



SUSTAINABILITY STATEMENT

Proposed Extension,
Shinfield View Care Home, Shinfield

BERKLEY
• CARE GROUP •

1694-REP-001
REVISION P01
13/04/2026

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1.0 Introduction

This report has been prepared to detail the thermal modelling undertaken on the proposed care home extension at Shinfield View Care Home, Shinfield for our client Berkley Care Group with the aim of demonstrating the proposed route to compliance with Building Regulations “Approved Document L vol 2 – 2021 edition incorporating 2023 amendments” and local planning policy requirements.

Thermal modelling has been undertaken using EDSL Tas software, with the analysis carried out in accordance with CIBSE AM11 Building Performance Modelling 2015 and all other appropriate guidance.

The modelling and calculations have been produced based upon the parameters and assumptions detailed within this report.

The report takes into account the recognised energy hierarchy to “Be Lean, Be Clean, Be Green”, i.e. to minimise the building’s energy usage before applying renewable technologies to the design.

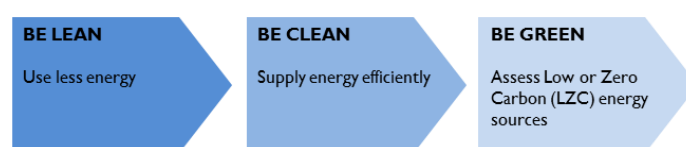


Figure 1: Energy Hierarchy

Further work will be required at later stages in the design and build process to ensure that the requirement to comply with the relevant targets and that all statutory guidelines or local planning enforcement requirements are met.

This document explores a proposed route to compliance and further investigates the feasibility of renewable technologies. This document identifies the current energy strategy intent at design concept stage as well as feasibility on further options which may be investigated should the contractor ultimately so wish during detailed design, subject to client approval.

2.0 Description of the Development

The development consists of a extension to an existing residential care home building. The main extension incorporates additional bedrooms to the ground floor, with such as offices, centralised laundry and kitchen, staff and plant areas to the first floor. A further small extension provides further bistro accommodation to the rear of the current bistro near the main entrance.

The assessment has been based on the Hay Associates architectural information current at the time of writing, specifically but not limited to:

- B123-P01-B-Proposed Site Plan
- B123-P02-B-Proposed Floor Plans
- B123-P03-A-Proposed Roof Plan
- B123-P04-A-Proposed Elevations
- B123-P05-A-Proposed Elevations
- B123-P06-B-Proposed Elevations
- B123-P07-B-Proposed Elevations

3.0 Modelling Methodology

Using the above information, a fully detailed model was produced in EDSL Tas version 9.5.76. The model was created by a fully qualified Low Carbon Consultant (LCC) and Level 5 Low Carbon Energy Assessor (LCEA), accredited via the software provider and CIBSE. The assessor is a Chartered Engineer, with 25 years experience in building services design and is not professionally connected to any low or zero carbon technology or manufacturer.

Assessments were undertaken to assess the building and to demonstrate a route to compliance with the requirements of Building Regulations “Approved Document L vol 2 – 2021 edition incorporating 2023 amendments” as well as consideration of the local planning policy.

In order to do this, a number of assumptions for the building fabric, air permeability and mechanical and electrical services performance have been made as noted in this report. These will all require verification and development during the detailed design of the building during the next stage.

4.0 Energy Use in the Built Environment

In line with hierarchy of intervention it is essential to ensure that an efficient building and building services systems have been designed and proposed prior to the consideration of low and zero technologies. Design measures that should be considered include, but are not limited to:

- Good insulation of walls, roofs and floors to reduce heat losses (but not at the expense of summertime overheating).
- Maximisation of potential for natural ventilation (where ambient noise levels and room function permit).
- Minimisation of requirements for mechanical cooling, by the application of good ventilation techniques.
- Reduction in electrical power usage via specification of efficient lighting controls, high efficiency luminaires and optimisation of daylighting through careful façade and building design.
- Specification of high efficiency plant/equipment.
- Minimising uncontrolled infiltration by robust construction details.
- Use of low energy ICT equipment.

To this end, the proposed design should promote reduced CO₂ emissions from delivered energy. The energy usage figures within this report have been based on reasonable but not unrealistic assumptions in line with good industry custom and practice at the present time.

5.0 Policy Drivers

Both national and local policy requirements have been considered from the outset in the development of the site.

The site has been assessed to comply with the latest Part L regulations to promote highly sustainable and low carbon buildings. Building fabric and materials have been selected to exceed Part L minimum performance requirements, minimising the energy requirements for space conditioning.

The Wokingham Borough Council local planning policy has also been considered, in particular the requirements of policies CC04 and CC05 of the Adopted Managing Development Delivery Local Plan 2014 which are discussed individually in further detail below.

Policy CC04 of the MDD Local Plan and the Sustainable Design and Construction SPD require sustainable design and conservation and R21 of the Borough Design Guide SPD requires that new development contribute to environmental sustainability and the mitigation of climate change.

Whilst not specifically targeted due to the nature of this being an extension, the proposal is designed with consideration towards BREEAM (the Building Research Establishment Assessment Method) requirements which is discussed in this report.

A water consumption calculation is also provided which shows the proposals exceed the statutory requirements for water resource management.

Policy CC05 requires a minimum of 10% reduction in carbon emissions through renewable or low carbon technologies. The proposal includes the use of high efficiency air source heat pumps, which provide all the heating and hot water via a low carbon source, supplemented by PV panels as required to achieve compliance and in excess of a 10% betterment over and above compliance with Part L carbon emission requirements.

6.0 **Building and Services Design**

The building services for the development should be proposed with energy efficiency at the forefront, with plant and systems selected to have efficiencies in excess of those required by legislation to maximise carbon reduction. A summary of the preliminary servicing strategy is provided below, which is in line with the performance specification provided as part of the tender information.

6.1 **Description of Services**

Heating will be provided to the main extension by high efficiency air source heat pumps, generally serving underfloor heating throughout the building. The units shall be sized to satisfy the peak heating and hot water demand of the building simultaneously. Domestic hot water shall be generated via high efficiency storage calorifiers.

Generally, the building shall be naturally ventilated wherever practical – this shall include bedrooms, day spaces etc. Ventilation to wet areas (ensuites, WCs, sluices, bathrooms etc.) shall be provided locally via ceiling mounted/local extract fans. Corridors and the kitchen store shall be provided with positive supply ventilation.

The kitchen and laundry shall be provided with heating and cooling via a local split air source heat pump systems.

The bistro extension shall also be provided with heating and cooling via a local split air source heat pump system.

High efficiency/LED lighting has been assumed throughout. PIR on/off devices have been assumed to ensuites, toilet areas, stores and staircase areas. to minimise energy use and only operate the lighting when required.

7.0 **Building Fabric Input Parameters**

The following u-values have been assumed as part of this assessment:

Element	Part L Limiting Value (W/m ² .K)	Proposed Value (W/m ² .K)
External Walls	0.26	0.19
Floors	0.18	0.16
Roofs	0.16	0.16
Windows/Doors	1.6	1.4 (0.38 g value)

The above values have been agreed with the architect at the concept stage as realistically feasible for this scheme.

External windows and doors have been modelled to represent the information and opening sections as detailed on the elevations. From various overheating model runs and analysis of the BRUKL document, a g-value of 0.38 was found to be adequate to achieve compliance with Criterion 3 in all rooms.

Equally, uncontrolled ventilation losses should be limited and the new building constructed to meet stringent air permeability targets. Whilst Part L limiting requirements are 8m³/m²/hr at 50Pa, the notional building used for analysis includes a significantly lower rate (3m³/m²/hr at 50Pa), therefore it would be advantageous for the project to target an improvement over the limiting value. A rate of 5m³/m²/hr at 50Pa has been assumed for the purpose of this analysis which should be achieved with modern forms of construction

8.0 Renewable and Low Carbon Technologies Feasibility

This section provides a brief overview of available renewable and low/zero carbon technologies, and discusses the advantages and disadvantages that are specific to the project.

The technical feasibility of installing each LZC technology for the proposed site has been assessed in order to discount any unsuitable options at an early stage. A summary of the feasibility process is presented in the following table:

Technology	Brief Description	Benefits	Issues/Limitations	Feasible for site
Solar Photovoltaic	Photovoltaic panels convert solar radiation into electrical energy	Low maintenance. No moving parts. Easily integrated into building design.	Any overshadowing affects panel performance. Panels ideally inclined and facing southerly direction.	Yes
Solar Thermal	Solar thermal energy can contribute towards space heating and hot water requirements.	Low maintenance.	Must be sized for the building base load hot water requirements Panels ideally inclined and facing southerly direction	Yes
Wind Turbine	Wind generation equipment operates on the basis of wind turning a turbine to generate electricity. Small scale (1kW – 15kW) wind turbines can be pole or roof mounted.	Low maintenance/ On-going cost. Excess electricity can be exported to the grid	Planning issues. Aesthetic impact. Background noise Potential for light flicker and disturbance Space limitations on site. Minimum wind speed requirements. Wind survey to be undertaken to verify 'local' viability.	No
Biomass	Modern wood-fuel boilers are highly efficient, clean and almost carbon	Stable long term running costs. Potential good CO ₂ saving.	Large area needed for fuel delivery and storage. Reliable fuel supply chain required. Regular maintenance required Significant plant space required. Air pollution / Clean Air Act limits use.	No
Ground Source Heat Pump (GSHP)	GSHP systems tap into the earth's considerable energy store to provide both heating and cooling to buildings.	Minimal maintenance. Unobtrusive technology. Flexible installation options to meet available site footprint.	Large area required for horizontal pipes Full ground survey required to determine geology. More beneficial to the development if cooling is required. Integration with piled foundations must be done at an early stage.	No
Air Source Heat Pump	Electric air source heat pumps extract thermal energy from the surrounding air and transfer it to the working fluid (air or water).	Efficient use of fuel. Relatively low capital costs.	Specialist maintenance. Some additional plant space required. Potential noise issues from external condensers	Yes

Table 1: Summary of Renewable and Low Carbon Technology Energy Options

Technology	Brief Description	Benefits	Issues/Limitations	Feasible for site
Combined Heat and Power	A Combined Heat and Power (CHP) installation is effectively a mini on-site power plant providing both electrical power and thermal heat. CHP is strictly an energy efficiency measure rather than a renewable energy technology.	Potential high CO ₂ saving available. Efficient use of fuel. Excess electricity can be exported to the grid	Maintenance intensive. Sufficient base thermal and electrical demand required. Some additional plant space required.	Yes
District Heating	A system for distributing heat generated in a centralized location through a system of insulated pipes for residential and commercial heating requirements. No existing district heating networks available.	Efficient use of boiler plant	Significant pipework network required, with associated losses. Not available/suitable for this site.	No

Table 1 (cont...): Summary of Renewable and Low Carbon Technology Energy Options

On the basis of the above, it is proposed to utilise an air source heat pump for the heating and hot water supplemented by PV panels as required to achieve compliance with Building Regulations “Approved Document L vol 2 – 2021 edition incorporating 2023 amendments” and reduce carbon emissions for the proposed building.

9.0 Part L Compliance

All input data is to be reviewed and developed as the detailed design progresses. The below is provided for information only, and is typical of other similar developments in order to provide a realistic route to compliance at this stage, and outlines the inputs used within the energy model to arrive at the final compliance output. Refer to the subsequent sections of this report which outlines the hierarchical steps to reach this solution under the policy requirements.

9.1 Summary of Key Input Data

As well as the u-values and design air permeability previously indicated, the following information summarises the key input information assumed for this analysis:

Weather File

The NCM Swindon TRY weather file has been utilised for this analysis and is considered to accurately represent the weather for the proposed location based on the BRE SBEM Weather Locations Lookup tool.

HVAC Systems

Wet Underfloor System/Domestic Hot Water:

Heat Source: Air Source Heat Pump

Seasonal CoP: 2.75

Circulation pump: Variable Speed, pressure control in system

System Controls: Central time control, Weather compensation control

Domestic Hot Water
Storage: 500 litres
Circulating return

Split Systems (Bistro, kitchen, laundry):
Heat source: Heat pump (electric): air source
Fuel type: Electricity
CoP: 3.75
SEER: 5.0

Mechanical extract is provided to bathrooms, WCs etc.
Mechanical extract: SFP: 0.3 W/l/s

Positive supply ventilation (corridors, kitchen store)
Supply only systems: SFP 0.5W/l/s

Kitchen ventilation:
Supply and extract system: SFP 1.0W/l/s, no heat recovery

Lighting

Whilst a full lighting design is yet to be undertaken, efficacies assumed as follows:

General lighting: average efficacy of 115 lm/circuit Watt
Bedrooms/Ensuites average efficacy of 100 lm/circuit Watt

PIR occupancy detection:
Stores, WCs, Sluices, Ensuites, Change areas, Stairs, Staff Circulation, Staff Offices

Manual switched:
All other areas

Photovoltaic Panels

A photovoltaic panel array of circa 16No. panels (subject to final specialist design) which equates to a yield of 6/875 kWh per annum which has been used for modelling purposes.

All input data is to be reviewed and developed as the detailed design progresses. It should be noted that the above input data is expected to be bettered during detailed design (i.e. plant efficiencies, ventilation SFPs and heat recovery efficiencies, lighting efficacies etc.) which should have a positive effect on the overall result.

9.2 Results and Compliance

Based on the above inputs and a photovoltaic panel array to achieve a yield in the order of 17,800 kWh per annum, the following carbon dioxide emission rate figures were determined as follows:

TER (Target CO ₂ emission rate)	9.97 kg.CO ₂ /m ² per annum
BER (Building CO ₂ emission rate)	8.93 kg.CO ₂ /m ² per annum PASS
TPER (Target primary energy rate)	108.41 kWh/m ² per annum
BPER (Building primary energy rate)	96.01 kWh/m ² per annum PASS

This demonstrates that the above proposal represents a feasible route to compliance with Building Regulations "Approved Document L vol 2 – 2021 edition incorporating 2023 amendments" for further refinement and development during detailed design.

A copy of the BRUKL report is provided in Appendix A for information.

10.0 Policy Compliance – CC04

Policy CC04 of the MDD Local Plan and the Sustainable Design and Construction SPD require sustainable design and conservation and R21 of the Borough Design Guide SPD requires that new development contribute to environmental sustainability and the mitigation of climate change.

Whilst it is not proposed to target a rating under BREEAM or similar assessments for this extension given the site and operational constraints of doing so, with that considered however the client has made a commitment to comply with as many BREEAM measures as possible in this scheme to maximise the sustainability and reduce the energy consumption/carbon emissions of the building as far as practicable.

A number of key parameters have influenced the building design and form to date:

- The design of the extension is highly sustainable whereby the energy efficiency of the building combined with low carbon heat sources plus the energy produced via the PV panels will offset a high portion of the carbon emissions generated through its use.
- At early stages of the design, consideration has been given to passive design measures to limit the energy usage and requirements before the application of renewable and LZC technologies.
- The building fabric has been specified with a high level of insulation and high performing u-values to maximise the fabric performance of the building in its initial form.
- The extension has been orientated on the site to give maximum consideration to the use of natural light (in order to reduce lighting energy load as far as practicable) while still meeting the operational requirements of the building.
- Water saving measures shall also be incorporated, including the use of low water use sanitaryware/taps wherever possible, low flush WC cisterns, flow restrictor inserts to showers.
- The extension shall include high efficiency plant and LED lighting throughout to minimise energy use once the passive design measures have been incorporated.

The above parameters all highlight the clients commitment to sustainability, energy usage and carbon reduction as a core principle of the building design.

With respect to the relevant and achievable BREEAM credits/requirements that would have been available should the building have been assessed under BREEAM, these along with the client commitments are summarised below:

Man 04 Commissioning and Handover

The building shall be commissioned in line with the recommendations of this credit. The building and its systems shall be fully commissioned in line with recognised guidance from BSRIA and CIBSE.

Hea 01 Visual Comfort

The internal and external lighting levels shall be inline with recognised guidance, with appropriate zoning and control. Lighting to offices and similar spaces shall fully comply with the requirements to limit glare on display screens.

Hea 04 Thermal Comfort

Further thermal modelling to inform the design and proposals as would be expected under this credit will be completed to demonstrate compliance with Part O of the building regulations in due course. This shall influence the building services design, zoning and control strategies to ensure an optimal building services design.

Hea 05 Acoustics

Operationally for a care home building, it is not appropriate to achieve some of the credits under this section with respect to room acoustics and internal noise levels. Sound insulation of noise break in and break out from the building shall however be in line with the requirements of this credit.

Hea 07 Safe and Healthy Surroundings

The requirements of this credit will be met by default as an operational requirement by the CQC to provide residents with a safe and secure environment and access to outdoor spaces.

Ene 01 Reduction of Energy Use and Carbon Emissions

As detailed earlier in this report, the client has committed to reducing energy use and carbon emissions inline with the energy hierarchy. The use of renewable and low/zero carbon technologies has been maximised which would have secured a significant number of credits under this section.

Ene 02 Energy Monitoring

The requirements of this credit are mandatory under BREEAM, however are achieved by default via metering and energy monitoring in line with Building Regulations and CIBSE TM39 which mirror the requirements of this credit.

Ene 03 External Lighting

All external lighting will meet the minimum efficacies under Building Regulations and achieve the requirements of this credit by default.

Ene 04 Low Carbon Design

The use of low carbon and renewable technologies, their feasibility and the optimisation of their use for this development has been reviewed as part of this report which would have met many of the requirements under this credit.

Ene 06 Energy efficient Transportation Systems

An energy efficient lift shall be incorporated, which will meet many of the requirements under this credit.

Ene 08 Energy Efficient Equipment

As practicable energy efficient equipment, white goods etc. shall be utilised within the fit-out of this development.

Wat 01 Water Use

Water efficient appliances and sanitaryware that meet the requirements of Building Regulations for maximum water usage per person per day shall be incorporated. Water saving measures shall be incorporated, including the use of low water use sanitaryware/taps wherever possible, low flush WC cisterns, flow restrictor inserts to showers.

Mat 03 Responsible Sourcing of Construction Products

The requirements of this credit shall be adhered to as far as practicable, including the sourcing of legally harvested/certified timber.

Pol 02 Local Air Quality

Due to the all electric approach, the proposed strategy achieves the requirements of this credit by default.

Pol 04 Reduction of Night Time Pollution

The requirements of this credit shall be met by default as the external lighting design shall be undertaken in line with recognise guidance from CIBSE and strict compliance with the ILE guidance on reduction of obtrusive light.

11.0 Policy Compliance – CC05

Policy CC05 requires a minimum of 10% reduction in carbon emissions through renewable or low carbon technologies. The proposal includes the use of high efficiency air source heat pumps, which provide all the heating and hot water via a low carbon source, supplemented by PV panels as required to achieve compliance and in excess of a 10% betterment over and above compliance with Part L carbon emission requirements.

TER (Target CO2 emission rate)	9.97 kg.CO ₂ /m ² per annum
BER (Building CO2 emission rate)	8.93 kg.CO ₂ /m ² per annum 10.5% betterment

12.0 Water Consumption

12.1 Summary

Local planning policy requires consideration be given to minimising water consumption for developments. To this end, water efficiency calculations have been prepared using the guidance document and methodology detailed with 'The Water Efficiency Calculator for new dwellings', published by the Department for Communities and Local Government.

Building Regulations have a maximum usage of 125 litres/person/day, although an optional requirement can be applied to reduce this to 110 litres/person/day.

As can be seen from the calculations provided on the following page, using typical sanitaryware specifications for the proposed care home the proposals comply with the maximum usage limitations as required by Approved Document G and the planning approval with a calculated usage of 109.8 litres/resident/day.

The calculation will need to be reviewed and updated as the project progresses, and it may be necessary to install flow restrictors on some outlets to ensure flow rates and compliance is achieved once final sanitaryware and taps are selected.

12.2 Water Efficiency Calculation

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)	0	4.42	0.00	0
WC (dual flush)	Full flush volume (litres)	6	1.46	0.00	8.76
	Part flush volume (litres)	4	2.96	0.00	11.84
WCs (multiple fittings)	Average effective flushing volume	0	4.42	0.00	0
Taps (excluding kitchen/ utility room taps)	Flow rate (litres/minute)	6	1.58	1.58	11.06
Bath (where shower also present)	Capacity to overflow (litres)	120	0.11	0.00	13.2
Shower (where bath also present)	Flow rate (litres/minute)	8	4.37	0.00	34.96
Bath only	Capacity to overflow (litres)	0	0.50	0.00	0
Shower only	Flow rate (litres/minute)	0	5.60	0.00	0
Kitchen/utility room sink taps	Flow rate (litres/minute)	7.5	0.44	10.36	13.66
Washing machine	Litres/kg dry load	8.17	2.1	0.00	17.16
Dishwasher	Litres/place setting	1.25	3.6	0.00	4.5
Waste disposal unit	Litres/use	If present = 1 If absent = 0	3.08	0.00	0
Water softener	Litres/person/day	0	1.00	0.00	0
(5)	Total calculated use (litres/person/ day) = (Sum column 4)				115.14
	(6)	Contribution from greywater (litres/person/day) from Table 4.6			0
	(7)	Contribution from rainwater (litres/person/day) from Table 5.5			0
	(8)	Normalisation factor			0.91
	(9)	Total water consumption = [(5) – (6) – (7)] x (8) (litres/person/day)			104.8
	(1 0)	External water use			5.0
	(1 1)	Total water consumption (Building Regulation 17.K)= (9) + (10) (litres/person/day)			109.8

Appendix A - BRUKL Report and Draft EPC, As-designed

Project name

Proposed Extension, Shinfield View Care Home

As designed

Date: Mon Apr 13 05:31:39 2026

Administrative information**Building Details**

Address:

Certifier details

Name:

Telephone number:

Address: Betton Consulting Ltd, 4 Langley House,
Wykeham Business Centre, Main Street,
Wykeham, Scarborough, YO13 9QP

Certification tool

Calculation engine: TAS

Calculation engine version: "v9.5.7"

Interface to calculation engine: TAS

Interface to calculation engine version: v9.5.7

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

Foundation area [m²]: 366.74**The CO₂ emission and primary energy rates of the building must not exceed the targets**

Target CO ₂ emission rate (TER), kgCO ₂ /m ² annum	9.97
Building CO ₂ emission rate (BER), kgCO ₂ /m ² annum	8.93
Target primary energy rate (TPER), kWh _{PE} /m ² annum	108.41
Building primary energy rate (BPER), kWh _{PE} /m ² annum	96.01
Do the building's emission and primary energy rates exceed the targets?	BER ≤ TER BPER ≤ TPER

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

Fabric element	U _{a-Limit}	U _{a-Calc}	U _{i-Calc}	First surface with maximum value
Walls*	0.26	0.19	0.19	External Wall
Floors	0.18	0.16	0.16	Ground Floor
Pitched roofs	0.16	0.16	0.16	Roof
Flat roofs	0.18	-	-	No flat roofs in project
Windows** and roof windows	1.6	1.4	1.4	W2
Rooflights***	2.2	-	-	No rooflights in project
Personnel doors^	1.6	-	-	No personnel doors in project
Vehicle access & similar large doors	1.3	-	-	No vehicle access or similar large doors in project
High usage entrance doors	3	-	-	No high usage entrance doors in project

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

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

** Display windows and similar glazing are excluded from the U-value check.

*** Values for rooflights refer to the horizontal position.

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

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

Air permeability	Limiting standard	This building
m ³ /(h.m ²) at 50 Pa	8	5

Building services

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

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

1- Extract (17 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	2.75	-	-	-	-
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.					

2- Nat Vent

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	2.75	-	-	-	-
Standard value	0.93*	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 gas single boiler systems <=2 MW output and overall for multi-boiler systems. For single boiler systems >2 MW or any individual boiler in a multi-boiler system, limiting efficiency is 0.88.					

3- Split (2 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.75	5	-	-	-
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.					

4- Supply Only (5 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	2.75	-	-	0.4	-
Standard value	0.93*	N/A	N/A	1.5^	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for gas single boiler systems <=2 MW output and overall for multi-boiler systems. For single boiler systems >2 MW or any individual boiler in a multi-boiler system, limiting efficiency is 0.88.					
^ Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.					

5- Kitchen (Kitchen)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0	5	-	1	-
Standard value	N/A	5	N/A	1.5^	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
^ Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.					

1- ASHP HWS

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	2.75	0
Standard value	N/A	N/A

Zone-level mechanical ventilation, exhaust, and terminal units

ID	System type in the Approved Documents
A	Local supply or extract ventilation units
B	Zonal supply system where the fan is remote from the zone
C	Zonal extract system where the fan is remote from the zone
D	Zonal balanced supply and extract ventilation system
E	Local balanced supply and extract ventilation units
F	Other local ventilation units
G	Fan assisted terminal variable air volume units
H	Fan coil units
I	Kitchen extract with the fan remote from the zone and a grease filter
NB: Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.	

Zone name	SFP [W/(l/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1		Zone	Standard
Ensuite 67	0.2	-	-	-	-	-	-	-	-	-	-	N/A
Ensuite 68	0.2	-	-	-	-	-	-	-	-	-	-	N/A
Ensuite 69	0.2	-	-	-	-	-	-	-	-	-	-	N/A
Ensuite 70	0.2	-	-	-	-	-	-	-	-	-	-	N/A
Ensuite 71	0.2	-	-	-	-	-	-	-	-	-	-	N/A
Ensuite 72	0.2	-	-	-	-	-	-	-	-	-	-	N/A
Ensuite 73	0.2	-	-	-	-	-	-	-	-	-	-	N/A
Ensuite 74	0.2	-	-	-	-	-	-	-	-	-	-	N/A
Ensuite 75	0.2	-	-	-	-	-	-	-	-	-	-	N/A
Ensuite 76	0.2	-	-	-	-	-	-	-	-	-	-	N/A
Ensuite 77	0.2	-	-	-	-	-	-	-	-	-	-	N/A
Ensuite 78	0.2	-	-	-	-	-	-	-	-	-	-	N/A
Ensuite 79	0.2	-	-	-	-	-	-	-	-	-	-	N/A
Staff Change	0.2	-	-	-	-	-	-	-	-	-	-	N/A
WC 1	0.2	-	-	-	-	-	-	-	-	-	-	N/A
WC 2 Staff	0.2	-	-	-	-	-	-	-	-	-	-	N/A
WC 3 Staff	0.2	-	-	-	-	-	-	-	-	-	-	N/A

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]
Standard value		95	80	0.3
Bedroom 67		100	-	-
Bedroom 68		100	-	-
Bedroom 69		100	-	-
Bedroom 70		100	-	-
Bedroom 71		100	-	-
Bedroom 72		100	-	-
Bedroom 73		100	-	-
Bedroom 74		100	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
Bedroom 75		100	-	-
Bedroom 76		100	-	-
Bedroom 77		100	-	-
Bedroom 78		100	-	-
Bedroom 79		100	-	-
Ensuite 67		100	-	-
Ensuite 68		100	-	-
Ensuite 69		100	-	-
Ensuite 70		100	-	-
Ensuite 71		100	-	-
Ensuite 72		100	-	-
Ensuite 73		100	-	-
Ensuite 74		100	-	-
Ensuite 75		100	-	-
Ensuite 76		100	-	-
Ensuite 77		100	-	-
Ensuite 78		100	-	-
Ensuite 79		100	-	-
Circulation 1		115	-	-
Circulation 2		115	-	-
Circulation 3		115	-	-
Circulation 4		115	-	-
Circulation 5		115	-	-
Circulation 6		115	-	-
Stair 3		115	-	-
Stair 4		115	-	-
Store 1 Kitchen		115	-	-
Store 2		115	-	-
Bistro 2		115	-	-
Staff Room		115	-	-
Laundry		115	-	-
Staff Change		115	-	-
WC 1		115	-	-
WC 2 Staff		115	-	-
WC 3 Staff		115	-	-
Housekeeping/Chef		115	-	-
Plant 1		115	-	-
Plant 2		115	-	-
Maintenance		115	-	-
Kitchen		115	-	-

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?
Bedroom 67	NO (-4%)	NO
Bedroom 68	NO (-52%)	NO
Bedroom 69	NO (-53%)	NO
Bedroom 70	NO (-57%)	NO
Bedroom 71	NO (-52%)	NO
Bedroom 72	NO (-83%)	NO
Bedroom 73	NO (-63%)	NO
Bedroom 74	NO (-63%)	NO
Bedroom 75	NO (-64%)	NO
Bedroom 76	NO (-63%)	NO
Bedroom 77	NO (-63%)	NO
Bedroom 78	NO (-64%)	NO
Bedroom 79	NO (-45%)	NO
Bistro 2	NO (-22%)	NO
Staff Room	NO (-49%)	NO
Laundry	NO (-57%)	NO
Housekeeping/Chef	NO (-53%)	NO
Maintenance	NO (-45%)	NO
Kitchen	NO (-59%)	NO

Regulation 25A: Consideration of high efficiency alternative energy systems

Were alternative energy systems considered and analysed as part of the design process?	YES
Is evidence of such assessment available as a separate submission?	YES
Are any such measures included in the proposed design?	YES

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Floor area [m ²]	785	785
External area [m ²]	1419	1419
Weather	SWI	SWI
Infiltration [m ³ /hm ² @ 50Pa]	5	3
Average conductance [W/K]	411	381
Average U-value [W/m ² K]	0.29	0.27
Alpha value* [%]	35.24	20.24

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

Building Use

% Area Building Type

Retail/Financial and Professional Services
 Restaurants and Cafes/Drinking Establishments/Takeaways
 Offices and Workshop Businesses
 General Industrial and Special Industrial Groups
 Storage or Distribution
 Hotels

100 Residential Institutions: Hospitals and Care Homes

Residential Institutions: Residential Schools
 Residential Institutions: Universities and Colleges
 Secure Residential Institutions
 Residential Spaces
 Non-residential Institutions: Community/Day Centre
 Non-residential Institutions: Libraries, Museums, and Galleries
 Non-residential Institutions: Education
 Non-residential Institutions: Primary Health Care Building
 Non-residential Institutions: Crown and County Courts
 General Assembly and Leisure, Night Clubs, and Theatres
 Others: Passenger Terminals
 Others: Emergency Services
 Others: Miscellaneous 24hr Activities
 Others: Car Parks 24 hrs
 Others: Stand Alone Utility Block

Energy Consumption by End Use [kWh/m²]

	Actual	Notional
Heating	10.86	7.03
Cooling	12.11	14.82
Auxiliary	5.75	9.44
Lighting	14.45	13.95
Hot water	28.57	28.13
Equipment*	154.93	154.93
TOTAL **	71.73	73.37

* 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/m²]

	Actual	Notional
Photovoltaic systems	8.76	0
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
<i>Displaced electricity</i>	<i>8.76</i>	<i>0</i>

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	339.88	317.48
Primary energy [kWh _{PE} /m ²]	96.01	108.41
Total emissions [kg/m ²]	8.93	9.97

HVAC Systems Performance										
System Type	Heat dem MJ/m2	Cool dem MJ/m2	Heat con kWh/m2	Cool con kWh/m2	Aux con kWh/m2	Heat SSEFF	Cool SSEER	Heat gen SEFF	Cool gen SEER	
[ST] No Heating or Cooling										
	Actual	0	0	0	0	0	0	0	0	0
	Notional	0	0	0	0	0	0	----	----	----
[ST] Central heating using water: floor heating, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	146	0	15.4	0	3.7	2.64	0	2.75	0
	Notional	130.5	0	13.7	0	2.3	2.64	0	----	----
[ST] Central heating using water: floor heating, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	68.2	0	7.2	0	3.2	2.64	0	2.75	0
	Notional	44.8	0	4.7	0	1.9	2.64	0	----	----
[ST] Split or multi-split system, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	67.3	165.6	5	9.2	0	3.75	5	3.75	5
	Notional	238.5	337.3	25.1	21.3	0	2.64	4.4	----	----
[ST] Central heating using water: floor heating, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	94.5	0	9.9	0	7.8	2.64	0	2.75	0
	Notional	10.2	0	1.1	0	22.2	2.64	0	----	----
[ST] Split or multi-split system, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	0	2475.1	0	137.5	27.9	0	5	0	5
	Notional	17.7	2519.5	1.9	159.1	50.2	2.64	4.4	----	----

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

Energy Performance Certificate

Non-Domestic Building



Certificate Reference Number:

9256-9340-4529-8652-1863

This certificate shows the energy rating of this building. It indicates the energy efficiency of the building fabric and the heating, ventilation, cooling and lighting systems. The rating is compared to two benchmarks for this type of building: one appropriate for new buildings and one appropriate for existing buildings. There is more advice on how to interpret this information in the guidance document *Energy Performance Certificates for the construction, sale and let of non-dwellings* available on the Government's website at www.gov.uk/government/collections/energy-performance-certificates.

Energy Performance Asset Rating

More energy efficient

A+

Net zero CO₂ emissions

A 0-25

9

This is how energy efficient the building is.

B 26-50

C 51-75

D 76-100

E 101-125

F 126-150

G Over 150

Less energy efficient

Technical information

Main heating fuel:	Grid Supplied Electricity
Building environment:	Heating and Natural Ventilation
Total useful floor area (m ²):	785
Building complexity:	Level 5
Building emission rate (kgCO ₂ /m ² per year):	8.93
Primary energy use (kWh _{PE} /m ² per year):	96.01

Benchmarks

Buildings similar to this one could have ratings as follows:

10 If newly built

40 If typical of the existing stock

Administrative information

This is an Energy Performance Certificate as defined in the Energy Performance of Buildings Regulations 2012 as amended.

Assessment Software: TAS v9.5.7 using calculation engine TAS v9.5.7

Property Reference:

Assessor Name:

Assessor Number: LCEA031715

Accreditation Scheme: CIBSE Certification Limited

Assessor Qualifications: NOS5

Employer/Trading Name: Betton Consulting Ltd

Employer/Trading Address: 4 Langley House, Main Street, Wykeham Business Centre, Wykeham, Scarborough, YO13 9QP

Issue Date: 13 Apr 2026

Valid Until: 12 Apr 2036 (unless superseded by a later certificate)

Related Party Disclosure: Not related to the owner

Recommendations for improving the energy performance of the building are contained in the associated Recommendation Report: 3639-4523-5453-9032-0229

About this document and the data in it

This document has been produced following an energy assessment undertaken by a qualified Energy Assessor, accredited by CIBSE Certification Limited. You can obtain contact details of the Accreditation Scheme at www.cibsecertification.com.

A copy of this certificate has been lodged on a national register as a requirement under the Energy Performance of Buildings Regulations 2012 as amended. It will be made available via the online search function at www.ndepcregister.com. The certificate (including the building address) and other data about the building collected during the energy assessment but not shown on the certificate, for instance heating system data, will be made publicly available at www.opendatacommunities.org.

This certificate and other data about the building may be shared with other bodies (including government departments and enforcement agencies) for research, statistical and enforcement purposes. For further information about how data about the property are used, please visit www.ndepcregister.com. To opt out of having information about your building made publicly available, please visit www.ndepcregister.com/optout.

There is more information in the guidance document *Energy Performance Certificates for the construction, sale and let of non-dwellings* available on the Government website at: www.gov.uk/government/collections/energy-performance-certificates. It explains the content and use of this document and advises on how to identify the authenticity of a certificate and how to make a complaint.

Opportunity to benefit from a Green Deal on this property

The Green Deal can help you cut your energy bills by making energy efficiency improvements at no upfront costs. Use the Green Deal to find trusted advisors who will come to your property, recommend measures that are right for you and help you access a range of accredited installers. Responsibility for repayments stays with the property - whoever pays the energy bills benefits so they are responsible for the payments.

To find out how you could use Green Deal finance to improve your property please call 0300 123 1234.