

Project name

16 Whitfield Street - New Build BE LEAN

As designed

Date: Fri Mar 14 17:26:00 2025

Administrative information

Building Details

Address: 16 Whitfield Street - New Build BE LEAN,
London, W1T 2RA

Certifier details

Name: Luke Taylor

Telephone number: 07887792272

Address: 150 Hutton Road, Shenfield, CM15 8NL

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]: 669.98The 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	1.35
Building CO ₂ emission rate (BER), kgCO ₂ /m ² annum	5.04
Target primary energy rate (TPER), kWh _{PE} /m ² annum	13.4
Building primary energy rate (BPER), kWh _{PE} /m ² annum	55.46
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	0.26	0.26	4th Floor - Office_W_5
Floors	0.18	-	-	No heat loss floors
Pitched roofs	0.16	-	-	No heat loss pitched roofs
Flat roofs	0.18	0.18	0.18	4th Floor - Office_R_4
Windows** and roof windows	1.6	1.4	1.4	4th Floor - Office_G_6
Rooflights***	2.2	-	-	No external rooflights
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	4

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

1- VRV

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	2.5	5	-	1.9	0.89
Standard value	2.5*	5	N/A	2^	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.					
^ Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.					

1- POU

	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		Zone	Standard
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1			
4th Floor - Toilet	-	-	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
4th Floor - Staircase		120	-	-
4th Floor - Toilet		120	-	-
4th Floor - Staircase		120	-	-
4th Floor - Office		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?
4th Floor - Office	YES (+9.7%)	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?	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]	722.5	722.5
External area [m ²]	1539.1	1539.1
Weather	LON	LON
Infiltration [m ³ /hm ² @ 50Pa]	4	3
Average conductance [W/K]	579.43	475.71
Average U-value [W/m ² K]	0.38	0.31
Alpha value* [%]	8.27	13.59

* 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
100	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
	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	3.26	3.65
Cooling	10.65	5.15
Auxiliary	8.6	8.1
Lighting	12.6	8.39
Hot water	2.68	2.68
Equipment*	39.88	39.88
TOTAL**	37.8	27.96

* 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	18.93
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
<i>Displaced electricity</i>	<i>0</i>	<i>18.93</i>

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	191.51	135.04
Primary energy [kWh _{PE} /m ²]	55.46	13.4
Total emissions [kg/m ²]	5.04	1.35

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] No Heating or Cooling										
	Actual	600.1	0.5	0	0	3	0	0	0	0
	Notional	216.5	42.6	0	0	3.7	0	0	----	----
[ST] Variable refrigerant flow, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	29.8	129.6	3.5	11.5	9	2.36	3.14	2.5	5
	Notional	37.4	87.9	3.9	5.5	8.4	2.64	4.4	----	----

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