

Project name

BE GREEN Ramada South Ruislip Extension

As designed

Date: Tue Dec 16 14:41:15 2025

Administrative information

Building Details

Address: Long Drive, Station Approach, London, HA4 0HG

Certifier details

Name: Liam Mason

Telephone number: 01924237545

Address: 6 Silkwood Park Fryer's Way, Wakefield, WF5 9TJ

Certification tool

Calculation engine: SBEM

Calculation engine version: v6.1.e.2

Interface to calculation engine: DesignBuilder SBEM

Interface to calculation engine version: v7.3.1

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

Foundation area [m²]: 192.26The 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	18.31
Building CO ₂ emission rate (BER), kgCO ₂ /m ² annum	14.52
Target primary energy rate (TPER), kWh _{PE} /m ² annum	198.62
Building primary energy rate (BPER), kWh _{PE} /m ² annum	158.2
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	0.16	0.16	00 Floor - 00 001 Corridor_W_10
Floors	0.18	0.13	0.13	00 Floor - 00 013 Room 06 ES_S_3
Pitched roofs	0.16	0.13	0.13	00 Floor 3 - 03 003 Room 01 ES_R_4
Flat roofs	0.18	-	-	No heat loss flat roofs
Windows** and roof windows	1.6	1	1	00 Floor - 00 012 Room 06_G_9
Rooflights***	2.2	-	-	No external rooflights
Personnel doors^	1.6	1	1	00 Floor - 00 001 Corridor_D_11
Vehicle access & similar large doors	1.3	-	-	No external vehicle access doors
High usage entrance doors	3	-	-	No external high usage entrance doors

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- Indicative HVAC VRF

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.14	5.52	-	1.1	0.85
Standard value	2.5*	5	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.					

1- Indicative DHW ASHP

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	3.4	0.015
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			
00 Floor - 00 013 Room 06 ES	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 Floor - 00 005 Room 02 ES	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 Floor - 00 009 Room 04 ES	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 Floor - 00 011 Room 05 ES	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 Floor - 00 007 Room 03 ES	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 Floor - 00 003 Room 01 ES	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 Floor 1 - 01 003 Room 01 ES	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 Floor 1 - 01 005 Room 02 ES	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 Floor 1 - 01 007 Room 03 ES	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 Floor 1 - 01 009 Room 04 ES	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 Floor 1 - 01 011 Room 05 ES	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 Floor 1 - 01 015 Room 07 ES	-	-	0.5	-	-	-	-	-	-	-	-	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	
00 Floor 1 - 01 017 Room 08 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 2 - 02 015 Room 07 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 2 - 02 017 Room 08 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 2 - 02 013 Room 06 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 2 - 02 005 Room 02 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 2 - 02 009 Room 04 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 2 - 02 011 Room 05 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 2 - 02 007 Room 03 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 2 - 02 003 Room 01 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 3 - 03 003 Room 01 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 3 - 03 005 Room 02 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 3 - 03 007 Room 03 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 3 - 03 009 Room 04 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 3 - 03 011 Room 05 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 3 - 03 013 Room 06 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 3 - 03 015 Room 07 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 3 - 03 017 Room 08 ES	-	-	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
00 Floor - 00 013 Room 06 ES		100	-	-
00 Floor - 00 001 Corridor		100	-	-
00 Floor - 00 012 Room 06		100	-	-
00 Floor - 00 004 Room 02		100	-	-
00 Floor - 00 014 Store		100	-	-
00 Floor - 00 002 Room 01		100	-	-
00 Floor - 00 005 Room 02 ES		100	-	-
00 Floor - 00 009 Room 04 ES		100	-	-
00 Floor - 00 011 Room 05 ES		100	-	-
00 Floor - 00 010 Room 05		100	-	-
00 Floor - 00 008 Room 04		100	-	-
00 Floor - 00 006 Room 03		100	-	-
00 Floor - 00 007 Room 03 ES		100	-	-
00 Floor - 00 003 Room 01 ES		100	-	-
00 Floor 1 - 01 003 Room 01 ES		100	-	-
00 Floor 1 - 01 002 Room 01		100	-	-
00 Floor 1 - 01 001 Corridor		100	-	-
00 Floor 1 - 01 005 Room 02 ES		100	-	-
00 Floor 1 - 01 004 Room 02		100	-	-
00 Floor 1 - 01 014 Room 07		100	-	-
00 Floor 1 - 01 016 Room 08		100	-	-
00 Floor 1 - 01 007 Room 03 ES		100	-	-

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
00 Floor 1 - 01 006 Room 03		100	-	-
00 Floor 1 - 01 008 Room 04		100	-	-
00 Floor 1 - 01 009 Room 04 ES		100	-	-
00 Floor 1 - 01 011 Room 05 ES		100	-	-
00 Floor 1 - 01 010 Room 05		100	-	-
00 Floor 1 - 01 013 Room 06 ES		100	-	-
00 Floor 1 - 01 012 Room 06		100	-	-
00 Floor 1 - 01 015 Room 07 ES		100	-	-
00 Floor 1 - 01 017 Room 08 ES		100	-	-
00 Floor 2 - 02 016 Room 08		100	-	-
00 Floor 2 - 02 001 Corridor		100	-	-
00 Floor 2 - 02 004 Room 02		100	-	-
00 Floor 2 - 02 014 Room 07		100	-	-
00 Floor 2 - 02 015 Room 07 ES		100	-	-
00 Floor 2 - 02 017 Room 08 ES		100	-	-
00 Floor 2 - 02 013 Room 06 ES		100	-	-
00 Floor 2 - 02 012 Room 06		100	-	-
00 Floor 2 - 02 002 Room 01		100	-	-
00 Floor 2 - 02 005 Room 02 ES		100	-	-
00 Floor 2 - 02 009 Room 04 ES		100	-	-
00 Floor 2 - 02 011 Room 05 ES		100	-	-
00 Floor 2 - 02 010 Room 05		100	-	-
00 Floor 2 - 02 008 Room 04		100	-	-
00 Floor 2 - 02 006 Room 03		100	-	-
00 Floor 2 - 02 007 Room 03 ES		100	-	-
00 Floor 2 - 02 003 Room 01 ES		100	-	-
00 Floor 3 - 03 003 Room 01 ES		100	-	-
00 Floor 3 - 03 002 Room 01		100	-	-
00 Floor 3 - 03 001 Corridor		100	-	-
00 Floor 3 - 03 005 Room 02 ES		100	-	-
00 Floor 3 - 03 004 Room 02		100	-	-
00 Floor 3 - 03 014 Room 07		100	-	-
00 Floor 3 - 03 016 Room 08		100	-	-
00 Floor 3 - 03 007 Room 03 ES		100	-	-
00 Floor 3 - 03 006 Room 03		100	-	-
00 Floor 3 - 03 008 Room 04		100	-	-
00 Floor 3 - 03 009 Room 04 ES		100	-	-
00 Floor 3 - 03 011 Room 05 ES		100	-	-
00 Floor 3 - 03 010 Room 05		100	-	-
00 Floor 3 - 03 013 Room 06 ES		100	-	-
00 Floor 3 - 03 012 Room 06		100	-	-
00 Floor 3 - 03 015 Room 07 ES		100	-	-
00 Floor 3 - 03 017 Room 08 ES		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?
00 Floor - 00 013 Room 06 ES	N/A	N/A
00 Floor - 00 001 Corridor	N/A	N/A
00 Floor - 00 012 Room 06	NO (-5.7%)	NO
00 Floor - 00 004 Room 02	NO (-59.1%)	NO
00 Floor - 00 014 Store	N/A	N/A
00 Floor - 00 002 Room 01	NO (-81.1%)	NO
00 Floor - 00 005 Room 02 ES	N/A	N/A
00 Floor - 00 009 Room 04 ES	N/A	N/A
00 Floor - 00 011 Room 05 ES	N/A	N/A
00 Floor - 00 010 Room 05	YES (+5.1%)	NO
00 Floor - 00 008 Room 04	YES (+5.7%)	NO
00 Floor - 00 006 Room 03	NO (-52.8%)	NO
00 Floor - 00 007 Room 03 ES	N/A	N/A
00 Floor - 00 003 Room 01 ES	N/A	N/A
00 Floor 1 - 01 003 Room 01 ES	N/A	N/A
00 Floor 1 - 01 002 Room 01	NO (-77.1%)	NO
00 Floor 1 - 01 001 Corridor	N/A	N/A
00 Floor 1 - 01 005 Room 02 ES	N/A	N/A
00 Floor 1 - 01 004 Room 02	NO (-50.5%)	NO
00 Floor 1 - 01 014 Room 07	NO (-71.7%)	NO
00 Floor 1 - 01 016 Room 08	NO (-36.6%)	NO
00 Floor 1 - 01 007 Room 03 ES	N/A	N/A
00 Floor 1 - 01 006 Room 03	NO (-69%)	NO
00 Floor 1 - 01 008 Room 04	NO (-30.5%)	NO
00 Floor 1 - 01 009 Room 04 ES	N/A	N/A
00 Floor 1 - 01 011 Room 05 ES	N/A	N/A
00 Floor 1 - 01 010 Room 05	NO (-30.9%)	NO
00 Floor 1 - 01 013 Room 06 ES	N/A	N/A
00 Floor 1 - 01 012 Room 06	NO (-21.1%)	NO
00 Floor 1 - 01 015 Room 07 ES	N/A	N/A
00 Floor 1 - 01 017 Room 08 ES	N/A	N/A
00 Floor 2 - 02 016 Room 08	NO (-36.6%)	NO
00 Floor 2 - 02 001 Corridor	N/A	N/A
00 Floor 2 - 02 004 Room 02	NO (-50.5%)	NO
00 Floor 2 - 02 014 Room 07	NO (-71.7%)	NO
00 Floor 2 - 02 015 Room 07 ES	N/A	N/A
00 Floor 2 - 02 017 Room 08 ES	N/A	N/A
00 Floor 2 - 02 013 Room 06 ES	N/A	N/A
00 Floor 2 - 02 012 Room 06	NO (-21.1%)	NO
00 Floor 2 - 02 002 Room 01	NO (-77.1%)	NO
00 Floor 2 - 02 005 Room 02 ES	N/A	N/A
00 Floor 2 - 02 009 Room 04 ES	N/A	N/A
00 Floor 2 - 02 011 Room 05 ES	N/A	N/A
00 Floor 2 - 02 010 Room 05	NO (-30.9%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
00 Floor 2 - 02 008 Room 04	NO (-30.5%)	NO
00 Floor 2 - 02 006 Room 03	NO (-69%)	NO
00 Floor 2 - 02 007 Room 03 ES	N/A	N/A
00 Floor 2 - 02 003 Room 01 ES	N/A	N/A
00 Floor 3 - 03 003 Room 01 ES	N/A	N/A
00 Floor 3 - 03 002 Room 01	NO (-79.1%)	NO
00 Floor 3 - 03 001 Corridor	N/A	N/A
00 Floor 3 - 03 005 Room 02 ES	N/A	N/A
00 Floor 3 - 03 004 Room 02	NO (-54.8%)	NO
00 Floor 3 - 03 014 Room 07	NO (-74.2%)	NO
00 Floor 3 - 03 016 Room 08	NO (-42.1%)	NO
00 Floor 3 - 03 007 Room 03 ES	N/A	N/A
00 Floor 3 - 03 006 Room 03	NO (-71.7%)	NO
00 Floor 3 - 03 008 Room 04	NO (-36.6%)	NO
00 Floor 3 - 03 009 Room 04 ES	N/A	N/A
00 Floor 3 - 03 011 Room 05 ES	N/A	N/A
00 Floor 3 - 03 010 Room 05	NO (-37%)	NO
00 Floor 3 - 03 013 Room 06 ES	N/A	N/A
00 Floor 3 - 03 012 Room 06	NO (-64%)	NO
00 Floor 3 - 03 015 Room 07 ES	N/A	N/A
00 Floor 3 - 03 017 Room 08 ES	N/A	N/A

Regulation 25A: Consideration of high efficiency alternative energy systems

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

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Floor area [m ²]	769.1	769.1
External area [m ²]	985.9	985.9
Weather	LON	LON
Infiltration [m ³ /hm ² @ 50Pa]	5	3
Average conductance [W/K]	213.12	469.16
Average U-value [W/m ² K]	0.22	0.48
Alpha value* [%]	35.87	20.82

* 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
100	Hotels
	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	4.43	12.12
Cooling	6.39	3.93
Auxiliary	16.56	28.48
Lighting	5.46	5.25
Hot water	71.7	84.51
Equipment*	9.34	9.34
TOTAL**	104.53	134.29

* 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]	127.64	177.39
Primary energy [kWh _{PE} /m ²]	158.2	198.62
Total emissions [kg/m ²]	14.52	18.31

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	45.7	82	4.4	6.4	14.9	2.86	3.56	3.14	5.52
Notional	115.2	62.2	12.1	3.9	26.9	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

Project name

BE LEAN Ramada South Ruislip Extension

As designed

Date: Tue Dec 16 14:43:56 2025

Administrative information

Building Details

Address: Long Drive, Station Approach, London, HA4 0HG

Certifier details

Name: Liam Mason

Telephone number: 01924237545

Address: 6 Silkwood Park Fryer's Way, Wakefield, WF5 9TJ

Certification tool

Calculation engine: SBEM

Calculation engine version: v6.1.e.2

Interface to calculation engine: DesignBuilder SBEM

Interface to calculation engine version: v7.3.1

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

Foundation area [m²]: 192.26The CO₂ emission and primary energy rates of the building must not exceed the targets

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Building primary energy rate (BPER), kWh _{PE} /m ² .annum	178.59
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

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Flat roofs	0.18	-	-	No heat loss flat roofs
Windows** and roof windows	1.6	1	1	00 Floor - 00 012 Room 06_G_9
Rooflights***	2.2	-	-	No external rooflights
Personnel doors^	1.6	1	1	00 Floor - 00 001 Corridor_D_11
Vehicle access & similar large doors	1.3	-	-	No external vehicle access doors
High usage entrance doors	3	-	-	No external high usage entrance doors

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)]

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^ 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.

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Whole building electric power factor achieved by power factor correction	<0.9

1- Indicative NOTIONAL HVAC VRF

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Standard value	2.5*	5	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.					

1- Indicative NOTIONAL DHW ASHP

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	2.86	0.015
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
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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			
00 Floor - 00 013 Room 06 ES	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 Floor - 00 005 Room 02 ES	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 Floor - 00 009 Room 04 ES	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 Floor - 00 011 Room 05 ES	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 Floor - 00 007 Room 03 ES	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 Floor - 00 003 Room 01 ES	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 Floor 1 - 01 003 Room 01 ES	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 Floor 1 - 01 005 Room 02 ES	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 Floor 1 - 01 007 Room 03 ES	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 Floor 1 - 01 009 Room 04 ES	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 Floor 1 - 01 011 Room 05 ES	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 Floor 1 - 01 015 Room 07 ES	-	-	0.5	-	-	-	-	-	-	-	-	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	
00 Floor 1 - 01 017 Room 08 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 2 - 02 015 Room 07 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 2 - 02 017 Room 08 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 2 - 02 013 Room 06 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 2 - 02 005 Room 02 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 2 - 02 009 Room 04 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 2 - 02 011 Room 05 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 2 - 02 007 Room 03 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 2 - 02 003 Room 01 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 3 - 03 003 Room 01 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 3 - 03 005 Room 02 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 3 - 03 007 Room 03 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 3 - 03 009 Room 04 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 3 - 03 011 Room 05 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 3 - 03 013 Room 06 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 3 - 03 015 Room 07 ES	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 Floor 3 - 03 017 Room 08 ES	-	-	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
00 Floor - 00 013 Room 06 ES		100	-	-
00 Floor - 00 001 Corridor		100	-	-
00 Floor - 00 012 Room 06		100	-	-
00 Floor - 00 004 Room 02		100	-	-
00 Floor - 00 014 Store		100	-	-
00 Floor - 00 002 Room 01		100	-	-
00 Floor - 00 005 Room 02 ES		100	-	-
00 Floor - 00 009 Room 04 ES		100	-	-
00 Floor - 00 011 Room 05 ES		100	-	-
00 Floor - 00 010 Room 05		100	-	-
00 Floor - 00 008 Room 04		100	-	-
00 Floor - 00 006 Room 03		100	-	-
00 Floor - 00 007 Room 03 ES		100	-	-
00 Floor - 00 003 Room 01 ES		100	-	-
00 Floor 1 - 01 003 Room 01 ES		100	-	-
00 Floor 1 - 01 002 Room 01		100	-	-
00 Floor 1 - 01 001 Corridor		100	-	-
00 Floor 1 - 01 005 Room 02 ES		100	-	-
00 Floor 1 - 01 004 Room 02		100	-	-
00 Floor 1 - 01 014 Room 07		100	-	-
00 Floor 1 - 01 016 Room 08		100	-	-
00 Floor 1 - 01 007 Room 03 ES		100	-	-

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
00 Floor 1 - 01 006 Room 03		100	-	-
00 Floor 1 - 01 008 Room 04		100	-	-
00 Floor 1 - 01 009 Room 04 ES		100	-	-
00 Floor 1 - 01 011 Room 05 ES		100	-	-
00 Floor 1 - 01 010 Room 05		100	-	-
00 Floor 1 - 01 013 Room 06 ES		100	-	-
00 Floor 1 - 01 012 Room 06		100	-	-
00 Floor 1 - 01 015 Room 07 ES		100	-	-
00 Floor 1 - 01 017 Room 08 ES		100	-	-
00 Floor 2 - 02 016 Room 08		100	-	-
00 Floor 2 - 02 001 Corridor		100	-	-
00 Floor 2 - 02 004 Room 02		100	-	-
00 Floor 2 - 02 014 Room 07		100	-	-
00 Floor 2 - 02 015 Room 07 ES		100	-	-
00 Floor 2 - 02 017 Room 08 ES		100	-	-
00 Floor 2 - 02 013 Room 06 ES		100	-	-
00 Floor 2 - 02 012 Room 06		100	-	-
00 Floor 2 - 02 002 Room 01		100	-	-
00 Floor 2 - 02 005 Room 02 ES		100	-	-
00 Floor 2 - 02 009 Room 04 ES		100	-	-
00 Floor 2 - 02 011 Room 05 ES		100	-	-
00 Floor 2 - 02 010 Room 05		100	-	-
00 Floor 2 - 02 008 Room 04		100	-	-
00 Floor 2 - 02 006 Room 03		100	-	-
00 Floor 2 - 02 007 Room 03 ES		100	-	-
00 Floor 2 - 02 003 Room 01 ES		100	-	-
00 Floor 3 - 03 003 Room 01 ES		100	-	-
00 Floor 3 - 03 002 Room 01		100	-	-
00 Floor 3 - 03 001 Corridor		100	-	-
00 Floor 3 - 03 005 Room 02 ES		100	-	-
00 Floor 3 - 03 004 Room 02		100	-	-
00 Floor 3 - 03 014 Room 07		100	-	-
00 Floor 3 - 03 016 Room 08		100	-	-
00 Floor 3 - 03 007 Room 03 ES		100	-	-
00 Floor 3 - 03 006 Room 03		100	-	-
00 Floor 3 - 03 008 Room 04		100	-	-
00 Floor 3 - 03 009 Room 04 ES		100	-	-
00 Floor 3 - 03 011 Room 05 ES		100	-	-
00 Floor 3 - 03 010 Room 05		100	-	-
00 Floor 3 - 03 013 Room 06 ES		100	-	-
00 Floor 3 - 03 012 Room 06		100	-	-
00 Floor 3 - 03 015 Room 07 ES		100	-	-
00 Floor 3 - 03 017 Room 08 ES		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?
00 Floor - 00 013 Room 06 ES	N/A	N/A
00 Floor - 00 001 Corridor	N/A	N/A
00 Floor - 00 012 Room 06	NO (-5.7%)	NO
00 Floor - 00 004 Room 02	NO (-59.1%)	NO
00 Floor - 00 014 Store	N/A	N/A
00 Floor - 00 002 Room 01	NO (-81.1%)	NO
00 Floor - 00 005 Room 02 ES	N/A	N/A
00 Floor - 00 009 Room 04 ES	N/A	N/A
00 Floor - 00 011 Room 05 ES	N/A	N/A
00 Floor - 00 010 Room 05	YES (+5.1%)	NO
00 Floor - 00 008 Room 04	YES (+5.7%)	NO
00 Floor - 00 006 Room 03	NO (-52.8%)	NO
00 Floor - 00 007 Room 03 ES	N/A	N/A
00 Floor - 00 003 Room 01 ES	N/A	N/A
00 Floor 1 - 01 003 Room 01 ES	N/A	N/A
00 Floor 1 - 01 002 Room 01	NO (-77.1%)	NO
00 Floor 1 - 01 001 Corridor	N/A	N/A
00 Floor 1 - 01 005 Room 02 ES	N/A	N/A
00 Floor 1 - 01 004 Room 02	NO (-50.5%)	NO
00 Floor 1 - 01 014 Room 07	NO (-71.7%)	NO
00 Floor 1 - 01 016 Room 08	NO (-36.6%)	NO
00 Floor 1 - 01 007 Room 03 ES	N/A	N/A
00 Floor 1 - 01 006 Room 03	NO (-69%)	NO
00 Floor 1 - 01 008 Room 04	NO (-30.5%)	NO
00 Floor 1 - 01 009 Room 04 ES	N/A	N/A
00 Floor 1 - 01 011 Room 05 ES	N/A	N/A
00 Floor 1 - 01 010 Room 05	NO (-30.9%)	NO
00 Floor 1 - 01 013 Room 06 ES	N/A	N/A
00 Floor 1 - 01 012 Room 06	NO (-21.1%)	NO
00 Floor 1 - 01 015 Room 07 ES	N/A	N/A
00 Floor 1 - 01 017 Room 08 ES	N/A	N/A
00 Floor 2 - 02 016 Room 08	NO (-36.6%)	NO
00 Floor 2 - 02 001 Corridor	N/A	N/A
00 Floor 2 - 02 004 Room 02	NO (-50.5%)	NO
00 Floor 2 - 02 014 Room 07	NO (-71.7%)	NO
00 Floor 2 - 02 015 Room 07 ES	N/A	N/A
00 Floor 2 - 02 017 Room 08 ES	N/A	N/A
00 Floor 2 - 02 013 Room 06 ES	N/A	N/A
00 Floor 2 - 02 012 Room 06	NO (-21.1%)	NO
00 Floor 2 - 02 002 Room 01	NO (-77.1%)	NO
00 Floor 2 - 02 005 Room 02 ES	N/A	N/A
00 Floor 2 - 02 009 Room 04 ES	N/A	N/A
00 Floor 2 - 02 011 Room 05 ES	N/A	N/A
00 Floor 2 - 02 010 Room 05	NO (-30.9%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
00 Floor 2 - 02 008 Room 04	NO (-30.5%)	NO
00 Floor 2 - 02 006 Room 03	NO (-69%)	NO
00 Floor 2 - 02 007 Room 03 ES	N/A	N/A
00 Floor 2 - 02 003 Room 01 ES	N/A	N/A
00 Floor 3 - 03 003 Room 01 ES	N/A	N/A
00 Floor 3 - 03 002 Room 01	NO (-79.1%)	NO
00 Floor 3 - 03 001 Corridor	N/A	N/A
00 Floor 3 - 03 005 Room 02 ES	N/A	N/A
00 Floor 3 - 03 004 Room 02	NO (-54.8%)	NO
00 Floor 3 - 03 014 Room 07	NO (-74.2%)	NO
00 Floor 3 - 03 016 Room 08	NO (-42.1%)	NO
00 Floor 3 - 03 007 Room 03 ES	N/A	N/A
00 Floor 3 - 03 006 Room 03	NO (-71.7%)	NO
00 Floor 3 - 03 008 Room 04	NO (-36.6%)	NO
00 Floor 3 - 03 009 Room 04 ES	N/A	N/A
00 Floor 3 - 03 011 Room 05 ES	N/A	N/A
00 Floor 3 - 03 010 Room 05	NO (-37%)	NO
00 Floor 3 - 03 013 Room 06 ES	N/A	N/A
00 Floor 3 - 03 012 Room 06	NO (-64%)	NO
00 Floor 3 - 03 015 Room 07 ES	N/A	N/A
00 Floor 3 - 03 017 Room 08 ES	N/A	N/A

Regulation 25A: Consideration of high efficiency alternative energy systems

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

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Floor area [m ²]	769.1	769.1
External area [m ²]	985.9	985.9
Weather	LON	LON
Infiltration [m ³ /hm ² @ 50Pa]	5	3
Average conductance [W/K]	213.12	469.16
Average U-value [W/m ² K]	0.22	0.48
Alpha value* [%]	35.87	20.82

* 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
100	Hotels
	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	5.27	12.12
Cooling	5.43	3.93
Auxiliary	16.56	28.48
Lighting	5.46	5.25
Hot water	85.24	84.51
Equipment*	9.34	9.34
TOTAL**	117.95	134.29

* 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]	127.64	177.39
Primary energy [kWh _{PE} /m ²]	178.59	198.62
Total emissions [kg/m ²]	16.4	18.31

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	45.7	82	5.3	5.4	14.9	2.41	4.2	2.64	6.5
Notional	115.2	62.2	12.1	3.9	26.9	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