

SUSTAINABILITY STATEMENT

Project: **Care UK, Copthorne**
Project No.: **1647**
Date: **29/04/2025**
Engineer: **JW**
Report Ref: **1647-PS-001**
Revision: **P01 29/04/2025 First Issue**



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Introduction/Executive Summary

This report has been prepared to assist in the discharge of planning conditions 10 and 25 of the planning conditions reference DM/23/2360 for the proposed care home development for Care UK on behalf of our client Royston Jones and their client Carter Lauren Construction.

Each condition has been dealt within turn below.

The building is proposed with a photovoltaic array in order to satisfy both Building Regulation compliance and meet the requirements of the conditions as outlined below.

Condition 10

Condition 10 states:

No development shall be carried out above ground slab level unless and until there has been submitted to and approved in writing by the Local Planning Authority full details of the PV scheme. The scheme to be implemented as approved.

Condition 25

Condition 25 states:

25 No development shall take place above slab level unless and until the applicant has submitted a Sustainability Statement to be approved in writing by the Local Planning Authority, that sets out clearly what sustainable measures will be incorporated into the development aimed at minimising the amount of energy that the buildings will use and the water consumption of occupiers. These measures shall be implemented in accordance with the approved details prior to occupation.

Condition Compliance

As part of the design process, a detailed SBEM calculation has been carried out. To achieve this, a fully detailed dynamic thermal model was produced in EDSL Tas version 9.5.6. 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 compliance with the local planning policy.

The modelling and design 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.

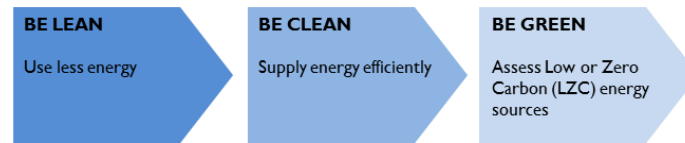


Figure 1: Energy Hierarchy

To this end, the building has adopted a fabric first approach utilising high performance u-values in excess of Building Regulation limiting requirements. From there, a number of servicing and energy options were investigated. From the conclusion of this process, the building is provided with heating and hot water via high efficiency gas fired heating and hot water plant, which is ideally suited to the operational requirements of the home. To supplement this, roof mounted photovoltaic panels are proposed with a minimum yield of 50,800kWh per annum energy generation in order to achieve compliance with Part L2A:2021 of the Building Regulations.

The as-designed BRUKL report detailing the calculation is appended to this report.

The proposed photovoltaic panel layout is detailed below, which uses very efficient high output 650W panels (Longhi Solar LR7-72HVVH-650M). 78No. panels have been located on the flat roof elements, with an additional 18No. panels located on pitched roof elements to achieve in excess of the yield required.

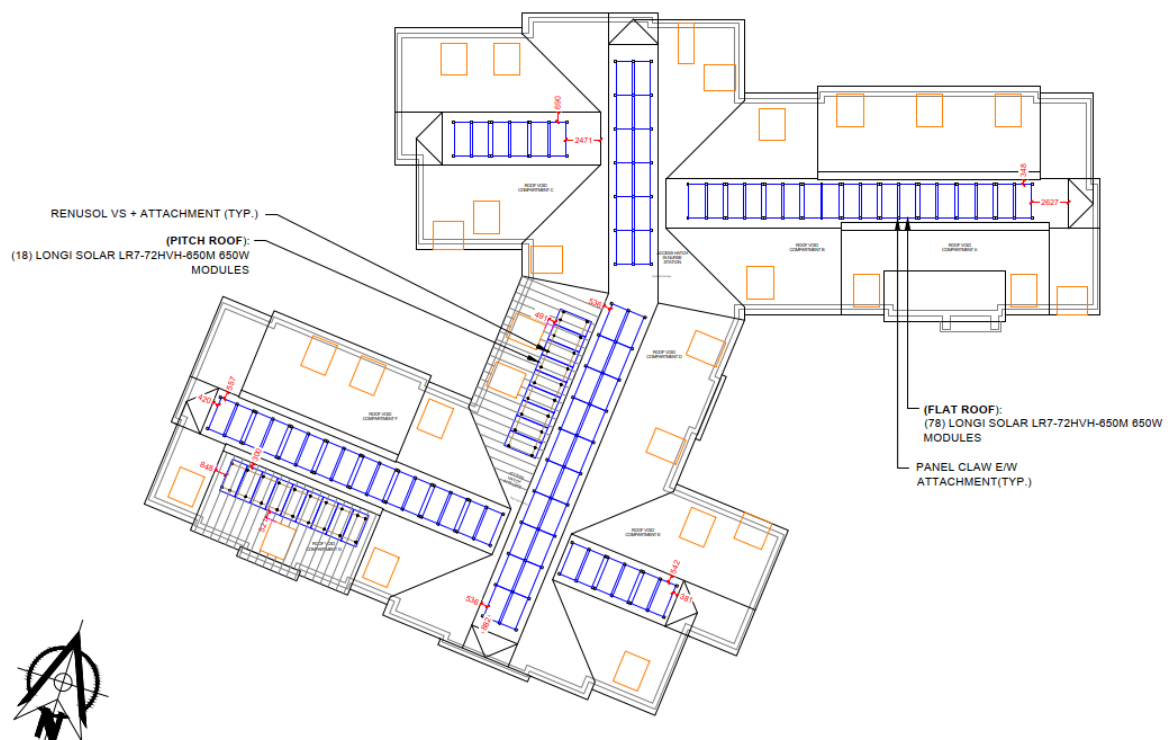


Figure 2: Proposed PV Layout

The above demonstrates compliance with condition 10 accordingly, and outlines the energy measures proposed and which will be implemented to make the building a highly sustainable, energy efficient development which also suits the operational needs of such a building to demonstrate compliance with condition 25.

Efficient use of water is also a key element of sustainability, and covered by condition 25. Building Regulations have a maximum usage of 125 litres/person/day, however the Mid Sussex District Plan policy DP39 limits water use to 110 litres/person/day

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.

Where specific appliance information is not available, figures from the above guidance document have been utilised in line with the identified methodology (i.e. washing machines).

A summary of the calculated results is provided below, with the calculations also attached for information. The selection of sanitaryware fittings (including flush volumes, tap selections, provision of flow restrictors etc.) shall be monitored through the detailed design to ensure compliance with these requirements.

As can be seen from the calculations provided on the following page, the proposed development will comply with the maximum usage limitations as required by Approved Document G and the district plan requirements with a calculated usage of 109.2 litres/resident/day.

Appendix A - 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)	5	1.58	1.58	9.48
Bath (where shower also present)	Capacity to overflow (litres)	150	0.11	0.00	16.5
Shower (where bath also present)	Flow rate (litres/minute)	7.5	4.37	0.00	32.78
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	0.44	10.36	13.44
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)				114.46
	(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)			104.2
	(1 0)	External water use			5.0
	(1 1)	Total water consumption (Building Regulation 17.K)= (9) + (10) (litres/person/day)			109.2

Appendix B – BRUKL Document

Project name

Copthorne Care Home**As designed****Date:** Wed Apr 23 10:58:37 2025

Administrative information

Building Details

Address:

Certifier details

Name:**Telephone number:** 07527 065481**Address:** Betton Consulting Ltd, 4 Langley House,
Wykeham Business Centre, Main Street,
Wykeham, Scarborough, YO13 9QP

Certification tool

Calculation engine: TAS**Calculation engine version:** "v9.5.6"**Interface to calculation engine:** TAS**Interface to calculation engine version:** v9.5.6**BRUKL compliance module version:** v6.1.e.0**Foundation area [m²]:** 1335.39The 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	24.72
Building CO ₂ emission rate (BER), kgCO ₂ /m ² annum	24.7
Target primary energy rate (TPER), kWh _{PE} /m ² annum	139.72
Building primary energy rate (BPER), kWh _{PE} /m ² annum	138.94
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	0.18	0.18	External Wall
Floors	0.18	0.15	0.15	Ground Floor
Pitched roofs	0.16	0.15	0.15	Roof
Flat roofs	0.18	-	-	No flat roofs in project
Windows** and roof windows	1.6	1.4	1.4	Louvre Door
Rooflights***	2.2	1.4	1.4	Rooflight
Personnel doors^	1.6	1.4	1.4	Entrance Door Opening
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- Kitchen (Kitchen)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0	-	-	1	-
Standard value	N/A	N/A	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.					

2- NV LTHW

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.97	-	-	-	-
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- NV AC (9 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.5	5	-	-	-
Standard value	0.93*	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 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.					

4- NV AC (Reception)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0	-	-	-	-
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

5- MV LTHW (4 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0	-	-	1	0.8
Standard value	N/A	N/A	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.					

6- MV AC (12 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0	5	-	1	0.8
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.					

7- Extract LTHW (103 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.97	-	-	-	-
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.					

1- New HWS Circuit

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	0.97	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		Zone	Standard
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1			
Assisted Bath 1	0.3	-	-	-	-	-	-	-	-	-	-	N/A
Assisted Bath 2	0.3	-	-	-	-	-	-	-	-	-	-	N/A
Assisted Bath 3	0.3	-	-	-	-	-	-	-	-	-	-	N/A
Assisted Bath 4	0.3	-	-	-	-	-	-	-	-	-	-	N/A
Ensuite 1	0.3	-	-	-	-	-	-	-	-	-	-	N/A
Ensuite 2	0.3	-	-	-	-	-	-	-	-	-	-	N/A
Ensuite 3	0.3	-	-	-	-	-	-	-	-	-	-	N/A
Ensuite 4	0.3	-	-	-	-	-	-	-	-	-	-	N/A
Ensuite 5	0.3	-	-	-	-	-	-	-	-	-	-	N/A
Ensuite 6	0.3	-	-	-	-	-	-	-	-	-	-	N/A
Ensuite 7	0.3	-	-	-	-	-	-	-	-	-	-	N/A
Ensuite 8	0.3	-	-	-	-	-	-	-	-	-	-	N/A
Ensuite 9	0.3	-	-	-	-	-	-	-	-	-	-	N/A
Ensuite 10	0.3	-	-	-	-	-	-	-	-	-	-	N/A
Ensuite 11	0.3	-	-	-	-	-	-	-	-	-	-	N/A
Ensuite 12	0.3	-	-	-	-	-	-	-	-	-	-	N/A
Ensuite 14	0.3	-	-	-	-	-	-	-	-	-	-	N/A
Ensuite 15	0.3	-	-	-	-	-	-	-	-	-	-	N/A
Ensuite 16	0.3	-	-	-	-	-	-	-	-	-	-	N/A

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 17	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 18	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 19	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 20	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 21	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 22	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 23	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 24	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 25	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 26	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 27	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 28	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 29	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 30	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 31	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 32	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 33	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 34	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 35	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 36	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 37	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 38	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 39	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 40	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 41	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 42	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 43	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 44	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 45	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 46	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 47	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 48	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 49	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 50	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 51	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 52	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 53	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 54	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 55	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 56	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 57	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 58	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 59	0.3	-	-	-	-	-	-	-	-	-	N/A

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 60	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 61	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 62	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 63	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 64	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 65	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 66	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 67	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 68	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 69	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 70	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 71	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 72	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 73	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 74	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 75	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 76	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 77	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 78	0.3	-	-	-	-	-	-	-	-	-	N/A
Ensuite 79	0.3	-	-	-	-	-	-	-	-	-	N/A
WC 02	0.3	-	-	-	-	-	-	-	-	-	N/A
WC 03	0.3	-	-	-	-	-	-	-	-	-	N/A
WC 04	0.3	-	-	-	-	-	-	-	-	-	N/A
WC 05	0.3	-	-	-	-	-	-	-	-	-	N/A
WC 06	0.3	-	-	-	-	-	-	-	-	-	N/A
WC Visitors	0.3	-	-	-	-	-	-	-	-	-	N/A
Kitchen Changing	0.3	-	-	-	-	-	-	-	-	-	N/A
Female Changing	0.3	-	-	-	-	-	-	-	-	-	N/A
Male Changing	0.3	-	-	-	-	-	-	-	-	-	N/A
Cleaners 01	0.3	-	-	-	-	-	-	-	-	-	N/A
Cleaners 02	0.3	-	-	-	-	-	-	-	-	-	N/A
Cleaners 03	0.3	-	-	-	-	-	-	-	-	-	N/A
Cleaners 04	0.3	-	-	-	-	-	-	-	-	-	N/A
Hoist/Wheelchair 1	0.3	-	-	-	-	-	-	-	-	-	N/A
Hoist/Wheelchair 2	0.3	-	-	-	-	-	-	-	-	-	N/A
Hoist/Wheelchair 3	0.3	-	-	-	-	-	-	-	-	-	N/A
Sluice 1	0.3	-	-	-	-	-	-	-	-	-	N/A
Sluice 2	0.3	-	-	-	-	-	-	-	-	-	N/A
Sluice 3	0.3	-	-	-	-	-	-	-	-	-	N/A
Sluice 4	0.3	-	-	-	-	-	-	-	-	-	N/A
WC 01	0.3	-	-	-	-	-	-	-	-	-	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
Comms		133	-	-
Kitchen		140	-	-
Assisted Bath 1		100	-	-
Assisted Bath 2		100	-	-
Assisted Bath 3		100	-	-
Assisted Bath 4		100	-	-
Ensuite 1		94	-	-
Ensuite 2		94	-	-
Ensuite 3		94	-	-
Ensuite 4		94	-	-
Ensuite 5		94	-	-
Ensuite 6		94	-	-
Ensuite 7		94	-	-
Ensuite 8		94	-	-
Ensuite 9		94	-	-
Ensuite 10		94	-	-
Ensuite 11		94	-	-
Ensuite 12		94	-	-
Ensuite 14		94	-	-
Ensuite 15		94	-	-
Ensuite 16		94	-	-
Ensuite 17		94	-	-
Ensuite 18		94	-	-
Ensuite 19		94	-	-
Ensuite 20		94	-	-
Ensuite 21		94	-	-
Ensuite 22		94	-	-
Ensuite 23		94	-	-
Ensuite 24		94	-	-
Ensuite 25		94	-	-
Ensuite 26		94	-	-
Ensuite 27		94	-	-
Ensuite 28		94	-	-
Ensuite 29		94	-	-
Ensuite 30		94	-	-
Ensuite 31		94	-	-
Ensuite 32		94	-	-
Ensuite 33		94	-	-
Ensuite 34		94	-	-
Ensuite 35		94	-	-
Ensuite 36		94	-	-
Ensuite 37		94	-	-

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
Ensuite 38		94	-	-
Ensuite 39		94	-	-
Ensuite 40		94	-	-
Ensuite 41		94	-	-
Ensuite 42		94	-	-
Ensuite 43		94	-	-
Ensuite 44		94	-	-
Ensuite 45		94	-	-
Ensuite 46		94	-	-
Ensuite 47		94	-	-
Ensuite 48		94	-	-
Ensuite 49		94	-	-
Ensuite 50		94	-	-
Ensuite 51		94	-	-
Ensuite 52		94	-	-
Ensuite 53		94	-	-
Ensuite 54		94	-	-
Ensuite 55		94	-	-
Ensuite 56		94	-	-
Ensuite 57		94	-	-
Ensuite 58		94	-	-
Ensuite 59		94	-	-
Ensuite 60		94	-	-
Ensuite 61		94	-	-
Ensuite 62		94	-	-
Ensuite 63		94	-	-
Ensuite 64		94	-	-
Ensuite 65		94	-	-
Ensuite 66		94	-	-
Ensuite 67		94	-	-
Ensuite 68		94	-	-
Ensuite 69		94	-	-
Ensuite 70		94	-	-
Ensuite 71		94	-	-
Ensuite 72		94	-	-
Ensuite 73		94	-	-
Ensuite 74		94	-	-
Ensuite 75		94	-	-
Ensuite 76		94	-	-
Ensuite 77		94	-	-
Ensuite 78		94	-	-
Ensuite 79		94	-	-
Bedroom 1		95	-	-

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 2		95	-	-
Bedroom 3		95	-	-
Bedroom 4		95	-	-
Bedroom 5		95	-	-
Bedroom 6		95	-	-
Bedroom 7		95	-	-
Bedroom 8		95	-	-
Bedroom 9		95	-	-
Bedroom 10		95	-	-
Bedroom 11		95	-	-
Bedroom 12		95	-	-
Bedroom 14		95	-	-
Bedroom 15		95	-	-
Bedroom 16		95	-	-
Bedroom 17		95	-	-
Bedroom 18		95	-	-
Bedroom 19		95	-	-
Bedroom 20		95	-	-
Bedroom 21		95	-	-
Bedroom 22		95	-	-
Bedroom 23		95	-	-
Bedroom 24		95	-	-
Bedroom 25		95	-	-
Bedroom 26		95	-	-
Bedroom 27		95	-	-
Bedroom 28		95	-	-
Bedroom 29		95	-	-
Bedroom 30		95	-	-
Bedroom 31		95	-	-
Bedroom 32		95	-	-
Bedroom 33		95	-	-
Bedroom 34		95	-	-
Bedroom 35		95	-	-
Bedroom 36		95	-	-
Bedroom 37		95	-	-
Bedroom 38		95	-	-
Bedroom 39		95	-	-
Bedroom 40		95	-	-
Bedroom 41		95	-	-
Bedroom 42		95	-	-
Bedroom 43		95	-	-
Bedroom 44		95	-	-
Bedroom 45		95	-	-

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 46		95	-	-
Bedroom 47		95	-	-
Bedroom 48		95	-	-
Bedroom 49		95	-	-
Bedroom 50		95	-	-
Bedroom 51		95	-	-
Bedroom 52		95	-	-
Bedroom 53		95	-	-
Bedroom 54		95	-	-
Bedroom 55		95	-	-
Bedroom 56		95	-	-
Bedroom 57		95	-	-
Bedroom 58		95	-	-
Bedroom 59		95	-	-
Bedroom 60		95	-	-
Bedroom 61		95	-	-
Bedroom 62		95	-	-
Bedroom 63		95	-	-
Bedroom 64		95	-	-
Bedroom 65		95	-	-
Bedroom 66		95	-	-
Bedroom 67		95	-	-
Bedroom 68		95	-	-
Bedroom 69		95	-	-
Bedroom 70		95	-	-
Bedroom 71		95	-	-
Bedroom 72		95	-	-
Bedroom 73		95	-	-
Bedroom 74		95	-	-
Bedroom 75		95	-	-
Bedroom 76		95	-	-
Bedroom 77		95	-	-
Bedroom 78		95	-	-
Bedroom 79		95	-	-
Circulation 1 Foyer		100	-	-
Circulation 2		100	-	-
Circulation 3		100	-	-
Circulation 4		100	-	-
Circulation 5		100	-	-
Circulation 6		100	-	-
Circulation 7		100	-	-
Circulation 8		100	-	-
Circulation 9		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
Circulation 10		100	-	-
Circulation 11		100	-	-
Circulation 12		100	-	-
Circulation 13		100	-	-
Circulation 14		100	-	-
Circulation 15		100	-	-
Circulation 16		100	-	-
Circulation 17		100	-	-
Circulation 18		100	-	-
Circulation 19		100	-	-
Circulation 20		100	-	-
Circulation 21		100	-	-
Circulation 22		100	-	-
Circulation 23		100	-	-
Circulation 24		100	-	-
Circulation 25		100	-	-
Circulation 26		100	-	-
Circulation 27		100	-	-
Circulation 28 GF Half Landing		100	-	-
Store 1 Admin		123	-	-
Store 2 Maintenance		140	-	-
Store 3		123	-	-
Store 4		123	-	-
Store 5		123	-	-
Store 6		123	-	-
Store 7		123	-	-
Store 8		123	-	-
Store 9		123	-	-
Store 10		123	-	-
Store 11		123	-	-
Store 12		123	-	-
Store 13		123	-	-
Store 14		123	-	-
Store 15		123	-	-
Store 16		123	-	-
Store 17		123	-	-
Store 18		123	-	-
Store 19		123	-	-
Store 20		123	-	-
Store 21		123	-	-
Store 22		123	-	-
WC 02		100	-	-
WC 03		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	
WC 04		100	-	-	
WC 05		100	-	-	
WC 06		100	-	-	
WC Visitors		100	-	-	
Laundry		140	-	-	
Stair 1 GF		100	-	-	
Stair 1 FF		100	-	-	
Stair 1 SF		100	-	-	
Stair 2 GF		100	-	-	
Stair 2 FF		100	-	-	
Stair 2 SF		100	-	-	
Stair 3 GF		100	-	-	
Stair 3 FF		100	-	-	
Stair 3SF		100	-	-	
Stair 4 GF		100	-	-	
Stair 4 FF		100	-	-	
Stair 4 SF		100	-	-	
CRM Office		140	-	-	
Hairdresser		98	-	-	
Admin Office		140	-	-	
Manager Office		140	-	-	
Reception		100	95	-	
Cafe		100	-	-	
Cinema/Bar		98	-	-	
Lounge 1		100	-	-	
Quiet Lounge 1		100	-	-	
Dining Room 1		100	-	-	
Namaste Lounge		100	-	-	
Lobby		100	-	-	
Kitchen Changing		102	-	-	
Female Changing		102	-	-	
Male Changing		102	-	-	
Cleaners 01		140	-	-	
Cleaners 02		140	-	-	
Cleaners 03		140	-	-	
Cleaners 04		140	-	-	
Staff Room		102	-	-	
Plantroom		140	-	-	
Hoist/Wheelchair 1		140	-	-	
Hoist/Wheelchair 2		140	-	-	
Hoist/Wheelchair 3		140	-	-	
Nurse 1		140	-	-	
Nurse 2		140	-	-	

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
Nurse 3		140	-	-
Sluice 1		133	-	-
Sluice 2		133	-	-
Sluice 3		133	-	-
Sluice 4		133	-	-
Drugs 1		133	-	-
Drugs 2		133	-	-
Drugs 3		133	-	-
Drugs 4		133	-	-
Dining Room 2		100	-	-
Lounge/Dining 1		100	-	-
Lounge/Dining 2		100	-	-
Activity Room		100	-	-
Quiet Lounge 2		100	-	-
Nurse 4		140	-	-
Lounge 2		100	-	-
Lounge 3		100	-	-
Hobby Room		100	-	-
WC 01		100	-	-

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?
Comms	N/A	N/A
Bedroom 1	NO (-47%)	NO
Bedroom 2	NO (-40%)	NO
Bedroom 3	NO (-47%)	NO
Bedroom 4	NO (-47%)	NO
Bedroom 5	NO (-54%)	NO
Bedroom 6	NO (-46%)	NO
Bedroom 7	NO (-65%)	NO
Bedroom 8	NO (-45%)	NO
Bedroom 9	NO (-46%)	NO
Bedroom 10	NO (-53%)	NO
Bedroom 11	NO (-47%)	NO
Bedroom 12	NO (-63%)	NO
Bedroom 14	NO (-48%)	NO
Bedroom 15	NO (-66%)	NO
Bedroom 16	NO (-52%)	NO
Bedroom 17	NO (-65%)	NO
Bedroom 18	NO (-47%)	NO
Bedroom 19	NO (-66%)	NO
Bedroom 20	NO (-75%)	NO
Bedroom 21	NO (-43%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bedroom 22	NO (-63%)	NO
Bedroom 23	NO (-43%)	NO
Bedroom 24	NO (-62%)	NO
Bedroom 25	NO (-48%)	NO
Bedroom 26	NO (-62%)	NO
Bedroom 27	NO (-44%)	NO
Bedroom 28	NO (-64%)	NO
Bedroom 29	NO (-47%)	NO
Bedroom 30	NO (-62%)	NO
Bedroom 31	NO (-45%)	NO
Bedroom 32	NO (-62%)	NO
Bedroom 33	NO (-68%)	NO
Bedroom 34	NO (-62%)	NO
Bedroom 35	NO (-81%)	NO
Bedroom 36	NO (-53%)	NO
Bedroom 37	NO (-42%)	NO
Bedroom 38	NO (-38%)	NO
Bedroom 39	NO (-43%)	NO
Bedroom 40	NO (-45%)	NO
Bedroom 41	NO (-48%)	NO
Bedroom 42	NO (-74%)	NO
Bedroom 43	NO (-65%)	NO
Bedroom 44	NO (-46%)	NO
Bedroom 45	NO (-64%)	NO
Bedroom 46	NO (-51%)	NO
Bedroom 47	NO (-65%)	NO
Bedroom 48	NO (-46%)	NO
Bedroom 49	NO (-61%)	NO
Bedroom 50	NO (-45%)	NO
Bedroom 51	NO (-51%)	NO
Bedroom 52	NO (-44%)	NO
Bedroom 53	NO (-43%)	NO
Bedroom 54	NO (-51%)	NO
Bedroom 55	NO (-74%)	NO
Bedroom 56	NO (-58%)	NO
Bedroom 57	NO (-71%)	NO
Bedroom 58	NO (-62%)	NO
Bedroom 59	NO (-91%)	NO
Bedroom 60	NO (-86%)	NO
Bedroom 61	NO (-90%)	NO
Bedroom 62	NO (-86%)	NO
Bedroom 63	NO (-85%)	NO
Bedroom 64	NO (-78%)	NO
Bedroom 65	NO (-90%)	NO
Bedroom 66	NO (-86%)	NO
Bedroom 67	NO (-92%)	NO
Bedroom 68	NO (-83%)	NO
Bedroom 69	NO (-85%)	NO
Bedroom 70	NO (-85%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Bedroom 71	NO (-81%)	NO
Bedroom 72	NO (-43%)	NO
Bedroom 73	NO (-44%)	NO
Bedroom 74	NO (-90%)	NO
Bedroom 75	NO (-87%)	NO
Bedroom 76	NO (-91%)	NO
Bedroom 77	NO (-89%)	NO
Bedroom 78	NO (-91%)	NO
Bedroom 79	NO (-89%)	NO
Circulation 1 Foyer	NO (-89%)	NO
Laundry	NO (-76%)	NO
CRM Office	N/A	N/A
Hairdresser	NO (-64%)	NO
Admin Office	NO (-43%)	NO
Manager Office	NO (-48%)	NO
Reception	NO (-99%)	NO
Cafe	NO (-55%)	NO
Cinema/Bar	NO (-65%)	NO
Lounge 1	NO (-53%)	NO
Quiet Lounge 1	N/A	N/A
Dining Room 1	NO (-58%)	NO
Namaste Lounge	NO (-63%)	NO
Staff Room	NO (-56%)	NO
Nurse 1	N/A	N/A
Nurse 2	N/A	N/A
Nurse 3	N/A	N/A
Drugs 1	N/A	N/A
Drugs 2	N/A	N/A
Drugs 3	N/A	N/A
Drugs 4	N/A	N/A
Dining Room 2	NO (-88%)	NO
Lounge/Dining 1	NO (-58%)	NO
Lounge/Dining 2	NO (-63%)	NO
Activity Room	NO (-60%)	NO
Quiet Lounge 2	NO (-81%)	NO
Nurse 4	N/A	N/A
Lounge 2	NO (-83%)	NO
Lounge 3	NO (-89%)	NO
Hobby Room	NO (-86%)	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]	4062	4062
External area [m ²]	5334	5334
Weather	LON	LON
Infiltration [m ³ /hm ² @ 50Pa]	5	3
Average conductance [W/K]	1370	1659
Average U-value [W/m ² K]	0.26	0.31
Alpha value* [%]	39.51	24.51

* 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	17.39	17.78
Cooling	3.12	4.86
Auxiliary	5.85	4.48
Lighting	12.15	9.8
Hot water	93.96	94.75
Equipment*	82.98	82.98
TOTAL **	132.46	131.68

* 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	12.51	10.71
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
<i>Displaced electricity</i>	<i>12.51</i>	<i>10.71</i>

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	115.09	148.97
Primary energy [kWh _{PE} /m ²]	138.94	139.72
Total emissions [kg/m ²]	24.7	24.72

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] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
Actual	0	0	0	0	31.4	0	0	0	0	
Notional	0	0	0	0	52.3	0	0	----	----	
[ST] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
Actual	65.8	0	19.7	0	3.3	0.93	0	0.97	0	
Notional	63.4	0	20.5	0	2.1	0.86	0	----	----	
[ST] Split or multi-split system, [HS] LTHW boiler, [HFT] Electricity, [CFT] Electricity										
Actual	13.7	474.8	1.1	26.4	0	3.5	5	3.5	5	
Notional	3.8	587	0.4	37.1	0	2.64	4.4	----	----	
[ST] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
Actual	0	0	0	0	12.5	0	0	0	0	
Notional	0	0	0	0	8.5	0	0	----	----	
[ST] Split or multi-split system, [HS] LTHW boiler, [HFT] Electricity, [CFT] Electricity										
Actual	0	189.4	0	10.5	20.5	0	5	0	5	
Notional	0	333.1	0	21	14.5	0	4.4	----	----	
[ST] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
Actual	120.7	0	36.1	0	3.9	0.93	0	0.97	0	
Notional	97	0	31.3	0	2.4	0.86	0	----	----	

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