

Project name

ET_WholeBuilding_Part5

As built

Date: Mon Nov 25 09:14:44 2024

Administrative information

Building Details

Address: Address 1, City, Postcode

Certifier details

Name: Name

Telephone number: Phone

Address: Street Address, City, Postcode

Certification tool

Calculation engine: Apache

Calculation engine version: 7.0.26

Interface to calculation engine: IES Virtual Environment

Interface to calculation engine version: 7.0.26

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

Foundation area [m²]: 1867.64The 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	3.84
Building CO ₂ emission rate (BER), kgCO ₂ /m ² annum	3.58
Target primary energy rate (TPER), kWh _{PE} /m ² annum	42.47
Building primary energy rate (BPER), kWh _{PE} /m ² annum	39.27
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	-	-	UNKNOWN
Floors	0.18	0.15	0.15	00000168:Surf[0]
Pitched roofs	0.16	0.12	0.12	B100006F:Surf[3]
Flat roofs	0.18	0.12	0.12	00000123:Surf[0]
Windows** and roof windows	1.6	1.16	1.48	00000150:Surf[1]
Rooflights***	2.2	-	-	No roof lights in building
Personnel doors [^]	1.6	-	-	No personnel doors in building
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/(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	3

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	YES
Whole building electric power factor achieved by power factor correction	>0.95

1- 03 WC AHU

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	2.86	4.4	0	1.8	0.76
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					YES
* 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- 02 Displcement_AHU_Tower (Office)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	2.86	4.4	0	1.8	0.76
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					YES
* 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- 02_FCU_AHU_Tower (Laboratory)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	2.86	4.4	0	1.8	0.76
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					YES
* 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.					

4- 02_FCU_AHU_Podium (Laboratory)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	2.86	4.4	0	1.8	0.76
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					YES
* 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.					

5- 02_FCU_AHU_Podium (Laboratory_WU)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	2.86	4.4	0	1.8	0.76
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					YES
* 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.					

6- 02 Displacement_inboundAHU_Tower (Office)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	2.86	4.4	0	1.8	0.76
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					YES
* 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.					

7- 02 Entrance

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	2.86	4.4	0	1.8	0.76
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					YES
* 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.					

8- 02 Displacement_AHU_Cafe (Office)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	2.86	4.4	0	1.8	0.76
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					YES
* 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.					

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

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		
04_Perimeter-Office		-	-	-	-	-	-	-	0.3	-	-	N/A
04_Perimeter-Office		-	-	-	-	-	-	-	0.3	-	-	N/A
04_Office-Internal		-	-	-	-	-	-	-	0.3	-	-	N/A
04_Office-Internal		-	-	-	-	-	-	-	0.3	-	-	N/A
04_Perimeter-Office		-	-	-	-	-	-	-	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	Zone	Standard
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1			
05_Office_Inner	-	-	-	-	-	-	-	0.3	-	-	-	N/A
05_Office_Inner	-	-	-	-	-	-	-	0.3	-	-	-	N/A
05_Office_Inner	-	-	-	-	-	-	-	0.3	-	-	-	N/A
05_Office_Inner	-	-	-	-	-	-	-	0.3	-	-	-	N/A
00_Kitchen	-	-	-	-	-	-	-	0.2	-	-	-	N/A
00_Circulation	-	-	-	-	-	-	-	0.2	-	-	-	N/A
00_Store	-	-	-	-	-	-	-	0.2	-	-	-	N/A
00_UKPN	-	-	-	-	-	-	-	0.2	-	-	-	N/A
00_BOH	-	-	-	-	-	-	-	0.2	-	-	-	N/A
00_Circulation	-	-	-	-	-	-	-	0.2	-	-	-	N/A
00_Open-Lobby	-	-	-	-	-	-	-	0.2	-	-	-	N/A
00_Circulation	-	-	-	-	-	-	-	0.2	-	-	-	N/A

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
Standard value	95	80	0.3	
26_WC	120	-	-	
26_Circulation	120	-	-	
26_Circulation	120	-	-	
26_Stair	120	-	-	
26_Circulation	120	-	-	
26_Circulation	120	-	-	
26_Circulation	120	-	-	
26_Server	120	-	-	
27_Stair	120	-	-	
27_Circulation	120	-	-	
27_Circulation	120	-	-	
27_Circulation	120	-	-	
27_Circulation	120	-	-	
27_Circulation	120	-	-	
27_WC	120	-	-	
28_WC	120	-	-	
28_Circulation	120	-	-	
28_Circulation	120	-	-	
28_Stair	120	-	-	
28_Circulation	120	-	-	
28_Circulation	120	-	-	
28_Circulation	120	-	-	
14_Stair	120	-	-	
14_Circulation	120	-	-	
14_WC	120	-	-	
14_Circulation	120	-	-	
14_Circulation	120	-	-	

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
14_Circulation		120	-	-
15_WC		120	-	-
15_Stair		120	-	-
15_Circulation		120	-	-
15_Circulation		120	-	-
15_Circulation		120	-	-
15_Circulation		120	-	-
16_Stair		120	-	-
16_Circulation		120	-	-
16_Circulation		120	-	-
16_Circulation		120	-	-
16_Circulation		120	-	-
16_Circulation		120	-	-
16_Circulation		120	-	-
16_Circulation		120	-	-
16_Circulation		120	-	-
16_Circulation		120	-	-
16_Circulation		120	-	-
16_Circulation		120	-	-
16_Circulation		120	-	-
16_WC		120	-	-
16_Circulation		120	-	-
16_Circulation		120	-	-
16_Circulation		120	-	-
17_WC		120	-	-
17_Stair		120	-	-
17_Circulation		120	-	-
17_Circulation		120	-	-
17_Circulation		120	-	-
17_Circulation		120	-	-
18_Circulation		120	-	-
18_Stair		120	-	-
18_Circulation		120	-	-
18_Circulation		120	-	-
18_Circulation		120	-	-
18_WC		120	-	-
19_Circulation		120	-	-
19_Circulation		120	-	-
19_Stair		120	-	-
19_Circulation		120	-	-
19_Circulation		120	-	-
19_WC		120	-	-
20_Circulation		120	-	-
20_WC		120	-	-
20_Circulation		120	-	-

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
20_Circulation		120	-	-
20_Circulation		120	-	-
21_Stair		120	-	-
21_Circulation		120	-	-
21_Circulation		120	-	-
21_Circulation		120	-	-
21_Circulation		120	-	-
21_WC		120	-	-
22_Circulation		120	-	-
22_Stair		120	-	-
22_Circulation		120	-	-
22_WC		120	-	-
22_Circulation		120	-	-
22_Circulation		120	-	-
22_Circulation		120	-	-
23_Stair		120	-	-
23_WC		120	-	-
23_Circulation		120	-	-
23_Circulation		120	-	-
23_Circulation		120	-	-
23_Circulation		120	-	-
23_Circulation		120	-	-
24_Circulation		120	-	-
24_Stair		120	-	-
24_Circulation		120	-	-
24_Circulation		120	-	-
24_Circulation		120	-	-
24_WC		120	-	-
24_Circulation		120	-	-
25_WC		120	-	-
25_Stair		120	-	-
25_Circulation		120	-	-
25_Circulation		120	-	-
25_Circulation		120	-	-
25_Circulation		120	-	-
25_Circulation		120	-	-
25_Circulation		120	-	-
21_Plant		120	-	-
22_Circulation		120	-	-
22_Plant		120	-	-
20_Circulation		120	-	-
20_Plant		120	-	-
19_Circulation		120	-	-
18_Circulation		120	-	-
17_Circulation		120	-	-

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
16_Circulation		120	-	-
15_Circulation		120	-	-
14_Circulation		120	-	-
12_Stair		120	-	-
12_Circulation		120	-	-
12_Circulation		120	-	-
12_Circulation		120	-	-
12_Circulation		120	-	-
12_Cleaners		120	-	-
12_WC		120	-	-
12_WC		120	-	-
12_WC		120	-	-
12_Circulation		120	-	-
12_Server Room		120	-	-
12_Circulation		120	-	-
12_Circulation		120	-	-
10_Stair		120	-	-
10_Circulation		120	-	-
10_Circulation		120	-	-
10_WC		120	-	-
10_Circulation		120	-	-
10_Circulation		120	-	-
10_WC		120	-	-
10_Circulation		120	-	-
09_Stair		120	-	-
09_Circulation		120	-	-
09_Circulation		120	-	-
09_WC		120	-	-
09_Circulation		120	-	-
09_Circulation		120	-	-
09_WC		120	-	-
09_Circulation		120	-	-
09_WC		120	-	-
10_WC		120	-	-
06_Stair		120	-	-
06_Circulation		120	-	-
06_Circulation		120	-	-
06_WC		120	-	-
06_Circulation		120	-	-
06_Circulation		120	-	-
06_WC		120	-	-
06_Circulation		120	-	-
06_WC		120	-	-

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
08_Stair		120	-	-
08_Circulation		120	-	-
08_Circulation		120	-	-
08_WC		120	-	-
08_Circulation		120	-	-
08_Circulation		120	-	-
08_WC		120	-	-
08_Circulation		120	-	-
08_WC		120	-	-
07_Stair		120	-	-
07_Circulation		120	-	-
07_Circulation		120	-	-
07_WC		120	-	-
07_Circulation		120	-	-
07_Circulation		120	-	-
07_WC		120	-	-
07_Circulation		120	-	-
07_WC		120	-	-
04_Stair		120	-	-
04_Circulation		120	-	-
04_Circulation		120	-	-
04_WC		120	-	-
04_Circulation		120	-	-
04_Circulation		120	-	-
04_WC		120	-	-
08_Server Room		120	-	-
11_Stair		120	-	-
11_Circulation		120	-	-
11_Circulation		120	-	-
11_Circulation		120	-	-
11_Circulation		120	-	-
11_Cleaners		120	-	-
11_WC		120	-	-
11_WC		120	-	-
11_WC		120	-	-
11_Circulation		120	-	-
11_Circulation		120	-	-
11_Server Room		120	-	-
11_Circulation		120	-	-
11_Circulation		120	-	-
13_Stair		120	-	-
13_Circulation		120	-	-
13_WC		120	-	-

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
13_Circulation		120	-	-
13_Circulation		120	-	-
13_Circulation		120	-	-
13_Circulation		120	-	-
12_Server Room		120	-	-
17_Server Room		120	-	-
20_Circulation		120	-	-
23_Server		120	-	-
21_Circulation		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_Office-Internal		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_Office-Internal		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-

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
04_Office-Internal		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_Office-Internal		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_Office-Internal		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_Office-Internal		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_Perimeter-Office		120	-	-
04_AHU-Plantroom		120	-	-

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
04_Office-Internal		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-

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
04_Perimeter-Office		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-

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
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Office-Internal		120	-	-

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
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-

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
04_Office_Inner		120	-	-
05_Stair		120	-	-
05_Circulation		120	-	-
05_Circulation		120	-	-
05_WC		120	-	-
05_Circulation		120	-	-
05_Circulation		120	-	-
05_WC		120	-	-
05_Plantroom		120	-	-
05_Plantroom		120	-	-
05_WC		120	-	-
05_WC		120	-	-
05_Plantroom		120	-	-
05_Plantroom		120	-	-
05_Circulation		120	-	-
05_Circulation		120	-	-
05_Circulation		120	-	-
05_Circulation		120	-	-
05_Office-Perimeter		120	-	-
05_Office-Perimeter		120	-	-
05_Office-Perimeter		120	-	-
05_Office-Perimeter		120	-	-
05_Office_Inner		120	-	-
05_Office_Inner		120	-	-
05_Office_Inner		120	-	-
05_Office_Inner		120	-	-
30_Circulation		120	-	-
30_Circulation		120	-	-
30_Circulation		120	-	-
30_WC		120	-	-
30_Circulation		120	-	-
30_Stair		120	-	-
30_Office-Internal		120	-	-
30_Office-Internal		120	-	-
30_Office-Internal		120	-	-
30_Plantroom		120	-	-
30_Office-Internal		120	-	-
30_Circulation		120	-	-
30_Office-Internal		120	-	-
30_Plantroom		120	-	-
30_Office-Internal		120	-	-
30_AHU-Plantroom		120	-	-

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
30_Office-Internal		120	-	-
30_Office-Internal		120	-	-
30_AHU-Plantroom		120	-	-
30_AHU-Plantroom		120	-	-
30_Perimeter-Office		120	-	-
30_Perimeter-Office		120	-	-
30_AHU-Plantroom		120	-	-
30_Perimeter-Office		120	-	-
30_Perimeter-Office		120	-	-
28_WC		120	-	-
28_Circulation		120	-	-
28_Circulation		120	-	-
28_Stair		120	-	-
28_Circulation		120	-	-
28_Circulation		120	-	-
28_Circulation		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_Perimeter-Office		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_AHU-Plantroom		120	-	-
04_Office-Internal		120	-	-
04_Office-Internal		120	-	-
04_Perimeter-Office		120	-	-
04_Office-Internal		120	-	-
04_Office-Internal		120	-	-
04_Office-Internal		120	-	-
04_Office-Internal		120	-	-
04_Office-Internal		120	-	-
04_Office-Internal		120	-	-
31_Stair		120	-	-
31_Circulation		120	-	-
31_Lift-Machine-Room		120	-	-
31_Lift-Machine-Room		120	-	-
31_MEP-Plantroom		120	-	-
31_Circulation		120	-	-
31_Circulation		120	-	-
31_Lift-Machine-Room		120	-	-
00_Public		120	-	-
00_BOH		120	-	-
00_BOH		120	-	-

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
00_BOH		120	-	-
00_AHU		120	-	-
B1_Showers		120	-	-
00_Kitchen		120	-	-
00_Circulation		120	-	-
00_Plant		120	-	-
00_WC		120	-	-
00_Circulation		120	-	-
00_Open-Lobby		120	-	-
00_WC		120	-	-
00_Stairs		120	-	-
00_Meeting-Office		120	-	-
00_Circulation		120	-	-
00_WC		120	-	-
00_Plantroom		120	-	-
00_BOH		120	-	-
00_Class-E		120	-	-
00_BOH		120	-	-
00_Meeting-Office		120	-	-
00_Store		120	-	-
00_Public		120	-	-
00_Open-Lobby		120	-	-
00_Store		120	-	-
00_Stairs		120	-	-
00_UKPN		120	-	-
00_BOH		120	-	-
00_Stairs		120	-	-
00_Meeting-Office		120	-	-
00_Meeting-Office		120	-	-
00_Circulation		120	-	-
00_Circulation		120	-	-
00_WC		120	-	-
00_Circulation		120	-	-
00_AHU-Plantroom		120	-	-
00_AHU-Plantroom		120	-	-
00_Circulation		120	-	-
00_Circulation		120	-	-
00_AHU-Plantroom		120	-	-
B1_Circulation		120	-	-
00_Meeting-Office		120	-	-
00_Meeting-Office		120	-	-
00_Meeting-Office		120	-	-
00_Stairs		120	-	-

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
00_Meeting-Office		120	-	-
00_Class-E		120	-	-
00_Meeting-Office		120	-	-
00_Circulation		120	-	-
00_Circulation		120	-	-
00_Circulation		120	-	-
00_WC		120	-	-
00_Circulation		120	-	-
00_Circulation		120	-	-
00_Circulation		120	-	-
00_Class-E		120	-	-
00_Circulation		120	-	-
00_Plantroom		120	-	-
00_WC		120	-	-
00_Circulation		120	-	-
00_AHU-Plantroom		120	-	-
00_Circulation		120	-	-
00_AHU-Plantroom		120	-	-
00_Plantroom		120	-	-
00_Circulation		120	-	-
00_AHU-Plantroom		120	-	-
00_Class-E		120	-	-
00_Circulation		120	-	-
00_AHU-Plantroom		120	-	-
00_Circulation		120	-	-
00_WC		120	-	-
00_AHU-Plantroom		120	-	-
00_AHU-Plantroom		120	-	-
00_AHU-Plantroom		120	-	-
00_Cleaners		120	-	-
00_Class-E		120	-	-
00_AHU-Plantroom		120	-	-
00_Circulation		120	-	-
00_Circulation		120	-	-
00_Stairs		120	-	-
00_Circulation		120	-	-
00_Circulation		120	-	-
00_WC		120	-	-
00_Class-E		120	-	-
B1_Plantroom		120	-	-
00_WC		120	-	-
B1_Plantroom		120	-	-
B1_Stairs		120	-	-

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
B1_Plantroom		120	-	-
B1_Plantroom		120	-	-
B1_Circulation		120	-	-
B1_Plantroom		120	-	-
B1_Plantroom		120	-	-
B1_Plantroom		120	-	-
B1_Plantroom		120	-	-
B1_Plantroom		120	-	-
B1_Circulation		120	-	-
B1_Locker-Room		120	-	-
B1_Showers		120	-	-
B1_Circulation		120	-	-
B1_Storage		120	-	-
B1_WC		120	-	-
B1_Lobby		120	-	-
B1_Circulation		120	-	-
B1_Circulation		120	-	-
B1_Cleaners		120	-	-
B1_Storage		120	-	-
B1_Showers		120	-	-
B1_Cleaners		120	-	-
B1_Plantroom		120	-	-
B1_WC		120	-	-
B1_Plantroom		120	-	-
B1_Stairs		120	-	-
B1_Plantroom		120	-	-
B1_Circulation		120	-	-
B1_Plantroom		120	-	-
B1_Plantroom		120	-	-
B1_Dockmaster		120	-	-
B2_Refuse-Store		120	-	-
B1_Circulation		120	-	-
B1_Circulation		120	-	-
B1_Circulation		120	-	-
B1_Circulation		120	-	-
B1_Circulation		120	-	-
B1_Plantroom		120	-	-
B1_Plantroom		120	-	-
B1_Circulation		120	-	-
B1_Plantroom		120	-	-
B2_Plantroom		120	-	-
B1_Plantroom		120	-	-
B2_Water-Tank		120	-	-

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
B1_Bike-Store		120	-	-
B1_Circulation		120	-	-
B1_Showers		120	-	-
00_Circulation		120	-	-
B1_Showers		120	-	-
B1_Circulation		120	-	-
B1_Showers		120	-	-
B1_Circulation		120	-	-
B1_Showers		120	-	-
B1_Circulation		120	-	-
B1_Showers		120	-	-
B1_Showers		120	-	-
00_Circulation		120	-	-
00_Circulation		120	-	-
00_Open-Lobby		120	-	-
00_Open-Lobby		120	-	-
00_Circulation		120	-	-
00_Circulation		120	-	-

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?
26_Circulation	NO (-100%)	NO
26_Circulation	NO (-100%)	NO
26_Stair	N/A	N/A
26_Circulation	N/A	N/A
26_Circulation	N/A	N/A
26_Circulation	N/A	N/A
26_Server	N/A	N/A
27_Stair	N/A	N/A
27_Circulation	N/A	N/A
27_Circulation	N/A	N/A
27_Circulation	NO (-100%)	NO
27_Circulation	N/A	N/A
27_Circulation	N/A	N/A
28_Circulation	N/A	N/A
28_Circulation	N/A	N/A
28_Stair	N/A	N/A
28_Circulation	N/A	N/A
28_Circulation	N/A	N/A
28_Circulation	N/A	N/A
14_Stair	N/A	N/A
14_Circulation	NO (-100%)	NO
14_Circulation	N/A	N/A

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
14_Circulation	NO (-100%)	NO
14_Circulation	N/A	N/A
15_Stair	N/A	N/A
15_Circulation	N/A	N/A
15_Circulation	N/A	N/A
15_Circulation	NO (-100%)	NO
15_Circulation	N/A	N/A
16_Stair	N/A	N/A
16_Circulation	N/A	N/A
16_Circulation	N/A	N/A
16_Circulation	N/A	N/A
16_Circulation	N/A	N/A
16_Circulation	N/A	N/A
16_Circulation	N/A	N/A
16_Circulation	N/A	N/A
16_Circulation	N/A	N/A
16_Circulation	N/A	N/A
16_Circulation	N/A	N/A
16_Circulation	N/A	N/A
16_Circulation	N/A	N/A
16_Circulation	NO (-100%)	NO
16_Circulation	N/A	N/A
16_Circulation	NO (-100%)	NO
17_Stair	N/A	N/A
17_Circulation	N/A	N/A
17_Circulation	NO (-100%)	NO
17_Circulation	N/A	N/A
17_Circulation	N/A	N/A
18_Circulation	N/A	N/A
18_Stair	N/A	N/A
18_Circulation	N/A	N/A
18_Circulation	N/A	N/A
18_Circulation	NO (-100%)	NO
19_Circulation	NO (-100%)	NO
19_Circulation	N/A	N/A
19_Stair	N/A	N/A
19_Circulation	N/A	N/A
19_Circulation	NO (-100%)	NO
20_Circulation	NO (-79.7%)	YES
20_Circulation	NO (-79.1%)	YES
20_Circulation	N/A	N/A
20_Circulation	N/A	N/A
21_Stair	N/A	N/A
21_Circulation	N/A	N/A
21_Circulation	N/A	N/A
21_Circulation	N/A	N/A
21_Circulation	NO (-100%)	NO
21_WC	N/A	N/A
22_Circulation	N/A	N/A
22_Stair	N/A	N/A
22_Circulation	N/A	N/A

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
22_Circulation	N/A	N/A
22_Circulation	NO (-100%)	NO
23_Stair	N/A	N/A
23_Circulation	N/A	N/A
23_Circulation	N/A	N/A
23_Circulation	N/A	N/A
23_Circulation	NO (-100%)	NO
23_Circulation	N/A	N/A
24_Circulation	N/A	N/A
24_Stair	N/A	N/A
24_Circulation	N/A	N/A
24_Circulation	N/A	N/A
24_Circulation	NO (-100%)	NO
24_Circulation	N/A	N/A
25_Stair	N/A	N/A
25_Circulation	N/A	N/A
25_Circulation	NO (-100%)	NO
25_Circulation	N/A	N/A
25_Circulation	N/A	N/A
25_Circulation	N/A	N/A
25_Circulation	N/A	N/A
21_Plant	N/A	N/A
22_Circulation	N/A	N/A
22_Plant	N/A	N/A
20_Circulation	N/A	N/A
20_Plant	N/A	N/A
19_Circulation	N/A	N/A
18_Circulation	N/A	N/A
17_Circulation	N/A	N/A
16_Circulation	N/A	N/A
15_Circulation	N/A	N/A
14_Circulation	N/A	N/A
12_Stair	N/A	N/A
12_Circulation	N/A	N/A
12_Circulation	N/A	N/A
12_Circulation	N/A	N/A
12_Circulation	N/A	N/A
12_Cleaners	N/A	N/A
12_Circulation	NO (-99.8%)	NO
12_Server Room	N/A	N/A
12_Circulation	N/A	N/A
12_Circulation	NO (-100%)	NO
10_Stair	N/A	N/A
10_Circulation	N/A	N/A
10_Circulation	N/A	N/A
10_Circulation	N/A	N/A
10_Circulation	N/A	N/A
10_Circulation	N/A	N/A
09_Stair	N/A	N/A
09_Circulation	N/A	N/A

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
09_Circulation	N/A	N/A
09_Circulation	N/A	N/A
09_Circulation	N/A	N/A
09_Circulation	N/A	N/A
06_Stair	N/A	N/A
06_Circulation	N/A	N/A
06_Circulation	N/A	N/A
06_Circulation	N/A	N/A
06_Circulation	N/A	N/A
06_Circulation	N/A	N/A
08_Stair	N/A	N/A
08_Circulation	N/A	N/A
08_Circulation	N/A	N/A
08_Circulation	N/A	N/A
08_Circulation	N/A	N/A
08_Circulation	N/A	N/A
07_Stair	N/A	N/A
07_Circulation	N/A	N/A
07_Circulation	N/A	N/A
07_Circulation	N/A	N/A
07_Circulation	N/A	N/A
07_Circulation	N/A	N/A
04_Stair	N/A	N/A
04_Circulation	N/A	N/A
04_Circulation	N/A	N/A
04_Circulation	N/A	N/A
04_Circulation	N/A	N/A
08_Server Room	N/A	N/A
11_Stair	N/A	N/A
11_Circulation	N/A	N/A
11_Circulation	N/A	N/A
11_Circulation	N/A	N/A
11_Circulation	N/A	N/A
11_Cleaners	N/A	N/A
11_WC	N/A	N/A
11_WC	N/A	N/A
11_WC	N/A	N/A
11_Circulation	NO (-99.7%)	NO
11_Circulation	N/A	N/A
11_Server Room	N/A	N/A
11_Circulation	N/A	N/A
11_Circulation	N/A	N/A
13_Stair	N/A	N/A
13_Circulation	NO (-100%)	NO
13_Circulation	N/A	N/A
13_Circulation	N/A	N/A
13_Circulation	N/A	N/A
13_Circulation	N/A	N/A
12_Server Room	N/A	N/A

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
17_Server Room	N/A	N/A
20_Circulation	N/A	N/A
23_Server	N/A	N/A
21_Circulation	N/A	N/A
04_Perimeter-Office	NO (-16.3%)	YES
04_Perimeter-Office	NO (-35.9%)	YES
04_Perimeter-Office	NO (-11.9%)	YES
04_Perimeter-Office	NO (-25.2%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Office-Internal	NO (-99%)	NO
04_Office-Internal	NO (-99.2%)	NO
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-14.4%)	YES
04_Perimeter-Office	NO (-33.3%)	YES
04_Perimeter-Office	NO (-11.9%)	YES
04_Perimeter-Office	NO (-24.6%)	YES
04_Office-Internal	NO (-99%)	NO
04_Office-Internal	NO (-99%)	NO
04_Office-Internal	NO (-99.1%)	NO
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-12.9%)	YES
04_Perimeter-Office	NO (-29.6%)	YES
04_Perimeter-Office	NO (-11.9%)	YES
04_Perimeter-Office	NO (-23.9%)	YES
04_Office-Internal	NO (-99%)	NO
04_Office-Internal	NO (-99%)	NO
04_Office-Internal	NO (-99%)	NO
04_Office-Internal	NO (-99%)	NO
04_Perimeter-Office	NO (-11.5%)	YES
04_Perimeter-Office	NO (-25.5%)	YES
04_Perimeter-Office	NO (-11.9%)	YES
04_Perimeter-Office	NO (-22.9%)	YES
04_Office-Internal	NO (-99%)	NO
04_Office-Internal	NO (-99%)	NO
04_Office-Internal	NO (-99%)	NO
04_Office-Internal	NO (-99%)	NO
04_Perimeter-Office	NO (-10.9%)	YES
04_Perimeter-Office	NO (-21.1%)	YES
04_Perimeter-Office	NO (-11.8%)	YES
04_Perimeter-Office	NO (-21.9%)	YES
04_Office-Internal	NO (-99%)	NO
04_Office-Internal	NO (-99%)	NO
04_Office-Internal	NO (-98.9%)	NO
04_Office-Internal	NO (-99%)	NO
04_Perimeter-Office	NO (-19.4%)	YES
04_Perimeter-Office	NO (-10%)	YES
04_Perimeter-Office	NO (-21.9%)	YES
04_Office-Internal	NO (-98.9%)	NO
04_Office-Internal	NO (-98.8%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
04_Office-Internal	NO (-99%)	NO
04_Perimeter-Office	NO (-26.8%)	YES
04_Perimeter-Office	NO (-19%)	YES
04_Perimeter-Office	NO (-29.2%)	YES
04_Perimeter-Office	NO (-53.5%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Office-Internal	NO (-99.1%)	NO
04_Office-Internal	NO (-99%)	NO
04_Perimeter-Office	NO (-10.4%)	YES
04_Perimeter-Office	NO (-28.5%)	YES
04_Perimeter-Office	NO (-20.8%)	YES
04_Perimeter-Office	NO (-29.2%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Office-Internal	NO (-99.2%)	NO
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-19.9%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-28.5%)	YES
04_Perimeter-Office	NO (-20.7%)	YES
04_Perimeter-Office	NO (-29.2%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Office-Internal	NO (-99.2%)	NO
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-19.9%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-28.5%)	YES
04_Perimeter-Office	NO (-20.8%)	YES
04_Perimeter-Office	NO (-29.2%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Office-Internal	NO (-99.2%)	NO
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-19.8%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-28.5%)	YES
04_Perimeter-Office	NO (-20.8%)	YES
04_Perimeter-Office	NO (-29.2%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Office-Internal	NO (-99.2%)	NO
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-19.8%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-28.5%)	YES
04_Perimeter-Office	NO (-20.8%)	YES
04_Perimeter-Office	NO (-29.2%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Office-Internal	NO (-99.2%)	NO
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-19.8%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-28.5%)	YES
04_Perimeter-Office	NO (-20.8%)	YES
04_Perimeter-Office	NO (-29.2%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Office-Internal	NO (-99.2%)	NO
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-19.8%)	YES
04_Office-Internal	NO (-99.1%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
04_Perimeter-Office	NO (-28.5%)	YES
04_Perimeter-Office	NO (-20.8%)	YES
04_Perimeter-Office	NO (-29.2%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Office-Internal	NO (-99.2%)	NO
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-19.8%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-28.5%)	YES
04_Perimeter-Office	NO (-20.8%)	YES
04_Perimeter-Office	NO (-29.2%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Office-Internal	NO (-99.2%)	NO
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-19.7%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-28.5%)	YES
04_Perimeter-Office	NO (-27.5%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-17.9%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-28.5%)	YES
04_Perimeter-Office	NO (-27.6%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-18%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-28.5%)	YES
04_Perimeter-Office	NO (-20.7%)	YES
04_Perimeter-Office	NO (-29.2%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-19.8%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-27.5%)	YES
04_Perimeter-Office	NO (-19.5%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Office-Internal	NO (-99%)	NO
04_Perimeter-Office	NO (-19.8%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-27.6%)	YES
04_Perimeter-Office	NO (-19.5%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Office-Internal	NO (-99%)	NO
04_Perimeter-Office	NO (-19.9%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-28.5%)	YES
04_Perimeter-Office	NO (-20.8%)	YES
04_Perimeter-Office	NO (-29.2%)	YES

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
04_Office-Internal	NO (-99.1%)	NO
04_Office-Internal	NO (-99.2%)	NO
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-19.8%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-20.8%)	YES
04_Perimeter-Office	NO (-28.3%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-18.5%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-20.7%)	YES
04_Perimeter-Office	NO (-28.4%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-18.6%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-28.5%)	YES
04_Perimeter-Office	NO (-20.7%)	YES
04_Perimeter-Office	NO (-29.2%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Office-Internal	NO (-99.2%)	NO
04_Office-Internal	NO (-99.1%)	NO
04_Perimeter-Office	NO (-19.8%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Office-Internal	NO (-18.9%)	YES
04_Office-Internal	NO (-54.2%)	YES
04_Office-Internal	NO (-25.4%)	YES
04_Office-Internal	NO (-38.6%)	YES
04_Office-Internal	NO (-25.2%)	YES
04_Office-Internal	NO (-36.9%)	YES
04_Office-Internal	NO (-99.6%)	NO
04_Office-Internal	NO (-99.5%)	NO
04_Office-Internal	NO (-99.5%)	NO
04_Office-Internal	NO (-99.3%)	NO
04_Office-Internal	NO (-99.5%)	NO
04_Office-Internal	NO (-99.5%)	NO
04_Office-Internal	NO (-99.3%)	NO
04_Office-Internal	NO (-99.4%)	NO
04_Office-Internal	NO (-99.5%)	NO
04_Office-Internal	NO (-99.3%)	NO
04_Office-Internal	NO (-99.4%)	NO
04_Office-Internal	NO (-99.4%)	NO
04_Office-Internal	NO (-99.4%)	NO
04_Office-Internal	NO (-99.5%)	NO
04_Office-Internal	NO (-99.3%)	NO
04_Office-Internal	NO (-99.3%)	NO
04_Office-Internal	NO (-99.4%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
04_Office-Internal	NO (-99%)	NO
04_Office-Internal	NO (-99.6%)	NO
04_Office-Internal	NO (-99.1%)	NO
04_Office-Internal	NO (-99.5%)	NO
04_Office-Internal	NO (-99.5%)	NO
04_Office-Internal	NO (-98.8%)	NO
04_Office-Internal	NO (-99.6%)	NO
04_Office-Internal	NO (-99.5%)	NO
04_Office-Internal	NO (-99.2%)	NO
04_Office-Internal	NO (-99.6%)	NO
04_Office-Internal	NO (-99.6%)	NO
04_Office-Internal	NO (-99.5%)	NO
04_Office-Internal	NO (-99.7%)	NO
04_Office-Internal	NO (-99.7%)	NO
04_Office-Internal	NO (-99.6%)	NO
04_Office-Internal	NO (-98.5%)	NO
04_Office-Internal	NO (-99.6%)	NO
04_Office-Internal	NO (-99.7%)	NO
04_Office-Internal	NO (-99.5%)	NO
04_Office-Internal	NO (-98.9%)	NO
04_Office-Internal	NO (-99.7%)	NO
04_Office-Internal	NO (-99.7%)	NO
04_Office-Internal	NO (-99.5%)	NO
04_Office-Internal	NO (-99.5%)	NO
04_Office-Internal	NO (-99.7%)	NO
04_Office-Internal	NO (-99.7%)	NO
04_Office-Internal	NO (-99.6%)	NO
04_Circulation	N/A	N/A
04_Circulation	NO (-99.9%)	NO
04_Circulation	NO (-99.9%)	NO
04_Circulation	NO (-99.7%)	NO
04_Circulation	NO (-99.8%)	NO
04_Office-Perimeter	NO (-27.4%)	YES
04_Office-Perimeter	NO (-2.6%)	YES
04_Office-Perimeter	YES (+8.8%)	YES
04_Office-Perimeter	YES (+18.5%)	YES
04_Office_Inner	NO (-99%)	NO
04_Office_Inner	NO (-98.7%)	NO
04_Office_Inner	NO (-98.8%)	NO
04_Office_Inner	NO (-98.7%)	NO
05_Stair	N/A	N/A
05_Circulation	N/A	N/A
05_Circulation	N/A	N/A
05_Circulation	N/A	N/A
05_Circulation	N/A	N/A
05_Circulation	N/A	N/A
05_Circulation	NO (-99.9%)	NO
05_Circulation	NO (-99.9%)	NO
05_Circulation	NO (-99.7%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
05_Circulation	NO (-99.8%)	NO
05_Office-Perimeter	NO (-24.3%)	YES
05_Office-Perimeter	NO (-2.1%)	YES
05_Office-Perimeter	YES (+5.3%)	YES
05_Office-Perimeter	YES (+18.9%)	YES
05_Office_Inner	NO (-99%)	NO
05_Office_Inner	NO (-98.7%)	NO
05_Office_Inner	NO (-98.8%)	NO
05_Office_Inner	NO (-98.7%)	NO
30_Circulation	N/A	N/A
30_Circulation	N/A	N/A
30_Circulation	N/A	N/A
30_Circulation	N/A	N/A
30_Stair	N/A	N/A
30_Office-Internal	NO (-98.8%)	NO
30_Office-Internal	NO (-98.2%)	NO
30_Office-Internal	NO (-99.1%)	NO
30_Plantroom	N/A	N/A
30_Office-Internal	NO (-99.3%)	NO
30_Circulation	N/A	N/A
30_Office-Internal	NO (-99.2%)	NO
30_Plantroom	NO (-100%)	NO
30_Office-Internal	NO (-98.2%)	NO
30_Office-Internal	NO (-98.2%)	NO
30_Office-Internal	NO (-98.3%)	NO
30_Perimeter-Office	NO (-13%)	YES
30_Perimeter-Office	NO (-14%)	YES
30_Perimeter-Office	NO (-22.9%)	YES
30_Perimeter-Office	NO (-23.6%)	YES
28_Circulation	N/A	N/A
28_Circulation	N/A	N/A
28_Stair	N/A	N/A
28_Circulation	N/A	N/A
28_Circulation	N/A	N/A
28_Circulation	N/A	N/A
04_Perimeter-Office	NO (-25.9%)	YES
04_Perimeter-Office	NO (-17.6%)	YES
04_Perimeter-Office	NO (-26.6%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Office-Internal	NO (-99.1%)	NO
04_Office-Internal	NO (-99%)	NO
04_Perimeter-Office	NO (-16.6%)	YES
04_Office-Internal	NO (-99.1%)	NO
04_Office-Internal	NO (-99.5%)	NO
04_Office-Internal	NO (-99.7%)	NO
04_Office-Internal	NO (-99.7%)	NO
04_Office-Internal	NO (-99.6%)	NO
31_Stair	N/A	N/A
31_Circulation	N/A	N/A

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
31_Circulation	N/A	N/A
00_Public	NO (-40.3%)	YES
00_BOH	N/A	N/A
00_BOH	N/A	N/A
00_BOH	N/A	N/A
B1_Showers	N/A	N/A
00_Kitchen	N/A	N/A
00_Circulation	N/A	N/A
00_Open-Lobby	NO (-0.5%)	YES
00_Meeting-Office	NO (-57.4%)	YES
00_BOH	N/A	N/A
00_Class-E	NO (-22.1%)	YES
00_BOH	N/A	N/A
00_Meeting-Office	NO (-55.1%)	YES
00_Store	N/A	N/A
00_Public	NO (-43.9%)	YES
00_Open-Lobby	YES (+7.3%)	YES
00_Store	N/A	N/A
00_UKPN	N/A	N/A
00_BOH	NO (-100%)	NO
00_Meeting-Office	NO (-57.4%)	YES
00_Meeting-Office	NO (-55%)	YES
00_Meeting-Office	NO (-38%)	YES
00_Meeting-Office	NO (-100%)	NO
00_Meeting-Office	N/A	N/A
00_Meeting-Office	NO (-5.8%)	YES
00_Class-E	NO (-42%)	YES
00_Meeting-Office	NO (-6.6%)	YES
00_Class-E	NO (-4.4%)	YES
00_Class-E	YES (+35.2%)	YES
00_Cleaners	N/A	N/A
00_Class-E	NO (-0.5%)	YES
00_Class-E	YES (+40.4%)	YES
B1_Locker-Room	N/A	N/A
B1_Showers	N/A	N/A
B1_Storage	N/A	N/A
B1_Cleaners	N/A	N/A
B1_Storage	N/A	N/A
B1_Showers	N/A	N/A
B1_Cleaners	N/A	N/A
B1_Dockmaster	N/A	N/A
B2_Refuse-Store	N/A	N/A
B1_Bike-Store	N/A	N/A
B1_Showers	N/A	N/A
B1_Showers	NO (-100%)	NO
B1_Showers	N/A	N/A
B1_Showers	N/A	N/A
B1_Showers	N/A	N/A
B1_Showers	N/A	N/A

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
00_Circulation	N/A	N/A
00_Open-Lobby	NO (-14.3%)	YES
00_Open-Lobby	YES (+19.1%)	YES
00_Circulation	NO (-12.5%)	YES

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]	73247.3	73247.3
External area [m ²]	41944.5	41944.5
Weather	LON	LON
Infiltration [m ³ /hm ² @ 50Pa]	3	3
Average conductance [W/K]	33366	17238.2
Average U-value [W/m ² K]	0.8	0.41
Alpha value* [%]	0.59	10

* 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
91	Offices and Workshop Businesses
	General Industrial and Special Industrial Groups
	Storage or Distribution
	Hotels
	Residential Institutions: Hospitals and Care Homes
	Residential Institutions: Residential Schools
9	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	2.52	0.25
Cooling	4.2	6.61
Auxiliary	8.45	8.19
Lighting	7.27	10.71
Hot water	4.26	3.22
Equipment*	46.61	46.61
TOTAL**	26.69	28.98

* 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
<i>Displaced electricity</i>	<i>0</i>	<i>0</i>

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	92.37	112.77
Primary energy [kWh _{PE} /m ²]	39.27	42.47
Total emissions [kg/m ²]	3.58	3.84

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] Constant volume system (variable fresh air rate), [HS] ASHP, [HFT] Electricity, [CFT] Electricity									
Actual	10.9	30	1.1	1.9	11.9	2.86	4.4	2.86	4.4
Notional	1	85.2	0.1	5.1	6.3	2.78	4.63	----	----
[ST] Chilled ceilings/passive chilled beams & disp. vent., [HS] ASHP, [HFT] Electricity, [CFT] Electricity									
Actual	22.7	63.9	2.2	4	9.1	2.86	4.4	2.86	4.4
Notional	2.2	66.9	0.2	4	8.4	2.78	4.63	----	----
[ST] Fan coil systems, [HS] ASHP, [HFT] Electricity, [CFT] Electricity									
Actual	41.8	96.1	4.1	6.1	13.7	2.86	4.4	2.86	4.4
Notional	6.9	134.2	0.7	8.1	9.9	2.78	4.63	----	----
[ST] Fan coil systems, [HS] ASHP, [HFT] Electricity, [CFT] Electricity									
Actual	32.3	96.8	3.1	6.1	13	2.86	4.4	2.86	4.4
Notional	3.3	154.6	0.3	9.3	9.9	2.78	4.63	----	----
[ST] Chilled ceilings/passive chilled beams & disp. vent., [HS] ASHP, [HFT] Electricity, [CFT] Electricity									
Actual	32.7	80.4	3.2	5.1	8.6	2.86	4.4	2.86	4.4
Notional	2.9	134.2	0.3	8	10	2.78	4.63	----	----
[ST] Fan coil systems, [HS] ASHP, [HFT] Electricity, [CFT] Electricity									
Actual	21.9	120.3	2.1	7.6	13.5	2.86	4.4	2.86	4.4
Notional	1.1	153.2	0.1	9.2	10.1	2.78	4.63	----	----
[ST] Chilled ceilings/passive chilled beams & disp. vent., [HS] ASHP, [HFT] Electricity, [CFT] Electricity									
Actual	32	14.8	3.1	0.9	7.7	2.86	4.4	2.86	4.4
Notional	1.2	43.9	0.1	2.6	6.8	2.78	4.63	----	----
[ST] Chilled ceilings/passive chilled beams & disp. vent., [HS] ASHP, [HFT] Electricity, [CFT] Electricity									
Actual	51	95	5	6	8.7	2.86	4.4	2.86	4.4
Notional	7.7	153.4	0.8	9.2	10.3	2.78	4.63	----	----
[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