

Project name

MSC (Be Lean)

As designed

Date: Mon Apr 28 15:24:46 2025

Administrative information

Building Details

Address: LONDON, N6 4AY

Certifier details

Name:

Telephone number:

Address: , ,

Certification tool

Calculation engine: SBEM

Calculation engine version: v6.1.e.2

Interface to calculation engine: DesignBuilder SBEM

Interface to calculation engine version: v7.3.1

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

Foundation area [m²]: 579.4The CO₂ emission and primary energy rates of the building must not exceed the targets

The building does not comply with England Building Regulations Part L 2021

Target CO ₂ emission rate (TER), kgCO ₂ /m ² annum	1.26
Building CO ₂ emission rate (BER), kgCO ₂ /m ² annum	8.84
Target primary energy rate (TPER), kWh _{PE} /m ² annum	10.26
Building primary energy rate (BPER), kWh _{PE} /m ² annum	93.64
Do the building's emission and primary energy rates exceed the targets?	BER > TER BPER > TPER

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

Fabric element	U _a -Limit	U _a -Calc	U _i -Calc	First surface with maximum value
Walls*	0.26	0.3	0.3	1. GF REST - IT COMMS RM_P_7
Floors	0.18	0.13	0.25	1. GF REST - CARDIO RM_S_3
Pitched roofs	0.16	-	-	No heat loss pitched roofs
Flat roofs	0.18	0.12	0.12	1. GF REST - IT COMMS RM_R_5
Windows** and roof windows	1.6	1.4	1.4	2. FF CORR S - CIRR_G_17
Rooflights***	2.2	1.7	1.7	1. GF SP HALL 1 - SP HALL 1_G_13
Personnel doors^	1.6	-	-	No external personnel doors
Vehicle access & similar large doors	1.3	-	-	No external vehicle access doors
High usage entrance doors	3	-	-	No external high usage entrance doors

U_a-Limit = Limiting area-weighted average U-values [W/(m²K)]U_i-Calc = Calculated maximum individual element U-values [W/(m²K)]U_a-Calc = Calculated area-weighted average U-values [W/(m²K)]

* Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows.

** Display windows and similar glazing are excluded from the U-value check.

*** Values for rooflights refer to the horizontal position.

^ For fire doors, limiting U-value is 1.8 W/m²K

NB: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.

Air permeability	Limiting standard	This building
m ³ /(h.m ²) at 50 Pa	8	25

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	<0.9

1- Multi split baseline 5.0

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	2.5	5	-	-	-
Standard value	2.5*	5	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.					

2- Local Electric Heating

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1	-	0.4	-	-
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

3- Dry Sport Hall Warm air heating

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	2.5	-	-	2.2	0.7
Standard value	N/A	N/A	N/A	1.9^	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
^ Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.					

1- DHW from Electric

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	1	-
Standard value	1	N/A

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			
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1		Zone	Standard
1. GF REST - CHANGING RM 3	-	-	-	-	1.9	-	-	-	-		0.8	N/A
1. GF REST - CARDIO RM	-	-	-	-	1.9	-	-	-	-		0.8	N/A

Zone name	SFP [W/(l/s)]									HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I		
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard
2. FF CORR S - RECEPTION	-	-	-	-	1.9	-	-	-	-	0.7	N/A
2. FF CORR S - STAFF WELFARE (CHANGING RM)	-	-	-	-	1.9	-	-	-	-	0.8	N/A
2. FF CORR S - OFFICE	-	-	-	-	1.9	-	-	-	-	0.8	N/A
2. FF CORR S - STAFF WC 2	-	-	0.5	-	-	-	-	-	-	-	N/A
2. FF CORR S - STAFF WC 1	-	-	0.5	-	-	-	-	-	-	-	N/A

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]
Standard value	95	80	0.3	
1. GF REST - STORES 2	95	-	-	
1. GF REST - PLANT RM SPH 1	95	-	-	
2. FF CORR S - STORE	95	-	-	
1. GF REST - IT COMMS RM	95	-	-	
1. GF REST - CHANGING RM 3	95	-	-	
1. GF REST - CARDIO RM	95	-	-	
2. FF CORR S - RECEPTION	95	50	2.7	
2. FF CORR S - STAFF WELFARE (CHANGING RM)	95	-	-	
2. FF CORR S - OFFICE	95	-	-	
2. FF CORR S - CENTRAL OFFICE	95	-	-	
2. FF CORR S - CIRR	95	-	-	
2. FF CORR S - LOBBY & STAIR	95	-	-	
2. FF CORR S - STAFF WC 2	95	-	-	
2. FF CORR S - STAFF WC 1	95	-	-	
1. GF SP HALL 1 - SP HALL 1	95	-	-	

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?
1. GF REST - IT COMMS RM	N/A	N/A
1. GF REST - CHANGING RM 3	N/A	N/A
1. GF REST - CARDIO RM	N/A	N/A
2. FF CORR S - RECEPTION	N/A	N/A
2. FF CORR S - STAFF WELFARE (CHANGING RM)	N/A	N/A
2. FF CORR S - OFFICE	N/A	N/A
2. FF CORR S - CENTRAL OFFICE	N/A	N/A
1. GF SP HALL 1 - SP HALL 1	NO (-55%)	NO

Regulation 25A: Consideration of high efficiency alternative energy systems

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

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Floor area [m ²]	1158.8	1158.8
External area [m ²]	3109.2	3109.2
Weather	LON	LON
Infiltration [m ³ /hm ² @ 50Pa]	25	4
Average conductance [W/K]	689.44	896.41
Average U-value [W/m ² K]	0.22	0.29
Alpha value* [%]	11.42	20.99

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

Building Use

% Area Building Type

Retail/Financial and Professional Services
 Restaurants and Cafes/Drinking Establishments/Takeaways
 Offices and Workshop Businesses
 General Industrial and Special Industrial Groups
 Storage or Distribution
 Hotels
 Residential Institutions: Hospitals and Care Homes
 Residential Institutions: Residential Schools
 Residential Institutions: Universities and Colleges
 Secure Residential Institutions
 Residential Spaces
 Non-residential Institutions: Community/Day Centre
 Non-residential Institutions: Libraries, Museums, and Galleries

100

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	18.68	11.23
Cooling	0.81	0.48
Auxiliary	20.19	3.62
Lighting	11.76	5.55
Hot water	9.49	9.49
Equipment*	19.04	19.04
TOTAL **	60.94	30.37

* 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	24.1
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
<i>Displaced electricity</i>	<i>0</i>	<i>24.1</i>

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	183.53	146.9
Primary energy [kWh _{PE} /m ²]	93.64	10.26
Total emissions [kg/m ²]	8.84	1.26

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 SSEEF	Cool SSEER	Heat gen SEFF	Cool gen SEER	
[ST] No Heating or Cooling										
	Actual	102.8	304.2	0	0	0	0	0	0	0
	Notional	68.2	291.8	0	0	0	0	----	----	----
[ST] Split or multi-split system, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	60.7	57.9	7.2	4.5	7.6	2.33	3.55	2.5	5
	Notional	17.7	42.3	1.9	2.7	2.3	2.64	4.4	----	----
[ST] Unflued radiant heater, [HS] Unflued radiant heater, [HFT] Electricity, [CFT] Natural Gas										
	Actual	240.2	44.4	71.5	0	0.4	0.93	0	1	0
	Notional	97	91.4	20.1	0	0.4	1.34	0	----	----
[ST] Central heating using air distribution, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity										
	Actual	119.4	13.6	13.6	0	33.2	2.44	0	2.5	0
	Notional	69.6	50.1	14.4	0	5.6	1.34	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