

Project name

Be Green**As designed****Date:** Tue Sep 06 16:01:01 2022

Administrative information

Building Details

Address: 44-46 Hampstead Lane, London, N6 4LL

Certifier details

Name: Ondrej Gajdos**Telephone number:** 02080995978**Address:** , ,

Certification tool

Calculation engine: SBEM**Calculation engine version:** v6.1.c.0**Interface to calculation engine:** DesignBuilder SBEM**Interface to calculation engine version:** v7.1.2**BRUKL compliance module version:** v6.1.c.0**Foundation area [m²]:** 731.89The 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	8.02
Building CO ₂ emission rate (BER), kgCO ₂ /m ² annum	5.06
Target primary energy rate (TPER), kWh/m ² annum	87.21
Building primary energy rate (BPER), kWh/m ² annum	54.73
Do the building's emission and primary energy rates exceed the targets?	BER ≤ TER BPER ≤ TPER

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

Fabric element	U _{a-Limit}	U _{a-Calc}	U _{i-Calc}	First surface with maximum value
Walls*	0.26	0.16	0.16	OLG - studios1_W_30
Floors	0.18	0.12	0.13	OLG - cinema_F_8
Pitched roofs	0.16	-	-	No heat loss pitched roofs
Flat roofs	0.18	0.13	0.13	OLG - cinema_R_17
Windows** and roof windows	1.6	1.2	1.3	1st - circ1_G_56
Rooflights***	2.2	-	-	No external rooflights
Personnel doors^	1.6	1.5	1.5	00Basement - circ_D_49
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	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- Heating&cooling

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.99	4.92	-	-	-
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					YES
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.					

2- Heating

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.99	-	-	-	-
Standard value	2.5*	N/A	N/A	N/A	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.					

1- Project DHW

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	3.99	0.01
Standard value	2*	N/A
* Standard shown is for all types except absorption and gas engine heat pumps.		

Zone-level mechanical ventilation, exhaust, and terminal units

ID	System type in the Approved Documents
A	Local supply or extract ventilation units
B	Zonal supply system where the fan is remote from the zone
C	Zonal extract system where the fan is remote from the zone
D	Zonal balanced supply and extract ventilation system
E	Local balanced supply and extract ventilation units
F	Other local ventilation units
G	Fan assisted terminal variable air volume units
H	Fan coil units
I	Kitchen extract with the fan remote from the zone and a grease filter
NB: Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.	

Zone name	SFP [W/(l/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1		Zone	Standard
0LG - din-lounge	-	-	-	-	0.5	-	-	-	-		0.8	N/A
0LG - studios2	-	-	-	-	0.5	-	-	-	-		0.8	N/A
0LG - studios3	-	-	-	-	0.5	-	-	-	-		0.8	N/A
0UG - studios5	-	-	-	-	0.5	-	-	-	-		0.8	N/A
0UG - studios1	-	-	-	-	0.5	-	-	-	-		0.8	N/A
0UG - ofc	-	-	-	-	0.5	-	-	-	-		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
0UG - studios3	-	-	-	-	0.5	-	-	-	-	0.8	N/A
0UG - lounge	-	-	-	-	0.5	-	-	-	-	0.8	N/A
0UG - studios4	-	-	-	-	0.5	-	-	-	-	0.8	N/A
0UG - nurse	-	-	-	-	0.5	-	-	-	-	0.8	N/A
0UG - cafe	-	-	-	-	0.5	-	-	-	-	0.8	N/A
0UG - studios2	-	-	-	-	0.5	-	-	-	-	0.8	N/A
1st - studios1	-	-	-	-	0.5	-	-	-	-	0.8	N/A
1st - studios5	-	-	-	-	0.5	-	-	-	-	0.8	N/A
1st - studios6	-	-	-	-	0.5	-	-	-	-	0.8	N/A
1st - studios7	-	-	-	-	0.5	-	-	-	-	0.8	N/A
1st - lounge	-	-	-	-	0.5	-	-	-	-	0.8	N/A
1st - quiet	-	-	-	-	0.5	-	-	-	-	0.8	N/A
1st - studios3	-	-	-	-	0.5	-	-	-	-	0.8	N/A
1st - studios4	-	-	-	-	0.5	-	-	-	-	0.8	N/A
1st - din-lounge	-	-	-	-	0.5	-	-	-	-	0.8	N/A
1st - studios2	-	-	-	-	0.5	-	-	-	-	0.8	N/A
2ndB - nurse	-	-	-	-	0.5	-	-	-	-	0.8	N/A
2ndB - studios1	-	-	-	-	0.5	-	-	-	-	0.8	N/A
2ndB - din-lounge	-	-	-	-	0.5	-	-	-	-	0.8	N/A
2ndB - studios2	-	-	-	-	0.5	-	-	-	-	0.8	N/A
2ndB - studios4	-	-	-	-	0.5	-	-	-	-	0.8	N/A
2ndB - studios3	-	-	-	-	0.5	-	-	-	-	0.8	N/A
2ndA - studios1	-	-	-	-	0.5	-	-	-	-	0.8	N/A
2ndA - din-lounge	-	-	-	-	0.5	-	-	-	-	0.8	N/A
2ndA - studios2	-	-	-	-	0.5	-	-	-	-	0.8	N/A
00Basement - laundry	0.3	-	-	-	-	-	-	-	-	-	N/A
00Basement - kit	-	-	-	-	-	-	-	-	0.6	-	N/A
00Basement - staff	-	-	-	-	0.5	-	-	-	-	0.8	N/A
00Basement - wc	0.3	-	-	-	-	-	-	-	-	-	N/A
00Basement - shwr	0.3	-	-	-	-	-	-	-	-	-	N/A
0LG - circ1	-	-	-	-	0.5	-	-	-	-	0.8	N/A
0LG - circ2	-	-	-	-	0.5	-	-	-	-	0.8	N/A
0LG - wc1	0.3	-	-	-	-	-	-	-	-	-	N/A
0LG - bath1	0.3	-	-	-	-	-	-	-	-	-	N/A
0LG - wc2	0.3	-	-	-	-	-	-	-	-	-	N/A
0UG - treat	-	-	-	-	0.5	-	-	-	-	0.8	N/A
0UG - circ1	-	-	-	-	0.5	-	-	-	-	0.8	N/A
0UG - rec	-	-	-	-	0.5	-	-	-	-	0.8	N/A
0UG - wc1	0.3	-	-	-	-	-	-	-	-	-	N/A
0UG - din	-	-	-	-	0.5	-	-	-	-	0.8	N/A
0UG - bath1	0.3	-	-	-	-	-	-	-	-	-	N/A
0UG - wc2	0.3	-	-	-	-	-	-	-	-	-	N/A
0UG - wc3	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			
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard	
1st - circ1	-	-	-	-	0.5	-	-	-	-	0.8	N/A	
1st - wc1	0.3	-	-	-	-	-	-	-	-	-	N/A	
1st - din	-	-	-	-	0.5	-	-	-	-	0.8	N/A	
1st - sluice	0.3	-	-	-	-	-	-	-	-	-	N/A	
1st - nurse	-	-	-	-	0.5	-	-	-	-	0.8	N/A	
1st - bath1	0.3	-	-	-	-	-	-	-	-	-	N/A	
1st - shower	0.3	-	-	-	-	-	-	-	-	-	N/A	
2ndB - circ1	-	-	-	-	0.5	-	-	-	-	0.8	N/A	
2ndA - bath1	0.3	-	-	-	-	-	-	-	-	-	N/A	
2ndA - circ1	-	-	-	-	0.5	-	-	-	-	0.8	N/A	
2ndA - sluice	0.3	-	-	-	-	-	-	-	-	-	N/A	
2ndA - wc1	0.3	-	-	-	-	-	-	-	-	-	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
0LG - studios1		110	-	-
0LG - cinema		110	-	-
0LG - din-lounge		110	-	-
0LG - studios2		110	-	-
0LG - studios3		110	-	-
0UG - studios5		110	-	-
0UG - studios1		110	-	-
0UG - ofc		110	-	-
0UG - studios3		110	-	-
0UG - lounge		110	-	-
0UG - studios4		110	-	-
0UG - nurse		110	-	-
0UG - cafe		110	-	-
0UG - studios2		110	-	-
1st - studios1		110	-	-
1st - studios5		110	-	-
1st - studios6		110	-	-
1st - studios7		110	-	-
1st - lounge		110	-	-
1st - quiet		110	-	-
1st - studios3		110	-	-
1st - studios4		110	-	-
1st - din-lounge		110	-	-
1st - studios2		110	-	-
2ndB - nurse		110	-	-
2ndB - studios1		110	-	-
2ndB - din-lounge		110	-	-

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
2ndB - studios2		110	-	-
2ndB - studios4		110	-	-
2ndB - studios3		110	-	-
2ndA - studios1		110	-	-
2ndA - din-lounge		110	-	-
2ndA - studios2		110	-	-
00Basement - laundry		110	-	-
00Basement - plant		110	-	-
00Basement - kit		110	-	-
00Basement - circ		110	-	-
00Basement - st1		110	-	-
00Basement - staff		110	-	-
00Basement - wc		110	-	-
00Basement - st2		110	-	-
00Basement - shwr		110	-	-
00Basement - st3		110	-	-
0LG - quiet		110	-	-
0LG - st7		110	-	-
0LG - drugs		110	-	-
0LG - plant		110	-	-
0LG - circ1		110	-	-
0LG - nurse		110	-	-
0LG - circ2		110	-	-
0LG - wc1		110	-	-
0LG - st2		110	-	-
0LG - st3		110	-	-
0LG - st1		110	-	-
0LG - bath1		110	-	-
0LG - st4		110	-	-
0LG - st5		110	-	-
0LG - wc2		110	-	-
0LG - st6		110	-	-
0UG - treat		110	-	-
0UG - circ1		110	-	-
0UG - st1		110	-	-
0UG - rec		110	50	2.7
0UG - wc1		110	-	-
0UG - din		110	-	-
0UG - bath1		110	-	-
0UG - drugs		110	-	-
0UG - wc2		110	-	-
0UG - st2		110	-	-
0UG - st3		110	-	-

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
0UG - st4		110	-	-
0UG - wc3		110	-	-
1st - circ1		110	-	-
1st - wc1		110	-	-
1st - din		110	-	-
1st - sluice		110	-	-
1st - nurse		110	-	-
1st - bath1		110	-	-
1st - shower		110	-	-
1st - drugs		110	-	-
1st - st1		110	-	-
1st - st2		110	-	-
1st - st3		110	-	-
2ndB - st1		110	-	-
2ndB - circ1		110	-	-
2ndB - st2		110	-	-
2ndB - drugs		110	-	-
2ndA - bath1		110	-	-
2ndA - circ1		110	-	-
2ndA - sluice		110	-	-
2ndA - st1		110	-	-
2ndA - st2		110	-	-
2ndA - wc1		110	-	-

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?
0LG - studios1	NO (-16.4%)	NO
0LG - cinema	N/A	N/A
0LG - din-lounge	NO (-5.3%)	NO
0LG - studios2	NO (-47.6%)	NO
0LG - studios3	NO (-44.8%)	NO
0UG - studios5	NO (-29.1%)	NO
0UG - studios1	NO (-45.4%)	NO
0UG - ofc	NO (-52.1%)	NO
0UG - studios3	NO (-46.7%)	NO
0UG - lounge	NO (-2.5%)	NO
0UG - studios4	NO (-40.8%)	NO
0UG - nurse	N/A	N/A
0UG - cafe	NO (-60.5%)	NO
0UG - studios2	NO (-87%)	NO
1st - studios1	NO (-52.7%)	NO
1st - studios5	NO (-57.8%)	NO
1st - studios6	NO (-61.5%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
1st - studios7	NO (-63.4%)	NO
1st - lounge	NO (-50.6%)	NO
1st - quiet	NO (-19.4%)	NO
1st - studios3	NO (-74%)	NO
1st - studios4	NO (-70.4%)	NO
1st - din-lounge	NO (-33.3%)	NO
1st - studios2	NO (-81.1%)	NO
2ndB - nurse	NO (-63.6%)	NO
2ndB - studios1	NO (-83.6%)	NO
2ndB - din-lounge	NO (-64.9%)	NO
2ndB - studios2	NO (-85.7%)	NO
2ndB - studios4	NO (-77.1%)	NO
2ndB - studios3	NO (-68.4%)	NO
2ndA - studios1	NO (-80.1%)	NO
2ndA - din-lounge	NO (-69.9%)	NO
2ndA - studios2	NO (-78.8%)	NO
00Basement - staff	N/A	N/A
0LG - quiet	N/A	N/A
0LG - nurse	N/A	N/A
0UG - treat	NO (-32.5%)	NO
0UG - rec	N/A	N/A
0UG - din	NO (-32.9%)	NO
1st - din	NO (-38.5%)	NO
1st - nurse	NO (-66%)	NO

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?	NO
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]	4391.4	4391.4
External area [m ²]	4686.6	4686.6
Weather	LON	LON
Infiltration [m ³ /hm ² @ 50Pa]	3	3
Average conductance [W/K]	1271.05	1700.03
Average U-value [W/m ² K]	0.27	0.36
Alpha value* [%]	87.27	52.66

* 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
100 Residential Institutions: Hospitals and Care Homes
 Residential Institutions: Residential Schools
 Residential Institutions: Universities and Colleges
 Secure Residential Institutions
 Residential Spaces
 Non-residential Institutions: Community/Day Centre
 Non-residential Institutions: Libraries, Museums, and Galleries
 Non-residential Institutions: Education
 Non-residential Institutions: Primary Health Care Building
 Non-residential Institutions: Crown and County Courts
 General Assembly and Leisure, Night Clubs, and Theatres
 Others: Passenger Terminals
 Others: Emergency Services
 Others: Miscellaneous 24hr Activities
 Others: Car Parks 24 hrs
 Others: Stand Alone Utility Block

Energy Consumption by End Use [kWh/m²]

	Actual	Notional
Heating	2.79	4.74
Cooling	7.52	7.69
Auxiliary	7.81	10.02
Lighting	7.14	7.24
Hot water	15.98	29.34
Equipment*	36.16	36.16
TOTAL **	41.24	59.03

* 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	4.2	0
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
<i>Displaced electricity</i>	<i>4.2</i>	<i>0</i>

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	245.14	212.15
Primary energy [kWh/m ²]	54.73	87.21
Total emissions [kg/m ²]	5.06	8.02

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] Split or multi-split system, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	44.4	176.9	3.2	13.4	5.9	3.91	3.68	3.99	4.92
	Notional	53.5	132.8	5.6	13.7	8.9	2.64	2.7	----	----
[ST] Central heating using water: floor heating, [HS] ASHP, [HFT] Electricity, [CFT] Natural Gas										
	Actual	31.5	244.4	2.3	0	10	3.75	0	3.99	0
	Notional	34.2	211.1	3.6	0	10.7	2.64	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