

Project name

Hoxton Holborn GreenPV30

As designed

Date: Thu Mar 30 17:30:34 2017

Administrative information

Building Details

Address: 199-206 High Holborn, LONDON, WC1V 7BD

Owner Details

Name: The Hoxton (Holborn) Limited

Telephone number:

Address: , London, WC1V 7BD

Certification tool

Calculation engine: Apache

Calculation engine version: 7.0.6

Interface to calculation engine: IES Virtual Environment

Interface to calculation engine version: 7.0.6

BRUKL compliance check version: v5.2.g.3

Certifier details

Name: Hoare Lea

Telephone number:

Address: , Oxford,

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

CO ₂ emission rate from the notional building, kgCO ₂ /m ² .annum	72.4
Target CO ₂ emission rate (TER), kgCO ₂ /m ² .annum	72.4
Building CO ₂ emission rate (BER), kgCO ₂ /m ² .annum	51.6
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 the building services should achieve reasonable overall standards of energy efficiency

Values not achieving 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	0.15	0.15	CC000004:Surf[1]
Floor	0.25	0.18	0.18	BT00002C:Surf[0]
Roof	0.25	0.15	0.15	BT0000C8:Surf[0]
Windows***, roof windows, and rooflights	2.2	1.4	1.4	CC000004:Surf[0]
Personnel doors	2.2	1.6	1.6	BN000000:Surf[1]
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	3

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	NO
Whole building electric power factor achieved by power factor correction	>0.95

1- New VRF ASHP

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	5.17	3.85	0	0	0.8
Standard value	2.5*	3.2	N/A	N/A	0.5
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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

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

1- CHECK2-CHP

	CHPQA quality index	CHP electrical efficiency
This building	105	0.29
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	ID of system type	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		
05_Accesible Bathroom Bathroom-01	-	1	0.5	-	-	-	-	-	-	-	-	N/A
05_Accesible Guest Room-01	-	1	0.5	-	-	-	-	-	-	-	-	N/A
05_Bathroom-16	-	1	0.5	-	-	-	-	-	-	-	-	N/A
05_Bathroom-17	-	1	0.5	-	-	-	-	-	-	-	-	N/A
05_Bathroom-18	-	1	0.5	-	-	-	-	-	-	-	-	N/A
05_Bathroom-19	-	1	0.5	-	-	-	-	-	-	-	-	N/A
05_Bathroom-20	-	1	0.5	-	-	-	-	-	-	-	-	N/A
05_Bathroom-20	-	1	0.5	-	-	-	-	-	-	-	-	N/A
05_Bathroom-21	-	1	0.5	-	-	-	-	-	-	-	-	N/A
05_Bathroom-22	-	1	0.5	-	-	-	-	-	-	-	-	N/A
05_Bathroom-23	-	1	0.5	-	-	-	-	-	-	-	-	N/A
05_Bathroom-24	-	1	0.5	-	-	-	-	-	-	-	-	N/A
05_Bathroom-25	-	1	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	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
01_Bathroom-38	-	1	0.5	-	-	-	-	-	-	-	-	N/A
04_Bathroom-38	-	1	0.5	-	-	-	-	-	-	-	-	N/A
05_Bathroom-38	-	1	0.5	-	-	-	-	-	-	-	-	N/A
01_Bathroom-39	-	1	0.5	-	-	-	-	-	-	-	-	N/A
05_Bathroom-39	-	1	0.5	-	-	-	-	-	-	-	-	N/A
04_Bathroom-39	-	1	0.5	-	-	-	-	-	-	-	-	N/A
01_Bathroom-40	-	1	0.5	-	-	-	-	-	-	-	-	N/A
05_Bathroom-40	-	1	0.5	-	-	-	-	-	-	-	-	N/A
04_Bathroom-40	-	1	0.5	-	-	-	-	-	-	-	-	N/A
05_Bathroom-41	-	1	0.5	-	-	-	-	-	-	-	-	N/A
01_Bathroom-41	-	1	0.5	-	-	-	-	-	-	-	-	N/A
04_Bathroom-41	-	1	0.5	-	-	-	-	-	-	-	-	N/A
01_Bathroom-42	-	1	0.5	-	-	-	-	-	-	-	-	N/A
05_Bathroom-42	-	1	0.5	-	-	-	-	-	-	-	-	N/A
04_Bathroom-42	-	1	0.5	-	-	-	-	-	-	-	-	N/A
01_Bathroom-43	-	1	0.5	-	-	-	-	-	-	-	-	N/A
01_Bathroom-44	-	1	0.5	-	-	-	-	-	-	-	-	N/A
05_Bathroom-44	-	1	0.5	-	-	-	-	-	-	-	-	N/A
04_Bathroom-44	-	1	0.5	-	-	-	-	-	-	-	-	N/A
01_Bathroom-45	-	1	0.5	-	-	-	-	-	-	-	-	N/A
05_Bathroom-45	-	1	0.5	-	-	-	-	-	-	-	-	N/A
04_Bathroom-45	-	1	0.5	-	-	-	-	-	-	-	-	N/A
05_Guest Room-01	-	1	0.5	-	-	-	-	-	-	-	-	N/A
04_Guest Room-01	-	1	0.5	-	-	-	-	-	-	-	-	N/A
01_Guest Room-01	-	1	0.5	-	-	-	-	-	-	-	-	N/A
01_Guest Room-02	-	1	0.5	-	-	-	-	-	-	-	-	N/A
04_Guest Room-02	-	1	0.5	-	-	-	-	-	-	-	-	N/A
05_Guest Room-02	-	1	0.5	-	-	-	-	-	-	-	-	N/A
05_Guest Room-03	-	1	0.5	-	-	-	-	-	-	-	-	N/A
01_Guest Room-03	-	1	0.5	-	-	-	-	-	-	-	-	N/A
04_Guest Room-03	-	1	0.5	-	-	-	-	-	-	-	-	N/A
01_Guest Room-04	-	1	0.5	-	-	-	-	-	-	-	-	N/A
04_Guest Room-04	-	1	0.5	-	-	-	-	-	-	-	-	N/A
05_Guest Room-04	-	1	0.5	-	-	-	-	-	-	-	-	N/A
01_Guest Room-06	-	1	0.5	-	-	-	-	-	-	-	-	N/A
04_Guest Room-07	-	1	0.5	-	-	-	-	-	-	-	-	N/A
01_Guest Room-07	-	1	0.5	-	-	-	-	-	-	-	-	N/A
01_Guest Room-08	-	1	0.5	-	-	-	-	-	-	-	-	N/A
05_Guest Room-08	-	1	0.5	-	-	-	-	-	-	-	-	N/A
04_Guest Room-08	-	1	0.5	-	-	-	-	-	-	-	-	N/A
05_Guest Room-09	-	1	0.5	-	-	-	-	-	-	-	-	N/A
05_Guest Room-10	-	1	0.5	-	-	-	-	-	-	-	-	N/A
05_Guest Room-11	-	1	0.5	-	-	-	-	-	-	-	-	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
05_Guest Room-12	-	1	0.5	-	-	-	-	-	-	-	N/A
05_Guest Room-13	-	1	0.5	-	-	-	-	-	-	-	N/A
05_Guest Room-14	-	1	0.5	-	-	-	-	-	-	-	N/A
05_Guest Room-15	-	1	0.5	-	-	-	-	-	-	-	N/A
05_Guest Room-17	-	1	0.5	-	-	-	-	-	-	-	N/A
05_Guest Room-18	-	1	0.5	-	-	-	-	-	-	-	N/A
05_Guest Room-19	-	1	0.5	-	-	-	-	-	-	-	N/A
04_Shower-1	-	1	0.5	-	-	-	-	-	-	-	N/A
05_Shower-1	-	1	0.5	-	-	-	-	-	-	-	N/A
01_Shower-1	-	1	0.5	-	-	-	-	-	-	-	N/A
01_Shower-2	-	1	0.5	-	-	-	-	-	-	-	N/A
05_Shower-2	-	1	0.5	-	-	-	-	-	-	-	N/A
04_Shower-2	-	1	0.5	-	-	-	-	-	-	-	N/A
05_Shower-3	-	1	0.5	-	-	-	-	-	-	-	N/A
01_Shower-3	-	1	0.5	-	-	-	-	-	-	-	N/A
04_Shower-3	-	1	0.5	-	-	-	-	-	-	-	N/A
01_Shower-4	-	1	0.5	-	-	-	-	-	-	-	N/A
05_Shower-4	-	1	0.5	-	-	-	-	-	-	-	N/A
04_Shower-4	-	1	0.5	-	-	-	-	-	-	-	N/A
05_Shower-5	-	1	0.5	-	-	-	-	-	-	-	N/A
01_Shower-5	-	1	0.5	-	-	-	-	-	-	-	N/A
04_Shower-5	-	1	0.5	-	-	-	-	-	-	-	N/A
01_Shower-6	-	1	0.5	-	-	-	-	-	-	-	N/A
01_Shower-7	-	1	0.5	-	-	-	-	-	-	-	N/A
04_Shower-7	-	1	0.5	-	-	-	-	-	-	-	N/A
05_Shower-7	-	1	0.5	-	-	-	-	-	-	-	N/A
01_Shower-8	-	1	0.5	-	-	-	-	-	-	-	N/A
05_Shower-8	-	1	0.5	-	-	-	-	-	-	-	N/A
04_Shower-8	-	1	0.5	-	-	-	-	-	-	-	N/A
05_Shower-9	-	1	0.5	-	-	-	-	-	-	-	N/A
05_Guest Room-07	-	1	0.5	-	-	-	-	-	-	-	N/A
05_Guest Room-16	-	1	0.5	-	-	-	-	-	-	-	N/A
02_Bathroom-38	-	1	0.5	-	-	-	-	-	-	-	N/A
02_Bathroom-39	-	1	0.5	-	-	-	-	-	-	-	N/A
02_Bathroom-40	-	1	0.5	-	-	-	-	-	-	-	N/A
02_Bathroom-41	-	1	0.5	-	-	-	-	-	-	-	N/A
02_Bathroom-42	-	1	0.5	-	-	-	-	-	-	-	N/A
02_Bathroom-43	-	1	0.5	-	-	-	-	-	-	-	N/A
02_Bathroom-44	-	1	0.5	-	-	-	-	-	-	-	N/A
02_Bathroom-45	-	1	0.5	-	-	-	-	-	-	-	N/A
02_Guest Room-01	-	1	0.5	-	-	-	-	-	-	-	N/A
02_Guest Room-02	-	1	0.5	-	-	-	-	-	-	-	N/A
02_Guest Room-03	-	1	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	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
02_Guest Room-04	-	1	0.5	-	-	-	-	-	-	-	-	N/A
02_Guest Room-06	-	1	0.5	-	-	-	-	-	-	-	-	N/A
02_Guest Room-07	-	1	0.5	-	-	-	-	-	-	-	-	N/A
02_Guest Room-08	-	1	0.5	-	-	-	-	-	-	-	-	N/A
02_Shower-1	-	1	0.5	-	-	-	-	-	-	-	-	N/A
02_Shower-2	-	1	0.5	-	-	-	-	-	-	-	-	N/A
02_Shower-3	-	1	0.5	-	-	-	-	-	-	-	-	N/A
02_Shower-4	-	1	0.5	-	-	-	-	-	-	-	-	N/A
02_Shower-5	-	1	0.5	-	-	-	-	-	-	-	-	N/A
02_Shower-6	-	1	0.5	-	-	-	-	-	-	-	-	N/A
02_Shower-7	-	1	0.5	-	-	-	-	-	-	-	-	N/A
02_Shower-8	-	1	0.5	-	-	-	-	-	-	-	-	N/A
03_Bathroom-38	-	1	0.5	-	-	-	-	-	-	-	-	N/A
03_Bathroom-39	-	1	0.5	-	-	-	-	-	-	-	-	N/A
03_Bathroom-40	-	1	0.5	-	-	-	-	-	-	-	-	N/A
03_Bathroom-41	-	1	0.5	-	-	-	-	-	-	-	-	N/A
03_Bathroom-42	-	1	0.5	-	-	-	-	-	-	-	-	N/A
03_Bathroom-43	-	1	0.5	-	-	-	-	-	-	-	-	N/A
03_Bathroom-44	-	1	0.5	-	-	-	-	-	-	-	-	N/A
03_Bathroom-45	-	1	0.5	-	-	-	-	-	-	-	-	N/A
03_Guest Room-01	-	1	0.5	-	-	-	-	-	-	-	-	N/A
03_Guest Room-02	-	1	0.5	-	-	-	-	-	-	-	-	N/A
03_Guest Room-03	-	1	0.5	-	-	-	-	-	-	-	-	N/A
03_Guest Room-04	-	1	0.5	-	-	-	-	-	-	-	-	N/A
03_Guest Room-06	-	1	0.5	-	-	-	-	-	-	-	-	N/A
03_Guest Room-07	-	1	0.5	-	-	-	-	-	-	-	-	N/A
03_Guest Room-08	-	1	0.5	-	-	-	-	-	-	-	-	N/A
03_Shower-1	-	1	0.5	-	-	-	-	-	-	-	-	N/A
03_Shower-2	-	1	0.5	-	-	-	-	-	-	-	-	N/A
03_Shower-3	-	1	0.5	-	-	-	-	-	-	-	-	N/A
03_Shower-4	-	1	0.5	-	-	-	-	-	-	-	-	N/A
03_Shower-5	-	1	0.5	-	-	-	-	-	-	-	-	N/A
03_Shower-6	-	1	0.5	-	-	-	-	-	-	-	-	N/A
03_Shower-7	-	1	0.5	-	-	-	-	-	-	-	-	N/A
03_Shower-8	-	1	0.5	-	-	-	-	-	-	-	-	N/A
01_Guest Room-05	-	1	0.5	-	-	-	-	-	-	-	-	N/A
02_Guest Room-05	-	1	0.5	-	-	-	-	-	-	-	-	N/A
03_Guest Room-05	-	1	0.5	-	-	-	-	-	-	-	-	N/A
04_Guest Room-05	-	1	0.5	-	-	-	-	-	-	-	-	N/A
05_Guest Room-05	-	1	0.5	-	-	-	-	-	-	-	-	N/A

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name	Standard value	Luminaire	Lamp	Display lamp	
		60	60	22	
05_Accesible Bathroom Bathroom-01		-	70	-	46

General lighting and display lighting		Luminous efficacy [lm/W]			
Zone name		Luminaire	Lamp	Display lamp	General lighting [W]
	Standard value	60	60	22	
05_Accesible Guest Room-01		-	70	-	59
05_Bathroom-16		-	70	-	28
05_Bathroom-17		-	70	-	29
05_Bathroom-18		-	70	-	28
05_Bathroom-19		-	70	-	29
05_Bathroom-20		-	70	-	28
05_Bathroom-20		-	70	-	33
05_Bathroom-21		-	70	-	27
05_Bathroom-22		-	70	-	29
05_Bathroom-23		-	70	-	30
05_Bathroom-24		-	70	-	29
05_Bathroom-25		-	70	-	27
01_Bathroom-38		-	70	-	25
04_Bathroom-38		-	70	-	25
05_Bathroom-38		-	70	-	25
01_Bathroom-39		-	70	-	28
05_Bathroom-39		-	70	-	28
04_Bathroom-39		-	70	-	28
01_Bathroom-40		-	70	-	26
05_Bathroom-40		-	70	-	26
04_Bathroom-40		-	70	-	26
05_Bathroom-41		-	70	-	27
01_Bathroom-41		-	70	-	27
04_Bathroom-41		-	70	-	27
01_Bathroom-42		-	70	-	25
05_Bathroom-42		-	70	-	25
04_Bathroom-42		-	70	-	25
01_Bathroom-43		-	70	-	33
01_Bathroom-44		-	70	-	29
05_Bathroom-44		-	70	-	29
04_Bathroom-44		-	70	-	29
01_Bathroom-45		-	70	-	28
05_Bathroom-45		-	70	-	28
04_Bathroom-45		-	70	-	28
05_Corridor-10		-	70	-	25
04_Corridor-10		-	70	-	27
01_Corridor-10		-	70	-	27
05_Corridor-9		-	70	-	167
05_Guest Room-01		-	70	-	46
04_Guest Room-01		-	70	-	48
01_Guest Room-01		-	70	-	48
01_Guest Room-02		-	70	-	46
04_Guest Room-02		-	70	-	46

General lighting and display lighting		Luminous efficacy [lm/W]			
Zone name		Luminaire	Lamp	Display lamp	General lighting [W]
	Standard value	60	60	22	
05_Guest Room-02		-	70	-	44
05_Guest Room-03		-	70	-	43
01_Guest Room-03		-	70	-	45
04_Guest Room-03		-	70	-	45
01_Guest Room-04		-	70	-	54
04_Guest Room-04		-	70	-	54
05_Guest Room-04		-	70	-	52
01_Guest Room-06		-	70	-	51
04_Guest Room-07		-	70	-	48
01_Guest Room-07		-	70	-	49
01_Guest Room-08		-	70	-	49
05_Guest Room-08		-	70	-	47
04_Guest Room-08		-	70	-	49
05_Guest Room-09		-	70	-	40
05_Guest Room-10		-	70	-	40
05_Guest Room-11		-	70	-	39
05_Guest Room-12		-	70	-	39
05_Guest Room-13		-	70	-	39
05_Guest Room-14		-	70	-	64
05_Guest Room-15		-	70	-	38
05_Guest Room-17		-	70	-	39
05_Guest Room-18		-	70	-	39
05_Guest Room-19		-	70	-	39
04_Shower-1		-	70	-	16
05_Shower-1		-	70	-	16
01_Shower-1		-	70	-	16
01_Shower-2		-	70	-	17
05_Shower-2		-	70	-	17
04_Shower-2		-	70	-	17
05_Shower-3		-	70	-	15
01_Shower-3		-	70	-	15
04_Shower-3		-	70	-	15
01_Shower-4		-	70	-	16
05_Shower-4		-	70	-	16
04_Shower-4		-	70	-	16
05_Shower-5		-	70	-	16
01_Shower-5		-	70	-	16
04_Shower-5		-	70	-	16
01_Shower-6		-	70	-	20
01_Shower-7		-	70	-	16
04_Shower-7		-	70	-	16
05_Shower-7		-	70	-	16
01_Shower-8		-	70	-	16

General lighting and display lighting		Luminous efficacy [lm/W]			
Zone name		Luminaire	Lamp	Display lamp	General lighting [W]
	Standard value	60	60	22	
05_Shower-8		-	70	-	16
04_Shower-8		-	70	-	16
05_Shower-9		-	70	-	26
00_Stair		-	70	-	91
01_Stair-03		-	70	-	70
05_Stair-03		-	70	-	68
04_Stair-03		-	70	-	70
05_Guest Room-07		-	70	-	48
05_Guest Room-16		-	70	-	39
02_Bathroom-38		-	70	-	25
02_Bathroom-39		-	70	-	28
02_Bathroom-40		-	70	-	26
02_Bathroom-41		-	70	-	27
02_Bathroom-42		-	70	-	25
02_Bathroom-43		-	70	-	33
02_Bathroom-44		-	70	-	29
02_Bathroom-45		-	70	-	28
02_Corridor-10		-	70	-	27
02_Guest Room-01		-	70	-	48
02_Guest Room-02		-	70	-	46
02_Guest Room-03		-	70	-	45
02_Guest Room-04		-	70	-	54
02_Guest Room-06		-	70	-	51
02_Guest Room-07		-	70	-	49
02_Guest Room-08		-	70	-	49
02_Shower-1		-	70	-	16
02_Shower-2		-	70	-	17
02_Shower-3		-	70	-	15
02_Shower-4		-	70	-	16
02_Shower-5		-	70	-	16
02_Shower-6		-	70	-	20
02_Shower-7		-	70	-	16
02_Shower-8		-	70	-	16
02_Stair-03		-	70	-	70
03_Bathroom-38		-	70	-	25
03_Bathroom-39		-	70	-	28
03_Bathroom-40		-	70	-	26
03_Bathroom-41		-	70	-	27
03_Bathroom-42		-	70	-	25
03_Bathroom-43		-	70	-	33
03_Bathroom-44		-	70	-	29
03_Bathroom-45		-	70	-	28
03_Corridor-10		-	70	-	27

General lighting and display lighting		Luminous efficacy [lm/W]			
Zone name		Luminaire	Lamp	Display lamp	General lighting [W]
	Standard value	60	60	22	
03_Guest Room-01		-	70	-	48
03_Guest Room-02		-	70	-	46
03_Guest Room-03		-	70	-	45
03_Guest Room-04		-	70	-	54
03_Guest Room-06		-	70	-	51
03_Guest Room-07		-	70	-	49
03_Guest Room-08		-	70	-	49
03_Shower-1		-	70	-	16
03_Shower-2		-	70	-	17
03_Shower-3		-	70	-	15
03_Shower-4		-	70	-	16
03_Shower-5		-	70	-	16
03_Shower-6		-	70	-	20
03_Shower-7		-	70	-	16
03_Shower-8		-	70	-	16
03_Stair-03		-	70	-	70
01_Guest Room-05		-	70	-	66
01_Corridor-11		-	70	-	96
02_Guest Room-05		-	70	-	66
02_Corridor-11		-	70	-	96
03_Guest Room-05		-	70	-	66
03_Corridor-11		-	70	-	96
04_Guest Room-05		-	70	-	66
04_Corridor-11		-	70	-	97
05_Guest Room-05		-	70	-	64
05_Corridor-11		-	70	-	91

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?
05_Accesible Bathroom Bathroom-01	N/A	N/A
05_Accesible Guest Room-01	NO (-87.2%)	NO
05_Bathroom-16	N/A	N/A
05_Bathroom-17	N/A	N/A
05_Bathroom-18	N/A	N/A
05_Bathroom-19	N/A	N/A
05_Bathroom-20	N/A	N/A
05_Bathroom-20	NO (-99.8%)	NO
05_Bathroom-21	N/A	N/A
05_Bathroom-22	N/A	N/A
05_Bathroom-23	N/A	N/A
05_Bathroom-24	N/A	N/A
05_Bathroom-25	N/A	N/A
01_Bathroom-38	N/A	N/A

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
04_Bathroom-38	N/A	N/A
05_Bathroom-38	N/A	N/A
01_Bathroom-39	N/A	N/A
05_Bathroom-39	N/A	N/A
04_Bathroom-39	N/A	N/A
01_Bathroom-40	N/A	N/A
05_Bathroom-40	N/A	N/A
04_Bathroom-40	N/A	N/A
05_Bathroom-41	N/A	N/A
01_Bathroom-41	N/A	N/A
04_Bathroom-41	N/A	N/A
01_Bathroom-42	N/A	N/A
05_Bathroom-42	N/A	N/A
04_Bathroom-42	N/A	N/A
01_Bathroom-43	N/A	N/A
01_Bathroom-44	N/A	N/A
05_Bathroom-44	N/A	N/A
04_Bathroom-44	N/A	N/A
01_Bathroom-45	N/A	N/A
05_Bathroom-45	N/A	N/A
04_Bathroom-45	N/A	N/A
05_Corridor-10	N/A	N/A
04_Corridor-10	N/A	N/A
01_Corridor-10	N/A	N/A
05_Corridor-9	N/A	N/A
05_Guest Room-01	NO (-85.7%)	NO
04_Guest Room-01	NO (-88.8%)	NO
01_Guest Room-01	NO (-91.6%)	NO
01_Guest Room-02	NO (-81.2%)	NO
04_Guest Room-02	NO (-74.1%)	NO
05_Guest Room-02	NO (-67.1%)	NO
05_Guest Room-03	NO (-68%)	NO
01_Guest Room-03	NO (-82%)	NO
04_Guest Room-03	NO (-74.6%)	NO
01_Guest Room-04	NO (-87.3%)	NO
04_Guest Room-04	NO (-83.9%)	NO
05_Guest Room-04	NO (-79.4%)	NO
01_Guest Room-06	NO (-79.8%)	NO
04_Guest Room-07	NO (-87.4%)	NO
01_Guest Room-07	NO (-60%)	NO
01_Guest Room-08	NO (-59.8%)	NO
05_Guest Room-08	NO (-59.8%)	NO
04_Guest Room-08	NO (-59.8%)	NO
05_Guest Room-09	NO (-75.8%)	NO
05_Guest Room-10	NO (-75.6%)	NO
05_Guest Room-11	NO (-74.4%)	NO
05_Guest Room-12	NO (-75.1%)	NO
05_Guest Room-13	NO (-74.9%)	NO
05_Guest Room-14	NO (-82.7%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
05_Guest Room-15	NO (-91.1%)	NO
05_Guest Room-17	NO (-85%)	NO
05_Guest Room-18	NO (-68.2%)	NO
05_Guest Room-19	NO (-70.5%)	NO
04_Shower-1	N/A	N/A
05_Shower-1	N/A	N/A
01_Shower-1	N/A	N/A
01_Shower-2	N/A	N/A
05_Shower-2	N/A	N/A
04_Shower-2	N/A	N/A
05_Shower-3	N/A	N/A
01_Shower-3	N/A	N/A
04_Shower-3	N/A	N/A
01_Shower-4	N/A	N/A
05_Shower-4	N/A	N/A
04_Shower-4	N/A	N/A
05_Shower-5	N/A	N/A
01_Shower-5	N/A	N/A
04_Shower-5	N/A	N/A
01_Shower-6	N/A	N/A
01_Shower-7	N/A	N/A
04_Shower-7	N/A	N/A
05_Shower-7	N/A	N/A
01_Shower-8	N/A	N/A
05_Shower-8	N/A	N/A
04_Shower-8	N/A	N/A
05_Shower-9	N/A	N/A
00_Stair	N/A	N/A
01_Stair-03	N/A	N/A
05_Stair-03	N/A	N/A
04_Stair-03	N/A	N/A
05_Guest Room-07	NO (-87.7%)	NO
05_Guest Room-16	NO (-79.9%)	NO
02_Bathroom-38	N/A	N/A
02_Bathroom-39	N/A	N/A
02_Bathroom-40	N/A	N/A
02_Bathroom-41	N/A	N/A
02_Bathroom-42	N/A	N/A
02_Bathroom-43	N/A	N/A
02_Bathroom-44	N/A	N/A
02_Bathroom-45	N/A	N/A
02_Corridor-10	N/A	N/A
02_Guest Room-01	NO (-90.9%)	NO
02_Guest Room-02	NO (-79.7%)	NO
02_Guest Room-03	NO (-80.2%)	NO
02_Guest Room-04	NO (-86.7%)	NO
02_Guest Room-06	NO (-79.8%)	NO
02_Guest Room-07	NO (-60%)	NO
02_Guest Room-08	NO (-59.8%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
02_Shower-1	N/A	N/A
02_Shower-2	N/A	N/A
02_Shower-3	N/A	N/A
02_Shower-4	N/A	N/A
02_Shower-5	N/A	N/A
02_Shower-6	N/A	N/A
02_Shower-7	N/A	N/A
02_Shower-8	N/A	N/A
02_Stair-03	N/A	N/A
03_Bathroom-38	N/A	N/A
03_Bathroom-39	N/A	N/A
03_Bathroom-40	N/A	N/A
03_Bathroom-41	N/A	N/A
03_Bathroom-42	N/A	N/A
03_Bathroom-43	N/A	N/A
03_Bathroom-44	N/A	N/A
03_Bathroom-45	N/A	N/A
03_Corridor-10	N/A	N/A
03_Guest Room-01	NO (-90.2%)	NO
03_Guest Room-02	NO (-78.4%)	NO
03_Guest Room-03	NO (-79%)	NO
03_Guest Room-04	NO (-85.6%)	NO
03_Guest Room-06	NO (-79.8%)	NO
03_Guest Room-07	NO (-60%)	NO
03_Guest Room-08	NO (-59.8%)	NO
03_Shower-1	N/A	N/A
03_Shower-2	N/A	N/A
03_Shower-3	N/A	N/A
03_Shower-4	N/A	N/A
03_Shower-5	N/A	N/A
03_Shower-6	N/A	N/A
03_Shower-7	N/A	N/A
03_Shower-8	N/A	N/A
03_Stair-03	N/A	N/A
01_Guest Room-05	NO (-94.1%)	NO
01_Corridor-11	N/A	N/A
02_Guest Room-05	NO (-93.9%)	NO
02_Corridor-11	N/A	N/A
03_Guest Room-05	NO (-93.4%)	NO
03_Corridor-11	N/A	N/A
04_Guest Room-05	NO (-92.8%)	NO
04_Corridor-11	N/A	N/A
05_Guest Room-05	NO (-91.5%)	NO
05_Corridor-11	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?	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
Area [m ²]	1578.9	1578.9
External area [m ²]	2229.2	2229.2
Weather	LON	LON
Infiltration [m ³ /hm ² @ 50Pa]	3	3
Average conductance [W/K]	518.44	1275.1
Average U-value [W/m ² K]	0.23	0.57
Alpha value* [%]	9.89	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 Inst.: Hospitals and Care Homes
C2 Residential Inst.: Residential schools
C2 Residential Inst.: Universities and colleges
C2A Secure Residential Inst.
Residential spaces
D1 Non-residential Inst.: Community/Day Centre
D1 Non-residential Inst.: Libraries, Museums, and Galleries
D1 Non-residential Inst.: Education
D1 Non-residential Inst.: Primary Health Care Building
D1 Non-residential Inst.: 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	6.28	19.58
Cooling	1	4.16
Auxiliary	10.79	7.41
Lighting	9.73	11.3
Hot water	301.43	183.72
Equipment*	12.31	12.31
TOTAL**	273.33	226.17

* Energy used by equipment does not count towards the total for 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	2.45	0
Wind turbines	0	0
CHP generators	55.9	0
Solar thermal systems	0	0

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	126.26	237.06
Primary energy* [kWh/m ²]	314.58	438
Total emissions [kg/m ²]	51.6	72.4

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

HVAC Systems Performance

System Type	Heat dem MJ/m ²	Cool dem MJ/m ²	Heat con kWh/m ²	Cool con kWh/m ²	Aux con kWh/m ²	Heat SSEFF	Cool SSEER	Heat gen SEFF	Cool gen SEER
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity									
Actual	108.9	17.4	6.3	1	10	4.82	4.82	5.17	6.79
Notional	180.3	56.8	19.6	4.2	7.4	2.56	3.79	----	----
[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/m ²]	= Heating energy demand
Cool dem [MJ/m ²]	= Cooling energy demand
Heat con [kWh/m ²]	= Heating energy consumption
Cool con [kWh/m ²]	= Cooling energy consumption
Aux con [kWh/m ²]	= 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 BCO can give particular attention to items with specifications that 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	CC000004:Surf[1]
Floor	0.2	0.18	BT00002C:Surf[0]
Roof	0.15	0.15	BT0000C8:Surf[0]
Windows, roof windows, and rooflights	1.5	1.4	CC000004:Surf[0]
Personnel doors	1.5	1.6	BN000000:Surf[1]
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	3