat Loss Pe 0.00 n 13.52 r 0.00 n 0.00 n 0.00 n 0.00 n 0.00 n 0.00 n	erimete 1 11 1 1 1 1 1 1 1 1 1	r In	ternal Flo 0.00 n 55.91 r 0.00 n 0.00 n 0.00 n 0.00 n 0.00 n 0.00 n	or Area 1 <sup>2</sup> 1 <sup>2</sup>	Averag	<b>je Stor</b> 0.00 2.80 0.00 0.00 0.00 0.00 0.00 0.00	rey Height m m m m m m m m m m
8.0 Living Area			27.05					m	2			
9.0 External Walls Description Typ External Wall 1 Stee	e Const el Frame Other	ruction		U-' (W)	Value Kappa I/m²K) (kJ/m²K) 0.15 140.00	Gross Area(m²) 37.86	Nett Area (m²) 29.80	Shelter Res 0.00	Shelter None	Openin 8.06	i <b>gs Are</b> a Calcu	a Calculation Type ulate Wall Area
9.1 Party Walls												
Description	Туре	Construct	tion				U-Value	Kappa	Area	Shelter	S	helter
Party Wall 1	Filled Cavity with Edge Sealing	Steel frame	e				0.00	20.00	110.28	0.00	l	None
9.2 Internal Walls												
Description		Constructio	on							Ka /k	appa /m²⊮`\	Area (m²)
Internal Wall 1		Plasterboard	d on timber frame							9	.00	149.19
10.0 External Roofs												



Description	Туре	Construc	ction		U-Value (W/m²K)(	Kappa (kJ/m²K)/	Gross Area(m²)	Net Are	t Shelter a Code	Shelter Factor	r Calculation Type	Openings
External Roof 1	External Flat Roof	Other			0.10	0.00	10.72	<b>(m</b> ² 10.7	) 2 None	0.00	Enter Gross Area	s 0.00
10.1 Party Ceilings												
Description		Const	ructi	on							Kappa (kJ/m²K)	Area (m²)
Party Ceiling 1		Concre	ete flo	oor slab, carpeted							100.00	50.36
11.1 Party Floors Description		Storey	Cor	nstruction							Kappa	Area (m²)
Party Floor 1		Lowest occupied	Cor	ncrete floor slab, carpeted							( <b>KJ/M<sup>-</sup>K)</b> 100.00	55.91
12.0 Opening Types Description	Data Source	Туре		Glazing		Glazir	ng Fill	ing	G-value	Frame	Frame	U Value
Window	Manufacturer	Window		Double glazed		Gap	Air F	pe illed	0.45	Wood	0.70	1.10
13.0 Openings												
<b>Name</b> East	<b>Opening Ty</b> Window	pe		Location External Wall 1		Orie	entation East		<b>Area (</b> 8.06	<b>m²)</b> S	Pit C	<b>ch</b>
14.0 Conservatory				None								
15.0 Draught Proofing				100					%			
16.0 Draught Lobby				No					Ī			
17.0 Thermal Bridging				User Input								
Bridge Type E16 Corner (normal) E18 Party wall betwee E7 Party floor betweer E23 Balcony within or support penetrates wa E25 Staggered party w P3 Party wall - Interme	n dwellings n dwellings (in block between dwellings, Il insulation vall between dwellin valiate floor between	s of flats) balcony gs	Sou Inde Inde Inde Inde	arce Type ependently assessed ependently assessed ependently assessed ependently assessed ependently assessed	Length 2.80 2.80 6.38 7.24 2.80 31.62	<b>Psi</b> 0.00 0.00 0.00 0.00 0.00	Adju 0. 0. 0. 0.	<b>isted I</b> 00 00 00 00 00	Reference:			Imported No No No No
(in blocks of flats) E2 Other lintels (includ E3 Sill E4 Jamb E14 Flat roof E24 Eaves (insulation P4 Party wall - Roof (ir	ting other steel linte at ceiling level - inv nsulation at ceiling l	ls) erted) evel)			3.84 3.84 8.40 8.72 7.24 1.48	0.00 0.00 0.00 0.00 0.00 0.00	0. 0. 0. 0. 0. 0.	00 00 00 00 00 00 00				Yes Yes Yes No No No
Y-value				0.05					W/m²K			
Description				а								
									 ๅ			
18.0 Pressure Testing				Yes					]			
Designed AP <sub>50</sub>				2.50					m³/(h.m <sup>2</sup>	2) @ 50	Pa	
Property Tested?				Yes								
Test Method				Blower Door								
19.0 Mechanical Ventilati	ion											
Mechanical Ventilation	on								-			
Mechanical Vent	ilation System Pres	ent		Yes								
Approved Installa	ation			No								
Mechanical Vent	ilation data Type			Database								
Туре				Balanced mechanical vent	tilation with	heat reco	overy					
MV Reference N	umber			500501								
Configuration				1								
Manufacturer SF	P			0.50					]			
Duct Type				Rigid					]			
MVHR Efficiency	/			90.00					7			
Wet Rooms				1					Ī			
SFP from Installe	er Commissionina C	Certificate		No					ī			
	3			L					-			



MVHR Sys	stem Location		Inside heated en	velope (installe	7				
Duct Instal	lation Specification		Level 1		Ī				
19.1 Mechanical ex	tract ventilation - Decentra	alised							
<b>SFP</b>	Fan/Room Type Co	ount							
0.18	Kitchen								
0.10	Wet Room								
0.00	In Duct Fan Kitchen 0 In Duct Fan Other 0								
0.11	Wet Room Through Wall Fan 0								
0.14	Kitchen Through Wall Fan 0 Other Wet Room								
20.0 Fans, Open Fi	replaces, Flues								
21.0 Fixed Cooling	System		No						
22.0 Lighting									
No Fixed Lightin	g		No						
			Name Lighting 1	Efficacy 85.00	1	Power 8	Capaci 680	ity	Count 5
24.0 Main Heating 1	1		None						
25.0 Main Heating 2	2		None				]		
26.0 Heat Networks	6		Space and Wate	r Combined			7		
Space Commur	nity Heating						_ _		
Distributior	n Loss		Formal Declaration	on by Property	Developer				
Distributior	n Loss Value		1.05						
SAP Code			2308						
	Heat Source Fuel Typ	e Heating Us	e Efficiency	Percentage O Heat	f Heat	Heat El Power	ectrical Fu	lel Factor	Efficiency type
Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5	Heat pump Electricity None None None None	Space and Space and Space and Space and Space and	Water 324.00 Water Water Water Water	100.00		κατιο			
28.0 Water Heating							_		
Water Heating			Community Heat	ling			_		
SAP Code			901				_		
Flue Gas Heat R	Recovery System		No						
Waste Water He	at Recovery Instantaneous	System 1	No						
Waste Water He	at Recovery Instantaneous	System 2	No				_		
Waste Water He	at Recovery Storage Syster	n	No				_		
Solar Panel			No				_		
Water use <= 12	25 litres/person/day		No				_		
Summer Immers	sion		No				4		
Cold Water Sour	rce		From mains				4		
Bath Count			1				4		
Supplementary I	mmersion		No				4		
Immersion Only	Heating Hot Water		No				<u> </u>		
28.1 Showers Description		Shower Type	)		Flow Rate	Rated Power	Connected	Connected	І То
Shower		Combi boiler	or unvented hot w	ater system	11.00	[[[]]	No		
28.3 Waste Water H	leat Recovery System								
29.0 Hot Water Cyli	inder		None						
Cylinder Stat			No						



Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Electricity Ge	eneration			Annual					]		
Connected to	o dwelling's ele	ectricity meter		Yes							
Apportioned				0.00					kWh/Year		
Electricity Ge	enerated			0.00							
34.0 Small-scale	e Hydro			None					]		
31.0 Thermal Ste	ore			None					]		
	board			INO							
				No							
Independent	Time Control			No					ī		
Cylinder In H	eated Space			No					7		

Recommendations

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



Property Reference	AB Third Flo	or Mid Terrac	e						Issued	l on Date	15/1	2/202	3
Assessment Reference	Be Green					Prop	Type I	Ref	Mid Terr	ace Partia	al Roof		
Property	Ground Floo	r End Terrace	e, Sovereigi	n Harbour, E	astbour	ne							
SAP Rating			85 B		DER		2.77	,		TER	1	0.98	
Environmental			98 A		% DER	< TER					7	4.77	
CO <sub>2</sub> Emissions (t/year)			0.2		DFEE		21.7	'3		TFEE	2	4.13	
Compliance Check			See BREL		% DFEI	E < TFEE					9	.95	
% DPER < TPER			49.29		DPER		29.7	'6		TPER	5	8.69	
Assessor Details	Mr. George Kent									Assessor	r ID B	Q97-0	)001
Client													
SUMMARY FOR INPUT D	ATA FOR: Ne	w Build (A	s Design	ied)									
Orientation			Unknown										
Property Tenture			ND										
Transaction Type			6										
Terrain Type			Suburban										
1.0 Property Type			Flat, Mid-T	errace									
Position of Flat			Mid-floor fl	at									
Which Floor			3										
2.0 Number of Storevs			1										
3.0 Date Built			2023										
3.0 Property Age Band			L										
4.0 Sheltered Sides			3										
5.0 Sunlight/Shade			Average o	r unknown									
6.0 Thermal Mass Parameter			Precise ca	lculation									
Thermal Mass			N/A						k	J/m²K			
7.0 Electricity Tariff			Standard										
Smart electricity meter fitted			No										
Smart gas meter fitted			No										
7.0 Measurements					Heat	Loss Pe	rimete	r In	ternal Flo	or Area	Averad	e Sto	rev Height
			G	Basement: round floor: 1st Storey: 2nd Storey: 3rd Storey: 4th Storey: 5th Storey: 6th Storey: 7th Storey:		0.00 m 9.73 m 0.00 m 0.00 m 0.00 m 0.00 m 0.00 m 0.00 m	1 1 1 1 1 1 1		0.00 r 75.12 0.00 r 0.00 r 0.00 r 0.00 r 0.00 r 0.00 r	n <sup>2</sup> m <sup>2</sup> n <sup>2</sup> n <sup>2</sup> n <sup>2</sup> n <sup>2</sup> n <sup>2</sup> n <sup>2</sup>		0.00 2.80 0.00 0.00 0.00 0.00 0.00 0.00	m m m m m m m m m
8.0 Living Area			29.08						n	1 <sup>2</sup>			
9.0 External Walls Description Type External Wall 1 Steel	Cons Frame Other	truction			U-Value (W/m²K) 0.15	<b>Kappa</b> (kJ/m²K) 140.00	Gross Area(m²) 27.24	Nett Area (m²) 13.49	Shelter Res 0.00	Shelter None	Openin 13.75	gs Are Calc	a Calculation Type ulate Wall Area
9.1 Party Walls								-					
Description	Туре	Construct	tion					U-Value	Kappa	Area	Shelter	s	helter
Party Wall 1	Filled Cavity with Edge Sealing	Steel fram	e					(W/m²K) 0.00	( <b>kJ/m²K)</b> 20.00	<b>(m²)</b> 108.94	<b>Res</b> 0.00		None
9.2 Internal Walls													
Description		Construction	on								Ka (ku	ppa m²kr)	Area (m²)
Internal Wall 1		Plasterboar	d on timber	frame							9	.00	139.92
10.0 External Roofs													



Description	Туре	Construe	ction	U-Value (W/m²K)	Kappa G (kJ/m²K)Ar	iross Ne ea(m²) Ar	ett Shelter ea Code	r Shelter Factor	Calculatio Type	nOpenings
External Roof 1	External Flat Roof	Other		0.10	0.00 1	4.40 14.	40 None	0.00	Enter Gros Area	s 0.00
10.1 Party Ceilings Description		Const	ruction						Kappa	Area (m²)
Party Ceiling 1		Concr	ete 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	Туре	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 East	<b>Opening Ty</b> Window	/pe	Location External Wall 1		<b>Orien</b> Ea	<b>tation</b> ist	<b>Area</b> 13.7	<b>(m²)</b> 75	Pi	<b>tch</b> 0
14.0 Conservatory			None							
15.0 Draught Proofing			100				%			
16.0 Draught Lobby			No							
17.0 Thermal Bridging 17.1 List of Bridges			User Input							
Bridge Type E18 Party wall betwee E23 Balcony within or support penetrates wa P3 Party wall - Interme	en dwellings between dwellings, ill insulation ediate floor betweer	balcony n dwellings	Source Type Independently assessed Independently assessed	<b>Length</b> 5.60 9.73 47.46	<b>Psi</b> 0.00 0.00 0.00	Adjusted 0.00 0.00 0.00	Reference	:		Imported No No
(in blocks of flats) P4 Party wall - Roof (i E2 Other lintels (incluc E3 Sill E4 Jamb E14 Flat roof E24 Eaves (insulation	nsulation at ceiling I ding other steel linte at ceiling level - inv	level) els) rerted)	Independently assessed	2.96 6.55 6.55 12.60 12.69 9.73	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00				No Yes Yes No No
Y-value			0.05				W/m²K			
Description			a							
19.0 Processo Tecting			Vac							
			2 50					<sup>2</sup> ) @ 50	D <sub>2</sub>	
Property Tested?			Yes					, @ 001	u	
Test Method			Blower Door				=			
19.0 Mechanical Ventilat	ion									
Mechanical Ventilation	on									
Mechanical Vent	tilation System Pres	ent	Yes							
Approved Install	ation		No							
Mechanical Vent	tilation data Type		Database							
Туре			Balanced mechanical ver	ntilation with	heat recove	əry				
MV Reference N	lumber		500501							

Duct Type
MVHR Efficiency
Wet Rooms

SFP from Installer Commissioning Certificate MVHR System Location 1

0.50

Rigid 90.00

1

No

Level 1

Inside heated envelope (installed exclusively)

/1 V I	RC	Уy	Sle	ocat	011	
				 _		



19.1 Mechanical extra	act ventilation - Dece	ntralised							
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	Wet Room	0							
0.11	Through Wall Fan Kitchen	0							
0.14	Through Wall Fan Other Wet Room	0							
20.0 Fans, Open Fire	places, Flues								
21.0 Fixed Cooling S	ystem		No						
22.0 Lighting									
No Fixed Lighting			No						
			Name Lighting 1	Efficac 85.00	у	Power 8	<b>Capa</b> 680	)	Count 5
24.0 Main Heating 1			None						
25.0 Main Heating 2			None						
26.0 Heat Networks			Space and Wate	er Combined					
Space Communit	y Heating								
Distribution L	OSS		Formal Declarat	ion by Property	Developer				
Distribution L	oss Value		1.05						
SAP Code			2308						
ŀ	leat Source Fuel 1	Гуре Heating U	se Efficiency	Percentage C Heat	Of Heat	Heat I Power	Electrical F	uel Factor	Efficiency type
Heat source 1	leat numn Electr	icity Snace and	Water 324.00	100.00		Ratio			
Heat source 2	lone	Space and	Water	100.00					
Heat source 3 N Heat source 4 N	lone	Space and Space and	Water						
Heat source 5 N	lone	Space and	Water						
28.0 Water Heating			Community Hoo	ting			_		
				ung					
SAP Code	en la custana		901						
Flue Gas Heat Re	Covery System	our Ourstein d	N						
waste water Heat	Recovery Instantaneo		NO						
Waste Water Heat	Recovery Instantaneo	us System 2	No						
Waste Water Heat	Recovery Storage Sys	stem	No						
Solar Panel			No						
Water use <= 125	litres/person/day		No						
Summer Immersio	n		No						
Cold Water Source	9		From mains						
Bath Count			1						
Supplementary Im	mersion		No						
Immersion Only He	eating Hot Water		No						
28.1 Showers Description		Shower Typ	e		Flow Rate	Rated Power	Connected	Connecter	d To
Shower		Combi boiler	or unvented hot w	vater system	<b>[I/min]</b> 11.00	[kW]	No		
28.3 Waste Water Hea	at Recovery System								
29.0 Hot Water Cylind	der		None						
Cylinder Stat			No						
Cylinder In Heated	Space		No						
Independent Time	Control		No						
			·						



In Airing Cupb	oard			No					]		
31.0 Thermal Sto	re			None					]		
34.0 Small-scale	Hydro			None					]		
Electricity Gen	erated			0.00					]		
Apportioned				0.00					kWh/Year		
Connected to	dwelling's ele	ectricity meter		Yes					]		
Electricity Gen	eration			Annual					]		
Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Recommendations

Lower cost measures None

Further measures to achieve even higher standards None



Property Reference	AC Third Floo	or End Terrad	ce						Issued	d on Date	15/1	2/202	3
Assessment Reference	Be Green					Prop	Type	Ref	Top Floo	or End Ter	race		-
Property	Ground Floor	End Terrace	e. Sover	eign Harbour. Ea	astbourn	ie							
			,										
SAP Rating			84 B		DER		3.16			TER	1	1.73	
Environmental			97 A	a	% DER ·	< TER					7	3.06	
CO <sub>2</sub> Emissions (t/year)			0.22		DFEE		32.3	1		TFEE	3	2.49	
Compliance Check			See BF	REL	% DFEE	< TFEE					0	.55	
% DPER < TPER			45.29		DPER		33.6	8		TPER	6	1.56	
Assessor Details Mr	. George Kent									Assessor	· ID E	Q97-0	0001
Client													
SUMMARY FOR INPUT DA	TA FOR: Nev	w Build (A	s Desi	igned)									
Orientation			Unknov	wn									
Property Tenture			ND										
Transaction Type			6										
Terrain Type			Suburb	an									
1.0 Property Type			Flat, Er	nd-Terrace									
Position of Flat			Top-flo	or 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			Averag	e or unknown									
6.0 Thermal Mass Parameter			Precise	e calculation									
Thermal Mass			N/A						k	J/m²K			
7.0 Electricity Tariff			Standa	rd									
Smart electricity meter fitted			No										
Smart gas meter fitted			No										
7 0 Measurements													
				Basement: Ground floor: 1st Storey: 2nd Storey: 3rd Storey: 4th Storey: 5th Storey: 6th Storey: 7th Storey:	Heat I	Loss Per 0.00 m 17.46 m 0.00 m 0.00 m 0.00 m 0.00 m 0.00 m 0.00 m	<b>rimete</b> ו ז	r In	ternal Flo 0.00 r 75.20 0.00 r 0.00 r 0.00 r 0.00 r 0.00 r 0.00 r	<b>or Area</b> m <sup>2</sup> m <sup>2</sup> n <sup>2</sup> n <sup>2</sup> n <sup>2</sup> n <sup>2</sup> n <sup>2</sup> n <sup>2</sup> n <sup>2</sup>	Averag	e Sto 0.00 2.80 0.00 0.00 0.00 0.00 0.00 0.00	rey Height m m m m m m m m m
8.0 Living Area			29.17						n	1 <sup>2</sup>			
9.0 External Walls Description Type External Wall 1 Steel Fr	Constr ame Other	ruction		(	U-Value (W/m²K) ( 0.15	<b>Kappa</b> ( <b>kJ/m²K) A</b> 140.00	Gross Area(m²) 48.89	Nett Area (m²) 35.14	Shelter Res 0.00	Shelter None	Openin 13.75	gs Are Calc	a Calculation Type ulate Wall Area
9.1 Party Walls													
Description Ty	pe	Construct	tion					U-Value	Kappa	Area	Shelter Res	S	helter
Party Wall 1 Fi	lled Cavity with Ige Sealing	Steel fram	e					0.00	20.00	52.61	0.00		None
9.2 Internal Walls Description		Constructio	on								Ka	рра	Area (m²)
Internal Wall 1		Plasterboar	d on tim	ber frame							<b>(kJ</b> ) 9	<b>/m²K)</b> .00	145.88
10.0 External Roofs												-	



Description	Туре	Construc	ction		U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m <sup>2</sup>	Net	t Shelter a Code	Shelter Factor	Calculatior Type	Openings
External Roof 1	External Flat Roof	Other			0.10	0.00	75.20	75.2	) 0 None	0.00	Enter Gross Area	s 0.00
10.1 Party Ceilings												
Description		Const	ructi	on							Kappa (kJ/m²K)	Area (m²)
Party Ceiling 1		Concr	ete flo	oor slab, carpeted							100.00	50.36
11.1 Party Floors Description		Storey	Cor	struction							Kappa (k.l/m²K)	Area (m²)
Party Floor 1		Lowest occupied	Con	crete floor slab, carpeted							100.00	75.20
12.0 Opening Types												
Description	Data Source	Туре		Glazing		Glazi Gap	ng Fi ) T	lling ype	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 East	Opening Ty Window	pe		Location External Wall 1		Ori	entation East	I	<b>Area (</b> 13.7	<b>m²)</b> 5	Pit	ch )
14.0 Conservatory				None					7			
15.0 Draught Proofing				100					] %			
16.0 Draught Lobby				No								
17.0 Thermal Bridging				User Input								
17.1 List of Bridges			Sou		Longth	Dei	٨di	uetod I	Poforonco			Imported
E16 Corner (normal)			Inde	pendently assessed	2.80	0.00	) 0	.00	vererence.			No
E18 Party wall between E7 Party floor between	n dwellings 1 dwellings (in block	s of flats)	Inde	pendently assessed	2.80 6.38	0.00 0.00	) () ) ()	.00 .00				No No
E23 Balcony within or l	between dwellings,	balcony	Inde	pendently assessed	9.74	0.00	0	.00				No
E25 Staggered party w	vall between dwellin	igs	Inde	pendently assessed	2.80	0.00	) 0	.00				No
(in blocks of flats)	ediate floor betweer	n dwellings	Inde	pendently assessed	18.79	0.00	) ()	.00				NO
E14 Flat roof P4 Party wall - Roof (ir	sulation at ceiling I	evel)			17.46 18 79	0.00	) () ) ()	.00 00				No No
E2 Other lintels (includ	ling other steel linte	ls)			6.55	0.00	) 0	.00				Yes
E3 Sill E4 Jamb					12.60	0.00	) 0	.00				Yes
Y-value				0.05					W/m²K			
Description				а								
									7			
18.0 Pressure Testing				Yes								
Designed AP <sub>50</sub>				2.50					m³/(h.m <sup>2</sup>	²) @ 50 F	Pa	
Property Tested?				Yes								
Test Method				Blower Door								
19.0 Mechanical Ventilati	ion											
Mechanical Ventilatio	on								-			
Mechanical Venti	ilation System Pres	ent		Yes								
Approved Installa	ation			No								
Mechanical Venti	ilation data Type			Database								
Туре				Balanced mechanical ver	tilation with	heat rec	overy					
MV Reference N	umber			500501								
Configuration				1								
Manufacturer SF	Р			0.50								
Duct Type				Rigid								
MVHR Efficiency	,			90.00								
Wet Rooms				1								
SFP from Installe	er Commissioning C	Certificate		No					7			
MVHR System L	ocation			Inside heated envelope (i	nstalled exc	lusively)						
									_			



Duct Ins	tallation Specification		l evel 1				7	
	ovtract vontilation Decentralized							
19.1 Mechanical SFP	Ean/Room Type Count							
0.19	In Room Fan 1							
0.18	In Room Fan Other 1							
0.00	Wet Room In Duct Fan Kitchen 0							
0.00	In Duct Fan Other 0 Wet Room							
0.11	Through Wall Fan 0							
0.14	Through Wall Fan 0 Other Wet Room							
20.0 Fans, Open	Fireplaces, Flues							
21.0 Fixed Coolir	ng System		No					
22.0 Lighting								
No Fixed Ligh	ting		No					
			Name Lighting 1	Efficac 85.00	y	Power 8	Capacity 680	Count 6
24.0 Main Heatin	g 1		None					
25.0 Main Heatin	g 2		None					
26.0 Heat Networ	rks		Space and Water	Combined			7	
Space Comm	unity Heating							
Distribut	ion Loss		Formal Declaration	on by Property	Developer			
Distribut	ion Loss Value		1.05					
SAP Co	de		2308					
	Heat Source Fuel Type Hea	ating Us	e Efficiency	Percentage ( Heat	Of Heat	Heat El Power Ratio	ectrical Fuel Facto	r Efficiency type
Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5	Heat pump Electricity Spa None Spa None Spa None Spa None Spa	ace and ace and ace and ace and ace and ace and	Water 324.00 Water Water Water Water	100.00				
28.0 Water Heatin	ng							
Water Heating	]		Community Heat	ing				
SAP Code			901					
Flue Gas Hea	t Recovery System		No					
Waste Water I	Heat Recovery Instantaneous Syster	m 1	No					
Waste Water I	Heat Recovery Instantaneous Syster	m 2	No				7	
Waste Water I	Heat Recovery Storage System		No				7	
Solar Panel			No				-	
Water use <=	125 litres/person/day		No					
Summer Imme	ersion		No					
Cold Water So	ource		From mains					
Bath Count			1					
Supplementar	v Immersion		No					
Immersion On	ly Heating Hot Water		No					
29.4 Chauses								
28.1 Showers Description	Show	ver Type			Flow Rate	Rated Power	Connected Connect	ted To
Shower	Comb	oi boiler (	or unvented hot wa	ater system	[ <b>//min]</b> 11.00	[KAA]	No	
28.3 Waste Wate	r Heat Recovery System							
29.0 Hot Water C	ylinder		None				]	
Cylinder Stat			No					

No

Cylinder In Heated Space



Independent	Time Control			No					]		
In Airing Cupl	board			No					]		
31.0 Thermal Sto	ore			None					]		
34.0 Small-scale	Hydro			None					]		
Electricity Ge	nerated			0.00					]		
Apportioned				0.00					kWh/Year		
Connected to	dwelling's ele	ctricity meter		Yes					]		
Electricity Ge	neration			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



Property Reference	AC Third FI	oor Mid Terrac	e						Issued	l on Date	15/1	2/202	3
Assessment Reference	Be Green					Prop	Type F	Ref	Top Floo	or Mid Ter	race		-
Property	Ground Flo	or End Terrace	e. Sover	eign Harbour. Ea	astbourn	e							
						-							
SAP Rating			84 B		DER		3.33			TER	1	2.46	
Environmental			98 A	q	% DER <	< TER					7	3.27	
CO <sub>2</sub> Emissions (t/year)			0.18		DFEE		26.0	5		TFEE	2	8.01	
Compliance Check			See BF	REL	% DFEE	< TFEE					6	.99	
% DPER < TPER			45.72		DPER		35.7	0	-	TPER	6	5.78	
Assessor Details	Mr. George Ken	t								Assessor	r ID E	3Q97-0	0001
Client													
SUMMARY FOR INPUT	ATA FOR: N	ew Build (A	s Desi	gned)									
Orientation			Unknov	vn									
Property Tenture			ND										
Transaction Type			6										
Terrain Type			Suburb	an									
1.0 Property Type			Flat, Mi	d-Terrace									
Position of Flat			Top-floo	or 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			Averag	e or unknown									
6.0 Thermal Mass Parameter			Precise	calculation									
Thermal Mass			N/A						k	J/m²K			
7.0 Electricity Tariff			Standa	rd									
Smart electricity meter fitted			No										
Smart gas meter fitted			No										
				Basement: Ground floor: 1st Storey: 2nd Storey: 3rd Storey: 4th Storey: 5th Storey: 6th Storey: 7th Storey:	Heat L	0.00 m 7.23 m 0.00 m 0.00 m 0.00 m 0.00 m 0.00 m 0.00 m 0.00 m	rimetei	r Int	ternal Flo 0.00 n 55.80 i 0.00 n 0.00 n 0.00 n 0.00 n 0.00 n 0.00 n	or Area n <sup>2</sup> n <sup>2</sup> n <sup>2</sup> n <sup>2</sup> n <sup>2</sup> n <sup>2</sup> n <sup>2</sup> n <sup>2</sup>	Averaç	e Sto 0.00 2.80 0.00 0.00 0.00 0.00 0.00 0.00	rey Height m m m m m m m m m
8.0 Living Area			27.04						m	1 <sup>2</sup>			
9.0 External Walls Description Type External Wall 1 Stee	<b>Con</b> I Frame Othe	struction			U-Value (W/m²K) (I 0.15	<b>Kappa</b> kJ/m²K) A 140.00	Gross Area(m²) 20.24	Nett Area (m²) 12.18	Shelter Res 0.00	Shelter None	Openin 8.06	gs Are Calc	a Calculation Type ulate Wall Area
9.1 Party Walls													
Description	Туре	Construct	tion					U-Value	Kappa	Area	Shelter	S	helter
Party Wall 1	Filled Cavity wit Edge Sealing	th Steel fram	e					0.00	20.00	63.48	0.00		None
9.2 Internal Walls		Construct									I.		A reg (
Description		Constructio	n								Ka (kJ	ippa /m²K)	Area (m²)
Internal Wall 1		Plasterboar	d on tim	ber frame							9	.00	109.79
10.0 External Roofs													



Description	Туре	Construc	tion	U-Value (W/m²K)(	Kappa (kJ/m²K)A	Gross rea(m²)	Nett Area	shelter Code	Shelter Factor	Calculation Type	Openings
External Roof 1	External Flat Roof	Other		0.10	0.00	55.80	55.80	0 None	0.00	Enter Gross Area	s 0.00
11.1 Party Floors											
Description		Storey	Construction							Kappa (k.l/m²K)	Area (m²)
Party Floor 1		Lowest occupied	Concrete floor slab, carpeted							100.00	55.80
12.0 Opening Types											
Description	Data Source	Туре	Glazing		Glazing Gap	g Fillin Tvo	ng De	G-value	Frame Type	Frame Factor	U Value (W/m <sup>2</sup> K)
Window	Manufacturer	Window	Double glazed		•	Air Fi	lled	0.45	Wood	0.70	`1.10 ´
13.0 Openings											
<b>Name</b> East	<b>Opening Ty</b> Window	pe	Location External Wall 1		Orier E	ntation ast		<b>Area (</b> 8.06	<b>m²)</b> S	Pit	<b>ch</b> )
14.0 Conservatory			None					]			
15.0 Draught Proofing			100					%			
16.0 Draught Lobby			No					ī			
								-			
17.0 Thermal Bridging			User Input								
17.1 List of Bridges Bridge Type			Source Type	Lenath	Psi	Adius	sted R	Reference:			Imported
E18 Party wall betwee	en dwellings	holoopy	Independently assessed	5.60	0.00	0.0	0				No
support penetrates wa	all insulation	Dalcony	independentity assessed	9.74	0.00	0.0	0				NO
E23 Balcony within or support penetrates wa	between dwellings, all insulation	balcony	Independently assessed	7.23	0.00	0.0	0				No
P3 Party wall - Interme (in blocks of flats)	ediate floor between	dwellings	Independently assessed	22.67	0.00	0.0	0				No
E14 Flat roof	noulation at aciling l	aval)		7.23	0.00	0.0	0				No
E2 Other lintels (include	ding other steel linte	ever) ls)		3.84	0.00	0.0	0				Yes
E3 Sill E4 Jamb				3.84 8.40	0.00 0.00	0.0 0.0	0 0				Yes Yes
Y-value			0.05					W/m²K			
Description			а								
19 0 Brocouro Tooting			Voc					1			
			165						2) @ 50 [	De	
Designed AP 50			2.50					]/(1.111	) @ 50 i	Pa	
Property rested?			res					J			
lest Method			Blower Door								
19.0 Mechanical Ventilat	tion										
Mechanical Ventilation	on tilation System Bros	ont	Voc					1			
	ation	ent	Ne					J			
Approved Instan			N0					J			
	liation data Type		Database					J			
Type			Balanced mechanical ve	ntilation with	heat recov	/ery		J			
MV Reference N	lumber		500501								
Configuration			1								
Manufacturer SF	=P		0.50								
Duct Type			Rigid								
MVHR Efficiency	ý		90.00					1			
Wet Rooms			1								
SFP from Install	er Commissioning C	Certificate	No					]			
MVHR System L	ocation		Inside heated envelope (	installed exc	lusively)			1			
Duct Installation	Specification		Level 1								
19.1 Mechanical extract	ventilation - Decer	ntralised									
<b>эгт F</b> 0.19 li k	r <b>an/ĸoom Type</b> n Room Fan Kitchen	1									



0.18	In Room Fai	n Other 1											
0.00	In Duct Fan	Kitchen 0											
0.00	In Duct Fan Wet Room	Other 0											
0.11	Through Wa Kitchen	all Fan 0											
0.14	Through Wa Other Wet R	all Fan 0 Room											
20.0 Fans, Open Fi	replaces, Flues												
21.0 Fixed Cooling	System			No									
22.0 Lighting													
No Fixed Lighting					No <b>Name</b> Lighting 1			fficacy Pow 85.00 8			Capac 680		Count 6
24.0 Main Heating 1	I			None									
25.0 Main Heating 2	2			None									
26.0 Heat Networks	5			Space	Space and Water Combined								
Space Commur	nity Heating												
Distributior	n Loss			Forma	I Declarat	ion by Pro	operty De	eveloper					
Distributior	1 Loss Value			1.05									
SAP Code				2308	2308								
	Heat Source	Fuel Type	Heating Us	se E	fficiency	Percent He	age Of at	Heat	Heat Power Potio	Elec	trical	Fuel Factor	Efficiency type
Heat source 1 Heat source 2 Heat source 3 Heat source 4 Heat source 5	Heat pump None None None None	Electricity	Space and Space and Space and Space and Space and	Water Water Water Water Water	324.00	100	.00		Ratio				
28.0 Water Heating													
Water Heating				Comm	unity Hea	iting							
SAP Code				901									
Flue Gas Heat Recovery System													
Waste Water Heat Recovery Instantaneous System 1													
Waste Water Heat Recovery Instantaneous System 2													
Waste Water Heat Recovery Storage System													
Solar Panel					No								
Water use <= 125 litres/person/day													
Summer Immersion													
Cold Water Source					mains								
Bath Count													
Supplementary Immersion													
Immersion Only	Heating Hot Wat	er		No									
28.1 Showers Description		S	Shower Type	•			FI	ow Rate	Rated Pov	wer C	onnecte	d Connecte	d To
Shower		C	Combi boiler	or unve	nted hot v	vater syste	em	11.00	[KVV]		No		
28.3 Waste Water H	leat Recovery S	system											
29.0 Hot Water Cyli	nder			None									
Cylinder Stat					No								
Cylinder In Heated Space					No								
Independent Time Control					No								
In Airing Cupboa	ırd			No									
31.0 Thermal Store				None									



34.0 Small-scale Hydro							]				
Electricity Generated							]				
Apportioned							kWh/Year				
Connected to dwelling's electricity meter							]				
Electricity Ge	neration			Annual					]		
Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Recommendations Lower cost measures

None

Further measures to achieve even higher standards None