

Project name

**190318_8031_Southampton
Row NewBeLean**

As built

Date: Tue May 14 13:07:02 2019

Administrative information

Building Details

Address: 8-10 Southampton Row, London, WC1B AE

Owner Details

Name:

Telephone number:

Address: , ,

Certification tool

Calculation engine: Apache

Calculation engine version: 7.0.10

Interface to calculation engine: IES Virtual Environment

Interface to calculation engine version: 7.0.10

BRUKL compliance check version: v5.4.b.0

Certifier details

Name:

Telephone number:

Address: , ,

Criterion 1: The calculated CO₂ emission rate for the building must not exceed the target

The building does not comply with England Building Regulations Part L 2013

CO ₂ emission rate from the notional building, kgCO ₂ /m ² .annum	59.9
Target CO ₂ emission rate (TER), kgCO ₂ /m ² .annum	59.9
Building CO ₂ emission rate (BER), kgCO ₂ /m ² .annum	65.2
Are emissions from the building less than or equal to the target?	BER > TER
Are as built details the same as used in the BER calculations?	Separate submission

Criterion 2: The performance of the building fabric and fixed building services should achieve reasonable overall standards of energy efficiency

Values which do not achieve the standards in the Non-Domestic Building Services Compliance Guide and Part L are displayed in red.

Building fabric

Element	U _a -Limit	U _a -Calc	U _i -Calc	Surface where the maximum value occurs*
Wall**	0.35	0.21	1.38	GH00000B:Surf[0]
Floor	0.25	0.83	3.37	G_000006:Surf[0]
Roof	0.25	0.12	0.12	4H000021:Surf[0]
Windows***, roof windows, and rooflights	2.2	1.31	1.8	1H000012:Surf[0]
Personnel doors	2.2	2.2	2.2	GH00000B:Surf[2]
Vehicle access & similar large doors	1.5	-	-	No Vehicle access doors in building
High usage entrance doors	3.5	-	-	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)]		
* There might be more than one surface where the maximum U-value occurs.				
** 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.				
N.B.: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.				

Air Permeability	Worst acceptable standard	This building
m ³ /(h.m ²) at 50 Pa	10	15

Building services

The standard values listed below are minimum values for efficiencies and maximum values for SFPs. Refer to the [Non-Domestic Building Services Compliance Guide](#) for details.

Whole building lighting automatic monitoring & targeting with alarms for out-of-range values	YES
Whole building electric power factor achieved by power factor correction	>0.95

1- AHU4 - Basement Wall Mounted VRF (PKA-M100KA.TH)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.92	3.95	0	1.8	0.75
Standard value	0.91*	3.2	N/A	1.6^	0.5
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
* Standard shown is for gas single boiler systems <=2 MW output. For single boiler systems >2 MW or multi-boiler systems, (overall) limiting efficiency is 0.86. For any individual boiler in a multi-boiler system, limiting efficiency is 0.82.					
^ Limiting SFP may be extended by the amounts specified in the Non-Domestic Building Services Compliance Guide if the system includes additional components as listed in the Guide.					

2- Kitchen (AHU 5)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.92	-	0.2	0.64	-
Standard value	0.91	N/A	N/A	1.5^	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
^ Limiting SFP may be extended by the amounts specified in the Non-Domestic Building Services Compliance Guide if the system includes additional components as listed in the Guide.					

3- FCU (AHU2, VRF350, Fifth Floor NEW)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.92	2.33	0	2.11	0.74
Standard value	0.91*	2.55	N/A	1.6^	0.5
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
* Standard shown is for gas single boiler systems <=2 MW output. For single boiler systems >2 MW or multi-boiler systems, (overall) limiting efficiency is 0.86. For any individual boiler in a multi-boiler system, limiting efficiency is 0.82.					
^ Limiting SFP may be extended by the amounts specified in the Non-Domestic Building Services Compliance Guide if the system includes additional components as listed in the Guide.					

4- EnSuite Bathrooms (Elec. radiator heating only)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.81	-	0.2	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- Internal Stairs (Elec. radiator heating only)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.81	-	0.2	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

6- Linen Store (Elec Radiator + Extract)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1	-	0.2	0	0.74
Standard value	N/A	N/A	N/A	N/A	0.5
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO

7- Store (Extract Only)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1	-	0.2	0	0.74
Standard value	N/A	N/A	N/A	N/A	0.5
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO

8- FCU (AHU1, VRF350, Fifth Floor EXISTING)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.92	2.33	0	1.99	0.76
Standard value	0.91*	2.55	N/A	1.6^	0.5
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
* Standard shown is for gas single boiler systems <=2 MW output. For single boiler systems >2 MW or multi-boiler systems, (overall) limiting efficiency is 0.86. For any individual boiler in a multi-boiler system, limiting efficiency is 0.82.					
^ Limiting SFP may be extended by the amounts specified in the Non-Domestic Building Services Compliance Guide if the system includes additional components as listed in the Guide.					

"No HWS in project, or hot water is provided by HVAC system"

1- CHECK2-CHP

	CHPQA quality index	CHP electrical efficiency
This building	140	0.3
Standard value	105	0.2

Local mechanical ventilation, exhaust, and terminal units

ID	System type in Non-domestic Building Services Compliance Guide
A	Local supply or extract ventilation units serving a single area
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 supply and extract ventilation units serving a single room or zone with heating and heat recovery
E	Local supply and extract ventilation system serving a single area with heating and heat recovery
F	Other local ventilation units
G	Fan-assisted terminal VAV unit
H	Fan coil units
I	Zonal extract system where the fan is remote from the zone with grease filter

Zone name	SFP [W/(l/s)]									HR efficiency	
	A	B	C	D	E	F	G	H	I	Zone	Standard
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1		
1_Hotel_BOH_P	-	-	-	-	-	-	-	0.3	-	-	N/A
1_Hotel_Emergency Exit_P	-	-	-	-	-	-	-	0.3	-	-	N/A
1_Hotel_Lobby BOH_I	-	-	-	-	-	-	-	0.3	-	-	N/A
2_Hotel_2.07_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
2_Hotel_2.08_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
2_Hotel_2.09_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
2_Hotel_2.10_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
2_Hotel_2.11_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
2_Hotel_2.12_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
2_Hotel_2.13_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
2_Hotel_2.14_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A

Zone name	SFP [W/(l/s)]									HR efficiency	
	ID of system type	A	B	C	D	E	F	G	H		
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
2_Hotel_2.15_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
2_Hotel_Lobby 2_I	-	-	-	-	-	-	-	0.3	-	-	N/A
2_Hotel_Lower Lift Lobby_I	-	-	-	-	-	-	-	0.3	-	-	N/A
3_Hotel_3.07_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
3_Hotel_3.08_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
3_Hotel_3.09_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
3_Hotel_3.10_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
3_Hotel_3.11_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
3_Hotel_3.12_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
3_Hotel_3.13_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
3_Hotel_3.14_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
3_Hotel_3.15_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
3_Hotel_3.16_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
3_Hotel_Lobby 2_I	-	-	-	-	-	-	-	0.3	-	-	N/A
3_Hotel_Lower Lift Lobby_I	-	-	-	-	-	-	-	0.3	-	-	N/A
4_Hotel_4.07_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
4_Hotel_4.08_Bedroom_I	-	-	-	-	-	-	-	0.3	-	-	N/A
4_Hotel_4.08_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
4_Hotel_4.09_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
4_Hotel_4.10_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
4_Hotel_4.11_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
4_Hotel_4.12_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
4_Hotel_4.13_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
4_Hotel_4.14_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
4_Hotel_4.15_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
4_Hotel_4.16_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
4_Hotel_Lobby 2_I	-	-	-	-	-	-	-	0.3	-	-	N/A
4_Hotel_Lower Lift Lobby_I	-	-	-	-	-	-	-	0.3	-	-	N/A
5_Hotel_5.07_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
5_Hotel_5.08_Bedroom_I	-	-	-	-	-	-	-	0.3	-	-	N/A
5_Hotel_5.08_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
5_Hotel_5.09_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
5_Hotel_5.10_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
5_Hotel_5.11_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
5_Hotel_5.12_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
5_Hotel_5.13_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
5_Hotel_5.14_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
5_Hotel_5.15_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
5_Hotel_5.16_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
5_Hotel_Lobby 2_I	-	-	-	-	-	-	-	0.3	-	-	N/A
5_Hotel_Lower Lift Lobby_I	-	-	-	-	-	-	-	0.3	-	-	N/A
6_Hotel_6.04_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
6_Hotel_6.05_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A

Zone name	SFP [W/(l/s)]									HR efficiency	
	A	B	C	D	E	F	G	H	I		
ID of system type	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1		
6_Hotel_6.06_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
6_Hotel_6.07_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
6_Hotel_6.08_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
6_Hotel_6.09_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
6_Hotel_6.10_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
6_Hotel_6.11_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
6_Hotel_6.12_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
6_Hotel_6.13_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
6_Hotel_Lobby 2_I	-	-	-	-	-	-	-	0.3	-	-	N/A
6_Hotel_Lower Lift Lobby_I	-	-	-	-	-	-	-	0.3	-	-	N/A
7_Hotel_7.03_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
7_Hotel_7.04_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
7_Hotel_7.05_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
7_Hotel_7.06_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
7_Hotel_7.07_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
7_Hotel_7.08_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
7_Hotel_7.09_Bedroom_P	-	-	-	-	-	-	-	0.3	-	-	N/A
7_Hotel_Lobby 2_I	-	-	-	-	-	-	-	0.3	-	-	N/A
7_Hotel_Lobby 2_I	-	-	-	-	-	-	-	0.3	-	-	N/A
7_Hotel_Lower Lift Lobby_I	-	-	-	-	-	-	-	0.3	-	-	N/A
8_LLord_Plant Lobby_I	-	-	-	-	-	-	-	0.3	-	-	N/A
8_Plant Room_P	-	-	-	-	-	-	-	0.3	-	-	N/A
9_LLord_Lobby_P	-	-	-	-	-	-	-	0.3	-	-	N/A
G_Hotel_BOH_P	-	-	-	-	-	-	-	0.3	-	-	N/A
G_Hotel_Emergency Exit_P	-	-	-	-	-	-	-	0.3	-	-	N/A
G_Hotel_Lobby_I	-	-	-	-	-	-	-	0.3	-	-	N/A
G_Substation_P	-	-	-	-	-	-	-	0.3	-	-	N/A

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name	Standard value	Luminaire	Lamp	Display lamp	
	60	60	60	22	
1_Hotel_BOH_P	-	-	51	-	70
1_Hotel_Emergency Exit_P	-	-	67	-	57
1_Hotel_Kitchen_P	-	-	60	-	571
1_Hotel_Lobby BOH_I	-	-	71	-	70
2_Hotel_2.07_Bedroom_P	-	-	133	-	45
2_Hotel_2.08_Bathroom_I	-	-	216	-	22
2_Hotel_2.08_Bathroom_I	-	-	185	-	23
2_Hotel_2.08_Bedroom_P	-	-	119	-	97
2_Hotel_2.09_Bathroom_I	-	-	219	-	21
2_Hotel_2.09_Bedroom_P	-	-	119	-	88
2_Hotel_2.10_Bathroom_I	-	-	201	-	25
2_Hotel_2.10_Bedroom_P	-	-	130	-	58

General lighting and display lighting		Luminous efficacy [lm/W]			
Zone name		Luminaire	Lamp	Display lamp	General lighting [W]
	Standard value	60	60	22	
2_Hotel_2.11_Bathroom_P		-	233	-	21
2_Hotel_2.11_Bedroom_P		-	134	-	52
2_Hotel_2.12_Bathroom_I		-	225	-	21
2_Hotel_2.12_Bedroom_P		-	139	-	72
2_Hotel_2.13_Bathroom_I		-	222	-	22
2_Hotel_2.13_Bedroom_P		-	124	-	84
2_Hotel_2.14_Bathroom_I		-	224	-	22
2_Hotel_2.14_Bedroom_P		-	136	-	63
2_Hotel_2.15_Bathroom_I		-	227	-	21
2_Hotel_2.15_Bedroom_P		-	132	-	65
2_Hotel_2nd Stair_I		-	129	-	54
2_Hotel_Linen Store_P		59	-	-	26
2_Hotel_Lobby 2_I		-	191	-	58
2_Hotel_Lower Lift Lobby_I		-	213	-	11
3_Hotel_2nd Stair_I		-	122	-	28
3_Hotel_3.07_Bathroom_I		-	190	-	23
3_Hotel_3.07_Bedroom_P		-	135	-	45
3_Hotel_3.08_Bathroom_I		-	196	-	22
3_Hotel_3.08_Bedroom_P		-	124	-	69
3_Hotel_3.09_Bathroom_I		-	194	-	22
3_Hotel_3.09_Bedroom_P		-	129	-	62
3_Hotel_3.10_Bathroom_I		-	194	-	22
3_Hotel_3.10_Bedroom_P		-	125	-	70
3_Hotel_3.11_Bathroom_I		-	176	-	26
3_Hotel_3.11_Bedroom_P		-	124	-	51
3_Hotel_3.12_Bathroom_I		-	192	-	24
3_Hotel_3.12_Bedroom_P		-	122	-	68
3_Hotel_3.13_Bathroom_P		-	190	-	22
3_Hotel_3.13_Bedroom_P		-	124	-	80
3_Hotel_3.14_Bathroom_I		-	194	-	22
3_Hotel_3.14_Bedroom_P		-	122	-	70
3_Hotel_3.15_Bathroom_I		-	198	-	21
3_Hotel_3.15_Bedroom_P		-	124	-	67
3_Hotel_3.16_Bathroom_I		-	199	-	21
3_Hotel_3.16_Bedroom_P		-	123	-	69
3_Hotel_Linen Store_P		55	-	-	26
3_Hotel_Lobby 2_I		-	171	-	63
3_Hotel_Lower Lift Lobby_I		-	194	-	11
3_Hotel_Store_I		93	-	-	7
4_Hotel_2nd Stair_I		-	122	-	28
4_Hotel_4.07_Bathroom_I		-	186	-	23
4_Hotel_4.07_Bedroom_P		-	133	-	45
4_Hotel_4.08_Bedroom_I		-	196	-	15

General lighting and display lighting		Luminous efficacy [lm/W]			
Zone name		Luminaire	Lamp	Display lamp	General lighting [W]
	Standard value	60	60	22	
4_Hotel_4.08_Bedroom_P		-	124	-	69
4_Hotel_4.09_Bathroom_I		-	194	-	22
4_Hotel_4.09_Bedroom_P		-	129	-	62
4_Hotel_4.10_Bathroom_I		-	194	-	22
4_Hotel_4.10_Bedroom_P		-	125	-	70
4_Hotel_4.11_Bathroom_I		-	176	-	26
4_Hotel_4.11_Bedroom_P		-	124	-	51
4_Hotel_4.12_Bathroom_I		-	192	-	24
4_Hotel_4.12_Bedroom_P		-	122	-	68
4_Hotel_4.13_Bathroom_P		-	190	-	22
4_Hotel_4.13_Bedroom_P		-	124	-	80
4_Hotel_4.14_Bathroom_I		-	194	-	22
4_Hotel_4.14_Bedroom_P		-	122	-	70
4_Hotel_4.15_Bathroom_I		-	198	-	21
4_Hotel_4.15_Bedroom_P		-	124	-	67
4_Hotel_4.16_Bathroom_I		-	199	-	21
4_Hotel_4.16_Bedroom_P		-	123	-	69
4_Hotel_Linen Store_P		55	-	-	26
4_Hotel_Lobby 2_I		-	171	-	63
4_Hotel_Lower Lift Lobby_I		-	194	-	11
4_Hotel_Store_I		93	-	-	7
5_Hotel_2nd Stair_I		-	122	-	28
5_Hotel_5.07_Bathroom_I		-	182	-	23
5_Hotel_5.07_Bedroom_P		-	131	-	45
5_Hotel_5.08_Bedroom_I		-	196	-	15
5_Hotel_5.08_Bedroom_P		-	124	-	69
5_Hotel_5.09_Bathroom_I		-	194	-	22
5_Hotel_5.09_Bedroom_P		-	129	-	62
5_Hotel_5.10_Bathroom_I		-	194	-	22
5_Hotel_5.10_Bedroom_P		-	125	-	70
5_Hotel_5.11_Bathroom_I		-	176	-	26
5_Hotel_5.11_Bedroom_P		-	124	-	51
5_Hotel_5.12_Bathroom_I		-	192	-	24
5_Hotel_5.12_Bedroom_P		-	122	-	68
5_Hotel_5.13_Bathroom_P		-	190	-	22
5_Hotel_5.13_Bedroom_P		-	124	-	80
5_Hotel_5.14_Bathroom_I		-	194	-	22
5_Hotel_5.14_Bedroom_P		-	122	-	70
5_Hotel_5.15_Bathroom_I		-	198	-	21
5_Hotel_5.15_Bedroom_P		-	124	-	67
5_Hotel_5.16_Bathroom_I		-	199	-	21
5_Hotel_5.16_Bedroom_P		-	123	-	69
5_Hotel_Linen Store_P		55	-	-	26

General lighting and display lighting		Luminous efficacy [lm/W]			
Zone name		Luminaire	Lamp	Display lamp	General lighting [W]
	Standard value	60	60	22	
5_Hotel_Lobby 2_I		-	171	-	63
5_Hotel_Lower Lift Lobby_I		-	194	-	11
5_Hotel_Store_I		93	-	-	7
6_Hotel_2nd Stair_I		-	122	-	28
6_Hotel_6.04_Bathroom_I		-	182	-	23
6_Hotel_6.04_Bedroom_P		-	128	-	57
6_Hotel_6.05_Bathroom_I		-	196	-	22
6_Hotel_6.05_Bedroom_P		-	124	-	69
6_Hotel_6.06_Bathroom_I		-	194	-	22
6_Hotel_6.06_Bedroom_P		-	129	-	62
6_Hotel_6.07_Bathroom_I		-	194	-	22
6_Hotel_6.07_Bedroom_P		-	125	-	70
6_Hotel_6.08_Bathroom_I		-	176	-	26
6_Hotel_6.08_Bedroom_P		-	124	-	51
6_Hotel_6.09_Bathroom_I		-	192	-	24
6_Hotel_6.09_Bedroom_P		-	122	-	68
6_Hotel_6.10_Bathroom_P		-	190	-	22
6_Hotel_6.10_Bedroom_P		-	124	-	80
6_Hotel_6.11_Bathroom_I		-	194	-	22
6_Hotel_6.11_Bedroom_P		-	122	-	70
6_Hotel_6.12_Bathroom_I		-	198	-	21
6_Hotel_6.12_Bedroom_P		-	124	-	67
6_Hotel_6.13_Bathroom_I		-	199	-	21
6_Hotel_6.13_Bedroom_P		-	123	-	69
6_Hotel_Linen Store_P		55	-	-	26
6_Hotel_Lobby 2_I		-	183	-	56
6_Hotel_Lower Lift Lobby_I		-	194	-	11
6_Hotel_Store_I		93	-	-	7
7_Hotel_2nd Stair_I		-	122	-	28
7_Hotel_7.03_Bathroom_I		-	193	-	23
7_Hotel_7.03_Bedroom_P		-	162	-	36
7_Hotel_7.04_Bathroom_I		-	195	-	22
7_Hotel_7.04_Bedroom_P		-	126	-	64
7_Hotel_7.05_Bathroom_I		-	194	-	22
7_Hotel_7.05_Bedroom_P		-	124	-	66
7_Hotel_7.06_Bathroom_I		-	194	-	22
7_Hotel_7.06_Bedroom_P		-	117	-	74
7_Hotel_7.07_Bathroom_I		-	194	-	22
7_Hotel_7.07_Bedroom_P		-	126	-	60
7_Hotel_7.08_Bathroom_I		-	198	-	21
7_Hotel_7.08_Bedroom_P		-	129	-	57
7_Hotel_7.09_Bathroom_I		-	199	-	21
7_Hotel_7.09_Bedroom_P		-	130	-	56

General lighting and display lighting		Luminous efficacy [lm/W]			
Zone name		Luminaire	Lamp	Display lamp	General lighting [W]
	Standard value	60	60	22	
7_Hotel_Linen Store_P		65	-	-	15
7_Hotel_Linen/Cleaners_I		63	-	-	16
7_Hotel_Lobby 2_I		-	265	-	6
7_Hotel_Lobby 2_I		-	183	-	37
7_Hotel_Lower Lift Lobby_I		-	194	-	11
8_LLord_Plant Lobby_I		-	231	-	9
8_Plant Room_P		44	-	-	832
9_LLord_Lobby_P		-	256	-	17
G_Hotel_BOH_P		-	56	-	56
G_Hotel_Emergency Exit_P		-	69	-	54
G_Hotel_Lobby_I		-	247	-	5
G_Substation_P		52	-	-	148

Criterion 3: The spaces in the building should have appropriate passive control measures to limit solar gains

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
1_Hotel_BOH_P	N/A	N/A
1_Hotel_Emergency Exit_P	N/A	N/A
1_Hotel_Lobby BOH_I	N/A	N/A
2_Hotel_2.07_Bedroom_P	NO (-64.2%)	NO
2_Hotel_2.08_Bedroom_P	NO (-46%)	NO
2_Hotel_2.09_Bedroom_P	NO (-20.6%)	NO
2_Hotel_2.10_Bedroom_P	YES (+1.7%)	NO
2_Hotel_2.11_Bedroom_P	YES (+15.1%)	NO
2_Hotel_2.12_Bedroom_P	NO (-27.3%)	NO
2_Hotel_2.13_Bedroom_P	NO (-1.7%)	NO
2_Hotel_2.14_Bedroom_P	YES (+29.6%)	NO
2_Hotel_2.15_Bedroom_P	YES (+20.2%)	NO
2_Hotel_Lobby 2_I	N/A	N/A
2_Hotel_Lower Lift Lobby_I	N/A	N/A
3_Hotel_3.07_Bedroom_P	NO (-63.8%)	NO
3_Hotel_3.08_Bedroom_P	NO (-65.1%)	NO
3_Hotel_3.09_Bedroom_P	NO (-36.9%)	NO
3_Hotel_3.10_Bedroom_P	NO (-16.8%)	NO
3_Hotel_3.11_Bedroom_P	NO (-12.7%)	NO
3_Hotel_3.12_Bedroom_P	YES (+13.6%)	NO
3_Hotel_3.13_Bedroom_P	NO (-73.9%)	NO
3_Hotel_3.14_Bedroom_P	YES (+15%)	NO
3_Hotel_3.15_Bedroom_P	YES (+14.2%)	NO
3_Hotel_3.16_Bedroom_P	YES (+6.8%)	NO
3_Hotel_Lobby 2_I	N/A	N/A
3_Hotel_Lower Lift Lobby_I	N/A	N/A
4_Hotel_4.07_Bedroom_P	NO (-64.2%)	NO
4_Hotel_4.08_Bedroom_I	N/A	N/A

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
4_Hotel_4.08_Bedroom_P	NO (-64.4%)	NO
4_Hotel_4.09_Bedroom_P	NO (-35.5%)	NO
4_Hotel_4.10_Bedroom_P	NO (-14.5%)	NO
4_Hotel_4.11_Bedroom_P	NO (-10.6%)	NO
4_Hotel_4.12_Bedroom_P	YES (+16.2%)	NO
4_Hotel_4.13_Bedroom_P	NO (-44.6%)	NO
4_Hotel_4.14_Bedroom_P	YES (+17.4%)	NO
4_Hotel_4.15_Bedroom_P	YES (+16.6%)	NO
4_Hotel_4.16_Bedroom_P	YES (+9.1%)	NO
4_Hotel_Lobby 2_I	N/A	N/A
4_Hotel_Lower Lift Lobby_I	N/A	N/A
5_Hotel_5.07_Bedroom_P	NO (-71.8%)	NO
5_Hotel_5.08_Bedroom_I	N/A	N/A
5_Hotel_5.08_Bedroom_P	NO (-64.2%)	NO
5_Hotel_5.09_Bedroom_P	NO (-35.3%)	NO
5_Hotel_5.10_Bedroom_P	NO (-13.9%)	NO
5_Hotel_5.11_Bedroom_P	NO (-10.1%)	NO
5_Hotel_5.12_Bedroom_P	YES (+16.4%)	NO
5_Hotel_5.13_Bedroom_P	NO (-44.6%)	NO
5_Hotel_5.14_Bedroom_P	YES (+17.4%)	NO
5_Hotel_5.15_Bedroom_P	YES (+16.6%)	NO
5_Hotel_5.16_Bedroom_P	YES (+9.1%)	NO
5_Hotel_Lobby 2_I	N/A	N/A
5_Hotel_Lower Lift Lobby_I	N/A	N/A
6_Hotel_6.04_Bedroom_P	NO (-0.8%)	NO
6_Hotel_6.05_Bedroom_P	NO (-64%)	NO
6_Hotel_6.06_Bedroom_P	NO (-34.9%)	NO
6_Hotel_6.07_Bedroom_P	NO (-13.2%)	NO
6_Hotel_6.08_Bedroom_P	NO (-9.8%)	NO
6_Hotel_6.09_Bedroom_P	YES (+16.6%)	NO
6_Hotel_6.10_Bedroom_P	NO (-44.6%)	NO
6_Hotel_6.11_Bedroom_P	YES (+17.4%)	NO
6_Hotel_6.12_Bedroom_P	YES (+16.6%)	NO
6_Hotel_6.13_Bedroom_P	YES (+9.1%)	NO
6_Hotel_Lobby 2_I	N/A	N/A
6_Hotel_Lower Lift Lobby_I	N/A	N/A
7_Hotel_7.03_Bedroom_P	NO (-41.6%)	NO
7_Hotel_7.04_Bedroom_P	NO (-57%)	NO
7_Hotel_7.05_Bedroom_P	NO (-13.3%)	NO
7_Hotel_7.06_Bedroom_P	YES (+7%)	NO
7_Hotel_7.07_Bedroom_P	YES (+23.4%)	NO
7_Hotel_7.08_Bedroom_P	YES (+21.1%)	NO
7_Hotel_7.09_Bedroom_P	YES (+25.6%)	NO
7_Hotel_Lobby 2_I	N/A	N/A
7_Hotel_Lobby 2_I	N/A	N/A
7_Hotel_Lower Lift Lobby_I	N/A	N/A
8_LLord_Plant Lobby_I	N/A	N/A
8_Plant Room_P	N/A	N/A
9_LLord_Lobby_P	NO (-24.2%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
G_Hotel_BOH_P	N/A	N/A
G_Hotel_Emergency Exit_P	N/A	N/A
G_Hotel_Lobby_I	N/A	N/A
G_Substation_P	N/A	N/A

Criterion 4: The performance of the building, as built, should be consistent with the calculated BER

Separate submission

Criterion 5: The necessary provisions for enabling energy-efficient operation of the building should be in place

Separate submission

EPBD (Recast): Consideration of 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
Area [m ²]	2317.3	2317.3
External area [m ²]	1554.3	1554.3
Weather	LON	LON
Infiltration [m ³ /hm ² @ 50Pa]	15	3
Average conductance [W/K]	709.81	0
Average U-value [W/m ² K]	0.46	0
Alpha value* [%]	10.39	10

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

Building Use

% Area Building Type

A1/A2 Retail/Financial and Professional services
A3/A4/A5 Restaurants and Cafes/Drinking Est./Takeaways
B1 Offices and Workshop businesses
B2 to B7 General Industrial and Special Industrial Groups
B8 Storage or Distribution
100 C1 Hotels
C2 Residential Institutions: Hospitals and Care Homes
C2 Residential Institutions: Residential schools
C2 Residential Institutions: Universities and colleges
C2A Secure Residential Institutions
Residential spaces
D1 Non-residential Institutions: Community/Day Centre
D1 Non-residential Institutions: Libraries, Museums, and Galleries
D1 Non-residential Institutions: Education
D1 Non-residential Institutions: Primary Health Care Building
D1 Non-residential Institutions: Crown and County Courts
D2 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	27.4	18.26
Cooling	3.51	4.53
Auxiliary	27.9	24.28
Lighting	6.27	12.1
Hot water	160.41	156.84
Equipment*	38.2	38.2
TOTAL**	225.49	216.01

* 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

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	144.72	118.49
Primary energy* [kWh/m ²]	375.77	334.47
Total emissions [kg/m ²]	65.2	59.9

* Primary energy is net of any electrical energy displaced by CHP generators, if applicable.

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] Fan coil systems, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity									
Actual	26.6	63.2	8.4	4.9	37.7	0.88	3.58	0.92	4.65
Notional	0	0	0	0	0	0	0	----	----
[ST] Central heating using air distribution, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity									
Actual	567.8	0	147.8	0	0	1.07	0	0.81	0
Notional	18.5	78.8	5.9	5.8	26.9	0.86	3.79	----	----
[ST] Other local room heater - unfanned, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity									
Actual	76.1	0	26.4	0	29.8	0.8	0	1	0
Notional	343	0	110.5	0	29.6	0.86	0	----	----
[ST] Central heating using air distribution, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity									
Actual	43.5	0	15.6	0	12.1	0.77	0	0.92	0
Notional	69.3	0	22.3	0	28.3	0.86	0	----	----
[ST] Fan coil systems, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity									
Actual	871.9	5.1	278.5	0.4	35.3	0.87	3.61	0.92	4.65
Notional	0	0	0	0	20.9	0.86	0	----	----
[ST] Central heating using air distribution, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity									
Actual	84.5	0	22	0	0	1.07	0	0.81	0
Notional	9.4	58.5	3	4.3	17.4	0.86	3.79	----	----
[ST] Fan coil systems, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity									
Actual	55.6	42.5	18	2.3	13.3	0.86	5.04	0.92	6.4
Notional	0	0	0	0	8.4	0.86	0	----	----
[ST] Other local room heater - unfanned, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity									
Actual	86.3	0	30	0	1.9	0.8	0	1	0
Notional	26.9	87	8.7	6.4	10.9	0.86	3.79	----	----
[ST] No Heating or Cooling									
Actual	0	0	0	0	0	0	0	0	0
Notional	4.8	0	1.6	0	1.8	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

Key Features

The Building Control Body is advised to give particular attention to items whose specifications are better than typically expected.

Building fabric

Element	U _{i-Typ}	U _{i-Min}	Surface where the minimum value occurs*
Wall	0.23	0.15	1H000002:Surf[1]
Floor	0.2	0.1	G_00000F:Surf[0]
Roof	0.15	0.12	4H000021:Surf[0]
Windows, roof windows, and rooflights	1.5	1.3	1H00000F:Surf[0]
Personnel doors	1.5	2.2	GH00000B:Surf[2]
Vehicle access & similar large doors	1.5	-	No Vehicle access doors in building
High usage entrance doors	1.5	-	No High usage entrance doors in building
U _{i-Typ} = Typical individual element U-values [W/(m ² K)]		U _{i-Min} = Minimum individual element U-values [W/(m ² K)]	
* There might be more than one surface where the minimum U-value occurs.			

Air Permeability	Typical value	This building
m ³ /(h.m ²) at 50 Pa	5	15