

## Project name

**Eversolt Street**

As designed

Date: Tue Nov 08 08:21:30 2022

## Administrative information

## Building Details

Address: ,

## Certification tool

Calculation engine: SBEM

Calculation engine version: v5.6.b.0

Interface to calculation engine: DesignBuilder SBEM

Interface to calculation engine version: v6.1.8

BRUKL compliance check version: v5.6.b.0

## Certifier details

Name: Neil Ingham

Telephone number:

Address: Holborn Tower, London,

Criterion 1: The calculated CO<sub>2</sub> emission rate for the building must not exceed the target

CO <sub>2</sub> emission rate from the notional building, kgCO <sub>2</sub> /m <sup>2</sup> .annum	58.4
Target CO <sub>2</sub> emission rate (TER), kgCO <sub>2</sub> /m <sup>2</sup> .annum	58.4
Building CO <sub>2</sub> emission rate (BER), kgCO <sub>2</sub> /m <sup>2</sup> .annum	50.4
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 fixed building services should achieve reasonable overall standards of energy efficiency

Values which do not achieve the standards in the Non-Domestic Building Services Compliance Guide and Part L are displayed in red.

## Building fabric

Element	U <sub>a</sub> -Limit	U <sub>a</sub> -Calc	U <sub>i</sub> -Calc	Surface where the maximum value occurs*
Wall**	0.35	0.3	0.3	"Block 1 - CIRCULATION 1_P_8"
Floor	0.25	0.48	0.58	"Block 1 - CIRCULATION 1_S_3"
Roof	0.25	0.18	0.18	"Block 1 - CIRCULATION 1_R_5"
Windows***, roof windows, and rooflights	2.2	5.98	5.98	"Block 2 - BAR & SERVERY_G_11"
Personnel doors	2.2	3	3	"Block 2 - RESTAURANT_D_15"
Vehicle access & similar large doors	1.5	-	-	"No external vehicle access doors"
High usage entrance doors	3.5	-	-	"No external high usage entrance doors"
U <sub>a</sub> -Limit = Limiting area-weighted average U-values [W/(m <sup>2</sup> K)] U <sub>a</sub> -Calc = Calculated area-weighted average U-values [W/(m <sup>2</sup> K)] U <sub>i</sub> -Calc = Calculated maximum individual element U-values [W/(m <sup>2</sup> 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 <sup>3</sup> /(h.m <sup>2</sup> ) at 50 Pa	10	10

## 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	<0.9

1- Gas

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
<b>This system</b>	0.96	3.2	-	-	-
<b>Standard value</b>	0.91*	N/A	N/A	N/A	N/A
<b>Automatic monitoring &amp; targeting with alarms for out-of-range values for this HVAC system</b>					NO
* Standard shown is for gas single boiler systems <=2 MW output. For single boiler systems >2 MW or multi-boiler systems, (overall) limiting efficiency is 0.86. For any individual boiler in a multi-boiler system, limiting efficiency is 0.82.					

1- Gas

	Water heating efficiency	Storage loss factor [kWh/litre per day]
<b>This building</b>	0.96	0.001
<b>Standard value</b>	0.8	N/A

### 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	SFP [W/(l/s)]										HR efficiency	
	ID of system type	A	B	C	D	E	F	G	H	I	Zone	Standard
	<b>Standard value</b>	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1		
Block 1 - WC 1		-	0.9	0.4	-	-	-	-	-	-	-	N/A
Block 1 - OFFICE		-	0.9	0.4	-	-	-	-	-	-	-	N/A
Block 1 - KITCHEN		-	0.9	-	-	-	-	-	-	0.9	-	N/A
Block 1 - STAFF ROOM		-	0.9	-	-	-	-	-	-	-	-	N/A
Block 1 - WC 2		-	0.9	0.4	-	-	-	-	-	-	-	N/A
Block 1 - WC		-	0.9	0.4	-	-	-	-	-	-	-	N/A
Block 2 - BAR & SERVERY		-	-	0.4	-	-	-	-	-	-	-	N/A
Block 2 - WC		-	0.9	0.4	-	-	-	-	-	-	-	N/A
Block 2 - RESTAURANT		-	-	0.4	-	-	-	-	-	-	-	N/A

### General lighting and display lighting

Zone name	Luminous efficacy [lm/W]			General lighting [W]	
	Luminaire	Lamp	Display lamp		
	<b>Standard value</b>	60	60	22	
Block 1 - STORE 1		110	-	-	16
Block 1 - CELLAR		110	-	-	34

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name	Standard value	Luminaire	Lamp	Display lamp	
	60	60	60	22	
Block 1 - STORE 2	110	-	-	-	13
Block 1 - PLANT 1	110	-	-	-	43
Block 1 - PLANT	110	-	-	-	75
Block 1 - STORE 3	110	-	-	-	13
Block 1 - STORE	110	-	-	-	5
Block 1 - CIRCULATION 1	-	110	-	-	38
Block 1 - WC 1	-	110	-	-	186
Block 1 - OFFICE	110	-	-	-	57
Block 1 - KITCHEN	-	110	-	-	495
Block 1 - CIRCULATION 2	-	110	-	-	27
Block 1 - STAFF ROOM	-	110	-	-	116
Block 1 - CIRCULATION	-	110	-	-	16
Block 1 - WC 2	-	110	-	-	21
Block 1 - WC	-	110	-	-	21
Block 2 - BAR & SERVERY	-	110	-	-	285
Block 2 - WC	-	110	-	-	27
Block 2 - RESTAURANT	-	110	110	-	386
Block 2 - CIRCULATION	-	110	-	-	31

**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?
Block 1 - CIRCULATION 1	N/A	N/A
Block 1 - WC 1	N/A	N/A
Block 1 - OFFICE	N/A	N/A
Block 1 - KITCHEN	N/A	N/A
Block 1 - CIRCULATION 2	N/A	N/A
Block 1 - STAFF ROOM	N/A	N/A
Block 1 - CIRCULATION	N/A	N/A
Block 1 - WC 2	N/A	N/A
Block 1 - WC	N/A	N/A
Block 2 - BAR & SERVERY	NO (-50.8%)	NO
Block 2 - WC	N/A	N/A
Block 2 - RESTAURANT	YES (+36.7%)	NO
Block 2 - CIRCULATION	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

<b>Were alternative energy systems considered and analysed as part of the design process?</b>	<b>NO</b>
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
Area [m <sup>2</sup> ]	558	558
External area [m <sup>2</sup> ]	1027.7	1027.7
Weather	LON	LON
Infiltration [m <sup>3</sup> /hm <sup>2</sup> @ 50Pa]	10	3
Average conductance [W/K]	601.48	302.49
Average U-value [W/m <sup>2</sup> K]	0.59	0.29
Alpha value* [%]	6.78	10.94

\* 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
100	<b>A3/A4/A5 Restaurants and Cafes/Drinking Est./Takeaways</b>
	B1 Offices and Workshop businesses
	B2 to B7 General Industrial and Special Industrial Groups
	B8 Storage or Distribution
	C1 Hotels
	C2 Residential Institutions: Hospitals and Care Homes
	C2 Residential Institutions: Residential schools
	C2 Residential Institutions: Universities and colleges
	C2A Secure Residential Institutions
	Residential spaces
	D1 Non-residential Institutions: Community/Day Centre
	D1 Non-residential Institutions: Libraries, Museums, and Galleries
	D1 Non-residential Institutions: Education
	D1 Non-residential Institutions: Primary Health Care Building
	D1 Non-residential Institutions: 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/m<sup>2</sup>]

	Actual	Notional
Heating	72.33	33.31
Cooling	11.18	21.51
Auxiliary	14.64	16.33
Lighting	22.48	42.74
Hot water	44.93	48.46
Equipment*	117.33	117.33
<b>TOTAL**</b>	<b>165.57</b>	<b>162.35</b>

\* 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/m<sup>2</sup>]

	Actual	Notional
Photovoltaic systems	0	0
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0

## Energy & CO<sub>2</sub> Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m <sup>2</sup> ]	459.59	404.56
Primary energy* [kWh/m <sup>2</sup> ]	291.36	340.95
Total emissions [kg/m <sup>2</sup> ]	50.4	58.4

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

## HVAC Systems Performance

System Type	Heat dem MJ/m <sup>2</sup>	Cool dem MJ/m <sup>2</sup>	Heat con kWh/m <sup>2</sup>	Cool con kWh/m <sup>2</sup>	Aux con kWh/m <sup>2</sup>	Heat SSEFF	Cool SSEER	Heat gen SEFF	Cool gen SEER
<b>[ST] No Heating or Cooling</b>									
<b>Actual</b>	217.1	0.4	0	0	0	0	0	0	0
<b>Notional</b>	118.5	3	0	0	0	0	0	----	----
<b>[ST] Split or multi-split system, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity</b>									
<b>Actual</b>	301.3	229.2	93.5	14.5	18.9	0.9	4.4	0.96	6.2
<b>Notional</b>	127	360.5	43.1	27.8	21.1	0.82	3.6	----	----

### Key to terms

Heat dem [MJ/m <sup>2</sup> ]	= Heating energy demand
Cool dem [MJ/m <sup>2</sup> ]	= Cooling energy demand
Heat con [kWh/m <sup>2</sup> ]	= Heating energy consumption
Cool con [kWh/m <sup>2</sup> ]	= Cooling energy consumption
Aux con [kWh/m <sup>2</sup> ]	= 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 Building Control Body is advised to give particular attention to items whose specifications are better than typically expected.

## Building fabric

Element	U <sub>i-Typ</sub>	U <sub>i-Min</sub>	Surface where the minimum value occurs*
Wall	0.23	0.3	"Block 1 - CIRCULATION 1_P_8"
Floor	0.2	0.25	"Block 2 - BAR & SERVERY_F_4"
Roof	0.15	0.18	"Block 1 - CIRCULATION 1_R_5"
Windows, roof windows, and rooflights	1.5	5.98	"Block 2 - BAR & SERVERY_G_11"
Personnel doors	1.5	3	"Block 2 - RESTAURANT_D_15"
Vehicle access & similar large doors	1.5	-	"No external vehicle access doors"
High usage entrance doors	1.5	-	"No external high usage entrance doors"
U <sub>i-Typ</sub> = Typical individual element U-values [W/(m <sup>2</sup> K)]		U <sub>i-Min</sub> = Minimum individual element U-values [W/(m <sup>2</sup> K)]	
* There might be more than one surface where the minimum U-value occurs.			

Air Permeability	Typical value	This building
m <sup>3</sup> /(h.m <sup>2</sup> ) at 50 Pa	5	10