

J1146 // CHOWNES MEAD HOTEL
PART L & SUSTAINABILITY REPORT
MARCH 2026

J1146-TGL-ZZ-XX-RP-BP-4801

Consultants

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Report History

Issue number	Suitability	Date	Details
P01	S1	05/08/2023	Stage 1 for review
P02	S1	26/09/2023	Stage 1 redesign for review
P03	S1	16/03/2026	Planning Submission



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CONTENTS

1. INTRODUCTION	1
2. PLANNING POLICY AND LEGISLATIVE REQUIREMENTS.....	2
3. MODELLING & SERVICES STRATEGY	4
4. PART L (2021) COMPLIANCE RESULTS	9
5. SUSTAINABILITY MEASURES.....	10
6. VENTILATION AND EXTRACTION STATEMENT	13
7. APPENDIX A – BRUKL Report	14

1. INTRODUCTION

This report provides a Part L Compliance analysis for the proposed new build spa facility at the proposed Chownes Mead Hotel.

The proposed building consists of a two-storey health and spa facility including a swimming pool, gym and changing areas.

The aim of this report is to assess whether the proposed fabric and services strategies comply with Part L2 (2021) of the Building Regulations and the Mid Sussex District Plan 2014–2031.

At this stage, the focus of the report is primarily on the new build elements, with the understanding that the listed building will require a more detailed and sensitive interrogation as the design evolves. This will be undertaken at the appropriate stage in close consultation with Orion Heritage and the Local Authority Conservation Officer, ensuring that all interventions are fully informed and heritage impacts are carefully assessed and addressed.

It should be clarified that the project will progress to a full technical design at RIBA Stage 4, at which point all building systems, layouts and interfaces will be comprehensively developed and coordinated.

2. PLANNING POLICY AND LEGISLATIVE REQUIREMENTS

National Policy

Under the Climate Change Act 2008, the Government put in place legally binding carbon reduction targets of 35% by 2020 and 80% by 2050 compared to 1990 levels.

Planning legislation seeks to mitigate the impacts of new construction to minimise carbon emissions, for which buildings are responsible for 60%, and assist in meeting the over-arching national target.

The National Planning Policy Framework (NPPF) 2024 replaces all national planning policy statements and guidance.

The NPPF Paragraph 161 sets out that the purpose of planning is to help achieve sustainable development. There are three dimensions to sustainable development: economic, social and environmental. These should not be undertaken in isolation, because they are mutually dependent. In order to achieve sustainable development - economic, social and environmental gains should be sought jointly and simultaneously through the planning system. The NPPF sets out that there should be a presumption in favour of sustainable development.

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

Local Policy

Mid Sussex District Plan 2014-2031



For all new build planning applications, Mid Sussex Council requires the submission of a report detailing how the proposed development incorporates energy efficiency best practice measures to the design. The main objectives relevant to Mid Sussex District Council is to promote a sustainable scheme, and where feasible incorporate renewable sources of energy as outlined in DP39 and DP40.

3. MODELLING & SERVICES STRATEGY

The thermal model has been constructed using IES – Virtual Environment (2023), accredited thermal modelling software.

The model was constructed to the received architect's floor plans and Sketch-UP Model, as listed below:

Drawing Name	Drawing Number
Proposed Ground Floor Plan	0603.PL.1601
Proposed Lower Ground	0603.PL.1600
Proposed Elevations	0603.PL.1602
Proposed Elevations	0603.PL.1603

The below images show the thermal model created within IES-VE.

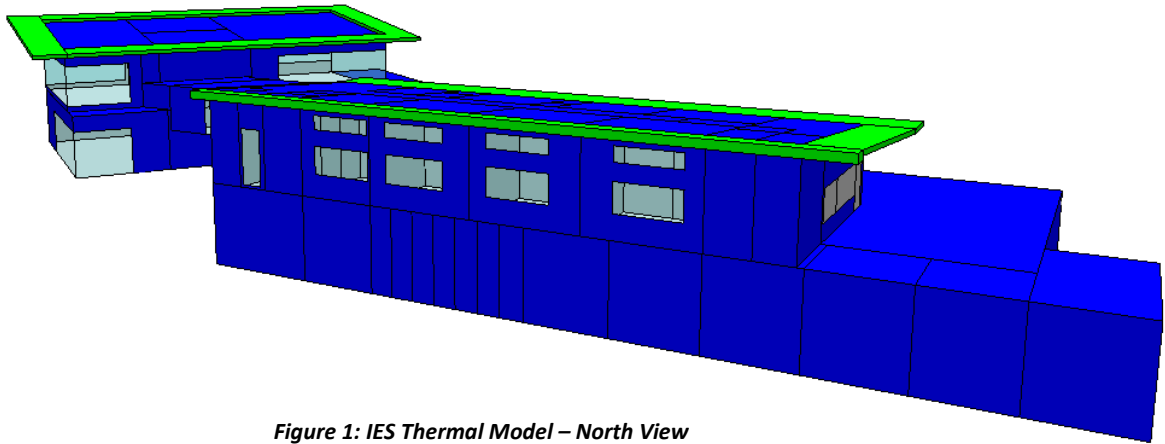


Figure 1: IES Thermal Model – North View

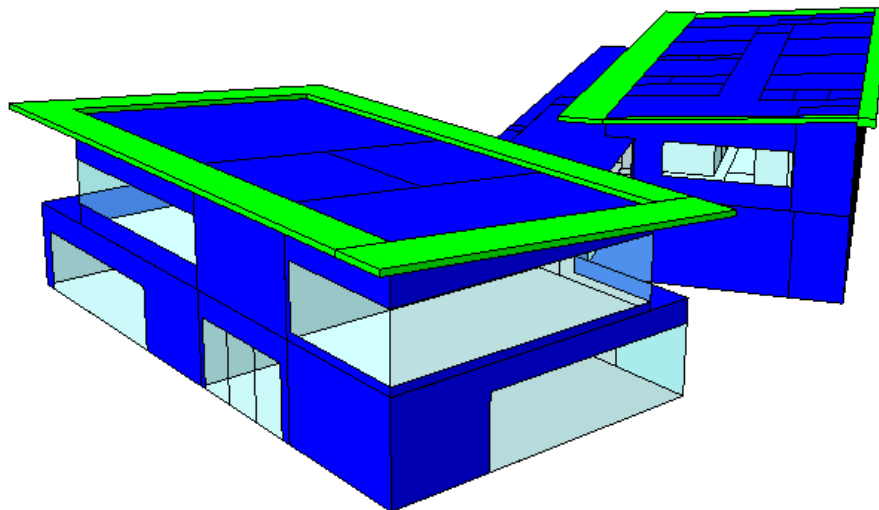


Figure 2: IES Thermal Model – East View

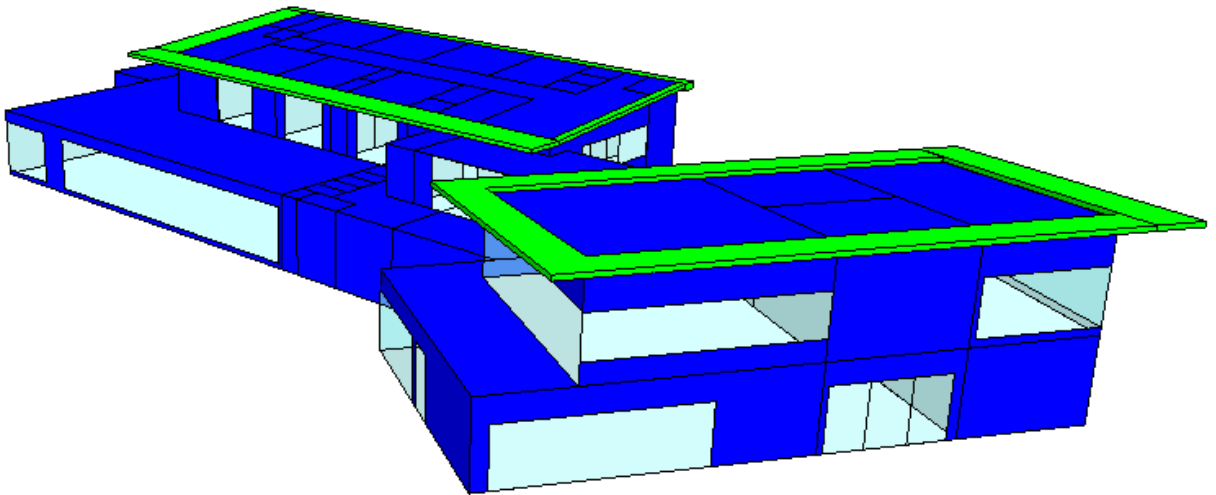


Figure 3: IES Thermal Model – South View

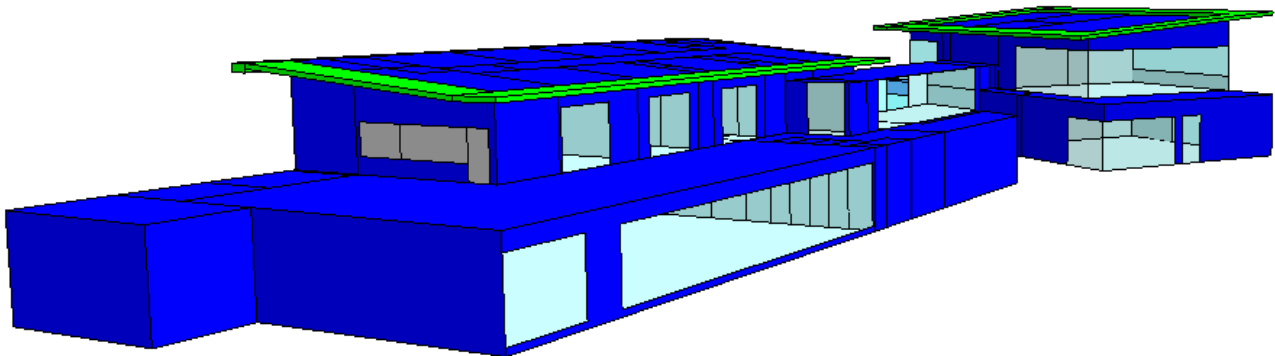


Figure 4: IES Thermal Model – West View

WEATHER DATA

The site is located in Haywards Heath, West Sussex. Part L 2021 requires a Test Reference Year weather file to be used most appropriate to the location. The closest weather file used in this analysis is:

- London Test Reference Year

BUILDING FABRIC & INFILTRATION

Building Element	Element Construction (Inside to Outside)	Building Regulations Part L2 (2021) Limiting Fabric Parameters (W/m ² .K)	Target U-Value (W/m ² .K)	% Improvement against AD Part L2 (2021)
Ground Floor	Screed Insulation Concrete Slab	0.18	0.13	28%
External Walls (above ground)	Sandstone Walls to match existing	0.26	0.18	31%
External Walls (below ground)	Plasterboard Cement Board Insulation Concrete			
Internal Walls	Blockwork	N/A	0.31	N/A
Internal Floors	Screed Concrete Plasterboard	N/A	1.7	N/A
Roof	Part of Glulam Frame	0.18	0.13	28%
Windows & Glazed Doors	Double Glazed (assumed g-value 0.28)	1.60	1.4	13%
Doors	-	1.60	1.60	0%
Rooflights	Doubled Glazed (assumed g-value 0.28)	2.20	1.4	36%
Air Permeability (m ³ /hr.m ² @ 50Pa)	-	8.0	4.0	50%

SERVICES STRATEGY

System	Specification	Serving
Heating & Cooling	VRF Heating & Cooling System Heating Efficiency SCOP: 4.50 Cooling Efficiency SSEER: 6.00 EER(n): 3.50	Gym, Yoga Studio, Members Lounge, Treatment Rooms, Reception, Kitchen
	Air Handling Unit with Heat Recovery Heating Efficiency SCOP: 4.5 Cooling Efficiency SSEER: 6.00 EER(n): 3.50 SFP: 1.6 W/l/s	Unisex Changing, Male Changing, Female Changing, Pool, Thermal Suite, LGF Showers & WCs

	80% Heat Recovery Efficiency		
Heating Only	Underfloor Heating via Air Source Heat Pump (ASHP) SCOP: 4.5	Circulation, Store/Prep, Cocktail Bar, GF WC's & Showers	
	Unheated	Plantroom, Pool Plant	
Domestic Hot Water	3,00L storage Indirect cylinder heated by ASHP SCOP=3.91 (with trace heating)		
Ventilation	Supply & Extract with Heat Recovery 80% Heat Recovery Efficiency SFP: 1.2 W/l/s	Gym, Yoga Studio, Members Lounge, Treatment Rooms, Reception, LGF Circulation	
	Extract Only SFP: 0.3 W/l/s	Thermal Suite, Cocktail Bar & Served, WC's, GF Showers	
	Supply & Extract (1000l/s) 0.5W/l/s Supply, 0.5W/l/s Extract	Kitchen	
	Natural Ventilation	Stores, Plant Room, Lift, Lift Motor Room, Circulation	
Lighting	Efficacy of >110 lumens/W	Auto On / Off (Dimmed)	Changing Rooms, Circulation, WC's, Showers, Reception Area, Shower Circulation
		Manual On / Auto Off Daylight Dimming	Treatment Rooms, Manicure/Pedicure, Reception, Yoga Studio
		Auto On / Off Occupancy Sensing	Store/Prep, Plant, Lift Motor Room, Lift
		Manual On / Off	Lift, Lift Motor room, Pool, Thermal Suite, Gym, Kitchen, Members Lounge, Cocktail Bar, Service Lift
Electric Power Factor	> 0.95 (Power Factor Correction Installed)		
Mechanical System Metering Provisions	Systems to have provision for metering. No provision for metering to warn 'out of range' values.		
Lighting System Metering Provisions	Lighting system to have provision for metering. No provision for metering to warn 'out of range' values		
Mechanical System Controls	Underfloor Heating (ASHP)	Central Time Control. Local Temperature Control (i.e., room by room).	

	VRF Heating & Cooling System	Central Time Control. Local Time Control. Local Temperature Control (i.e., room by room).
Recommended LZC Technologies	With the proposed design above, PV Panels are not required for Part L compliance. However, it is recommended that these are installed to offset some of the buildings energy consumption. The option considered is for 25m ² which equates to a 5kWp array. This is proposed to be mounted on the roof of the lounge.	

4. PART L (2021) COMPLIANCE RESULTS

BASE CASE RESULTS

The Part L (2021) calculations have been undertaken based upon the proposed design intent and the results are shown below, indicating a Part-L pass of approximately 7%.

BRUKL Results:

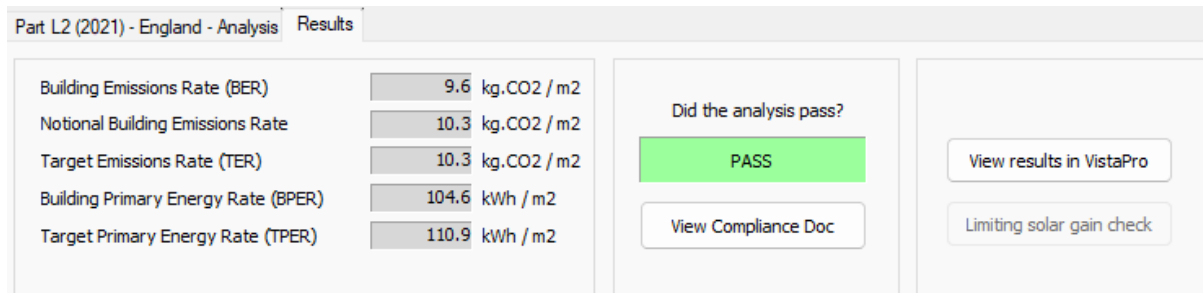


Figure 5: BRUKL CO₂ Emissions

The associated BRUKL results may be found within the Appendix of this report.

EPC Results: Predicted EPC rating for the output above is **A (8)**.

5.SUSTAINABILITY MEASURES

ADAPTING TO CLIMATE CHANGE

One of the critical challenges facing the UK and new development is the need to mitigate and adapt to a changing climate. The Government has demonstrated a commitment to tackling climate change, setting an ambitious long-term goal of achieving net-zero carbon emissions by 2050. This target aligns with the global efforts to limit global warming and its adverse effects on the environment and communities.

Climate change is projected to cause warmer temperatures in the UK, with wetter winters, drier summers, and increased frequency of extreme weather events. Adapting to this changing climate will significantly impact the design, construction, location, cost, and operation of all new buildings in the coming decades. The NPPF has recognised the importance of addressing climate change by including adaptation and mitigation as one of its core planning principles. Consequently, the planning process also proactively requires measures to ensure that new developments are resilient and sustainable in the face of climate change.

The following section outlines the key sustainability measures, climate change mitigation and adaptation measures considered appropriate for this development based on the latest national guidance that include but is not limited to:

Overheating

To minimise the risk of overheating, the Proposed Development will utilise appropriate overheating mitigation measures such as glazing with low g-value, mechanical ventilation and cooling.



Figure 6: Image for Illustration purposes only

Water Efficiency

Potable water is an increasingly important natural resource and with majority of the UK classed being in an area of moderate or severe water stress, the conservation of water is becoming a more significant sustainability metric.

Water usage on the Proposed Development construction site will be identified and where water is being wasted, behaviours and/or technologies will be introduced to reduce water wastage. The operation of the Site will aim to reduce water consumption during occupation through a range of water efficiency measures such as:

- i. Water metering to enable the monitoring of water consumption; and
- ii. Dual flush WC, low flow showers, fittings, fixtures, and appliances.



Figure 7: Image for Illustration purposes only

Material

The use of materials is relevant to both the construction and operational phases of development. The operation of the Site is to minimise its overall environmental impact through the specification of sustainable materials that can be recycled at the end of their lifetime.

Using sustainable building materials and products promotes conservation of dwindling non-renewable resources. In addition, integrating sustainable building materials (including the use of recycled materials) into the Proposed Development can help reduce the environmental impacts associated with the extraction, transport, processing, fabrication, installation, reuse, recycling, and disposal of these source materials.

All materials shall also be responsibly sourced and where practical and feasible, materials shall be sourced from local suppliers, reducing the environmental impacts and CO2 emissions associated with transportation to the site. Scope for increased recycling will be incorporated wherever feasible by specifying recycled materials and materials with a high recycled content.



Figure 8: Image for Illustration purposes only

Waste and Recycling

The Proposed Development will ensure consideration is given to sustainable waste management options. In accordance with the waste hierarchy the Proposed Development will make provision for the storage of non-recyclable and recyclable waste.

The Site will ensure consideration is given to sustainable waste management options in accordance with the principles of the waste hierarchy. Prior to the construction phase a Construction Environmental Management Plan (CEMP) could be developed to ensure the use of measures to minimise waste during the construction phases of the development, including the use of a scheme for recycling/disposing of waste arising from and construction works.

A Site Waste Management Plan (SWMP) could also be used to encourage reuse of materials, reduction of waste and recycling. The SWMP shall include targets for resource efficiency and avoidance of materials for landfill, records shall be kept throughout construction to monitor progress against these targets.

The reduction, reuse and recycling of construction waste is to be prioritised through measures such as avoidance of over-ordering, supervision of deliveries, use of secure materials storage facilities and reuse of materials onsite where feasible. In addition, the Site will be registered with the CCS Scheme.

6. VENTILATION AND EXTRACTION STATEMENT

Proposed Kitchen Use

The development includes a kitchen area serving spa users and providing approximately 34 covers. The kitchen will operate during typical daytime and evening hours and will prepare a range of food.

Based on the proposed use the kitchen is considered to provide a low odour risk.

Ventilation Strategy

The kitchen will be provided with a dedicated mechanical extract system comprising:

- Commercial canopy hoods over all cooking appliances
- Grease filtration at canopy level
- Mechanical extract via ductwork routed to high level
- Discharge at high level to atmosphere to promote dispersion
- Adequate make-up air provided to ensure system balance

The system shall be designed in accordance with DW172 & best practice to ensure effective capture and removal of cooking fumes, grease, and odours

Odour Control Measures

In line with DEFRA best-practice guidance, the extract system should incorporate appropriate odour abatement measures, including:

- High-efficiency grease filtration
- Secondary filtration (e.g. bag/filter stage)

With the incorporation of appropriate odour control measures and a high-level discharge strategy, the development will operate without causing unacceptable odour impacts and is considered acceptable in planning and environmental health terms.

7. APPENDIX A – BRUKL Report

BRUKL Output Document



HM Government

Compliance with England Building Regulations Part L 2021

Project name

Chownes Mead New Build SPA Facility**As designed**

Date: Thu Sep 26 14:40:08 2024

Administrative information

Building Details

Address: Chownes Mead Lane, Haywards Heath, RH16 4BS

Certifier details

Name: James Bradley

Telephone number: 01273 952905

Address: 28 Foundry Street, Brighton, BN1 4AT

Certification tool

Calculation engine: Apache

Calculation engine version: 7.0.27

Interface to calculation engine: IES Virtual Environment

Interface to calculation engine version: 7.0.27

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

Foundation area [m²]: 666.67

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	10.29
Building CO ₂ emission rate (BER), kgCO ₂ /m ² .annum	9.64
Target primary energy rate (TPER), kWh _{eq} /m ² .annum	110.95
Building primary energy rate (BPER), kWh _{eq} /m ² .annum	104.61
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	0_000011:Surf[4]
Floors	0.18	0.13	0.13	0_000000:Surf[0]
Pitched roofs	0.16	-	-	No pitched roofs in building
Flat roofs	0.18	0.13	0.13	0_000000:Surf[1]
Windows** and roof windows	1.6	1.4	1.4	0_000011:Surf[2]
Rooflights***	2.2	-	-	No roof lights in building
Personnel doors^	1.6	1.52	1.52	1C000002:Surf[2]
Vehicle access & similar large doors	1.3	-	-	No vehicle access doors in building
High usage entrance doors	3	-	-	No high usage entrance doors in building
U _a -Limit = Limiting area-weighted average U-values [W/(m ² K)] U _a -Calc = Calculated area-weighted average U-values [W/(m ² K)] U _i -Calc = Calculated maximum individual element U-values [W/(m ² 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/m ² K 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	4

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 to 0.95

1- AHU With Heat Recovery 1.6W/l/s 0.85HR

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	4.5	6	0	1.6	0.85
Standard value	2.5*	N/A	N/A	2^	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.					
^ Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.					

2- VRF System HRU

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	4.5	6	0	1.2	0.85
Standard value	2.5*	N/A	N/A	2^	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.					
^ Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.					

3- UFH HEAT PUMP 4.5 NV

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	4.5	-	0.2	-	-
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- UFH HEAT PUMP 4.5 HRU

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	4.5	-	0.2	-	0.85
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.					

5- UFH HEAT PUMP 4.5 MEV

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	4.5	-	0.2	-	0.85
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.					

6- VRF System Kitchen

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	4.5	6	0	0.5	-
Standard value	2.5*	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 all types >12 kW output, except absorption and gas engine heat pumps.					
^ Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.					

1- HWS

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	3.91	0.003
Standard value	2*	N/A
* Standard shown is for all types except absorption and gas engine heat pumps.		

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			
1 CIRCULATION	-	-	-	1.2	-	-	-	-	-	-	-	N/A
1 CIRCULATION	-	-	-	1.2	-	-	-	-	-	-	-	N/A
1 CIRCULATION	-	-	-	1.2	-	-	-	-	-	-	-	N/A
1 KITCHEN BAR	-	-	-	-	-	-	-	-	0.5	-	-	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
0 POOL PLANT		110	-	-
0 SAUNA		110	-	-
0 SALT ROOM		110	-	-
0 STEAM ROOM		110	-	-
0 THERMAL ROOM		110	-	-
0 STORE		110	-	-
GF BUILDING PLANT		110	-	-
0 FC WC 1		110	-	-
0 FC WC 2		110	-	-

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
0 FC WC 2		110	-	-
0 FC SHOWER 1		110	-	-
0 FC SHOWER 4		110	-	-
0 FC SHOWER 3		110	-	-
0 FC SHOWER 2		110	-	-
0 POOL & HOT TUB		110	-	-
0 UNISEX CHANGING SHOWER 1		110	-	-
0 AWC		110	-	-
0 UNISEX CHANGING SHOWER 1		110	-	-
0 MALE CHANGING		110	-	-
0 MC TOILET CUBICLE		110	-	-
0 MC TOILET		110	-	-
0 YOGA STUDIO		110	-	-
0 GYM		110	-	-
0 FEMALE CHANGING		110	-	-
0 MC SHOWER 1		110	-	-
0 MC SHOWER 2		110	-	-
0 MC SHOWER 3		110	-	-
0 MC SHOWER 4		110	-	-
1 DRAFT LOBBY		110	-	-
0 CIRCULATION		110	-	-
0 CIRCULATION		110	-	-
1 CIRCULATION		110	-	-
1 COCKTAIL BAR & SERVERY		110	-	-
1 STORE		110	-	-
1 CIRCULATION		110	-	-
1 RECEPTION		110	110	1.227
1 RECEPTION STORE		110	-	-
1 TREATMENT ROOM 6		110	-	-
1 TR5 SHOWER		110	-	-
1 TREATMENT ROOM 5		110	-	-
1 TREATMENT ROOM 4		110	-	-
1 STORE		110	-	-
1 TR6 SHOWER		110	-	-
1 TR4 SHOWER		110	-	-
1 CHANGE WC		110	-	-
1 WC 3		110	-	-
1 MANICURE PEDICURE		110	-	-
1 TREATMENT ROOM 1		110	-	-
1 TREATMENT ROOM 2		110	-	-
1 TREATMENT ROOM 3		110	-	-
1 TR3 SHOWERS		110	-	-
1 WC 2		110	-	-

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
1 AWC		110		-	-
1 WC 1		110		-	-
0 CIRCULATION		110		-	-
0 CIRCULATION		110		-	-
1 MEMBERS LOUNGE SOUTH		110		-	-
1 CIRCULATION		110		-	-
1 KITCHEN BAR		110		-	-
1 MEMBERS LOUNGE NORTH		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?
0 SAUNA	N/A	N/A
0 SALT ROOM	N/A	N/A
0 STEAM ROOM	N/A	N/A
0 THERMAL ROOM	N/A	N/A
0 STORE	N/A	N/A
0 FC WC 1	N/A	N/A
0 FC WC 2	N/A	N/A
0 FC WC 2	N/A	N/A
0 FC SHOWER 1	N/A	N/A
0 FC SHOWER 4	N/A	N/A
0 FC SHOWER 3	N/A	N/A
0 FC SHOWER 2	N/A	N/A
0 POOL & HOT TUB	NO (-1.6%)	NO
0 UNISEX CHANGING SHOWER 1	N/A	N/A
0 AWC	NO (-99.9%)	NO
0 UNISEX CHANGING SHOWER 1	N/A	N/A
0 MALE CHANGING	N/A	N/A
0 MC TOILET CUBICLE	N/A	N/A
0 MC TOILET	N/A	N/A
0 YOGA STUDIO	NO (-45.1%)	NO
0 GYM	NO (-35.4%)	NO
0 FEMALE CHANGING	N/A	N/A
0 MC SHOWER 1	N/A	N/A
0 MC SHOWER 2	N/A	N/A
0 MC SHOWER 3	N/A	N/A
0 MC SHOWER 4	N/A	N/A
1 RECEPTION	N/A	N/A
1 TREATMENT ROOM 6	NO (-40.9%)	NO
1 TREATMENT ROOM 5	NO (-39.3%)	NO
1 TREATMENT ROOM 4	NO (-46.5%)	NO
1 MANICURE PEDICURE	NO (-49.5%)	NO
1 TREATMENT ROOM 1	NO (-62.2%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
1 TREATMENT ROOM 2	NO (-62.4%)	NO
1 TREATMENT ROOM 3	NO (-62.3%)	NO
1 MEMBERS LOUNGE SOUTH	NO (-17.4%)	NO
1 KITCHEN BAR	N/A	N/A
1 MEMBERS LOUNGE NORTH	NO (-22.8%)	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?	NO
Are any such measures included in the proposed design?	YES

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters			Building Use	
	Actual	Notional	% Area	Building Type
Floor area [m ²]	1368.4	1368.4		Retail/Financial and Professional Services
External area [m ²]	2986.1	2986.1		Restaurants and Cafes/Drinking Establishments/Takeaways
Weather	LON	LON		Offices and Workshop Businesses
Infiltration [m ³ /hm ² @ 50Pa]	4	3		General Industrial and Special Industrial Groups
Average conductance [W/K]	871.12	1007.82		Storage or Distribution
Average U-value [W/m ² K]	0.29	0.34		Hotels
Alpha value* [%]	25	10		Residential Institutions: Hospitals and Care Homes
* Percentage of the building's average heat transfer coefficient which is due to thermal bridging				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
			100	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	10.55	17.98
Cooling	1.98	2.43
Auxiliary	22.32	19.9
Lighting	15.46	10.44
Hot water	19.35	24.03
Equipment*	45.43	45.43
TOTAL**	69.66	74.78

* 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	0	0
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
Displaced electricity	0	0

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	209.14	220.37
Primary energy [kWh _{PE} /m ²]	104.61	110.95
Total emissions [kg/m ²]	9.64	10.29

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] Variable refrigerant flow, [HS] ASHP, [HFT] Electricity, [CFT] Electricity									
Actual	80.1	67	5.2	4.7	17.9	4.31	4	4.5	6
Notional	52.7	81.5	5.3	4.9	21.6	2.78	4.63	----	----
[ST] Constant volume system (variable fresh air rate), [HS] ASHP, [HFT] Electricity, [CFT] Electricity									
Actual	360.1	6.8	19.5	0.5	39.7	5.12	3.75	4.5	6
Notional	378.2	23.3	37.8	1.4	28.1	2.78	4.63	----	----
[ST] Variable refrigerant flow, [HS] ASHP, [HFT] Electricity, [CFT] Electricity									
Actual	5.9	178.2	0.4	12	54.6	4.2	4.11	4.5	6
Notional	0.4	260	0	15.6	70.3	2.78	4.63	----	----
[ST] Central heating using water: floor heating, [HS] ASHP, [HFT] Electricity, [CFT] Electricity									
Actual	170	0	11.8	0	2.3	4.02	0	4.5	0
Notional	188.6	0	18.9	0	1.7	2.78	0	----	----
[ST] Central heating using water: floor heating, [HS] ASHP, [HFT] Electricity, [CFT] Electricity									
Actual	86.1	0	6	0	9.4	4.02	0	4.5	0
Notional	53.8	0	5.4	0	3.6	2.78	0	----	----
[ST] Central heating using water: floor heating, [HS] ASHP, [HFT] Electricity, [CFT] Electricity									
Actual	12.2	0	0.8	0	10.4	4.02	0	4.5	0
Notional	113.2	0	11.3	0	11.4	2.78	0	----	----
[ST] No Heating or Cooling									
Actual	0	0	0	0	0	0	0	0	0
Notional	0	0	0	0	0	0	0	----	----

Key to terms

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