

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 SSEF	Cool SSEER	Heat gen SEFF	Cool gen SEER	
[ST] Fan coil systems, [HS] District heating, [HFT] District Heating, [CFT] Electricity										
	Actual	69.4	34.5	20.7	2.7	13.4	0.93	3.53	1	4.5
	Notional	15.1	77.1	4.2	5.6	10.7	1	3.79	----	----
[ST] Single-duct VAV, [HS] District heating, [HFT] District Heating, [CFT] Electricity										
	Actual	120.9	16.5	39.5	1.5	39.3	0.85	3.1	1	4.4
	Notional	46	62.2	12.8	4.6	15.8	1	3.79	----	----
[ST] Single-duct VAV, [HS] District heating, [HFT] District Heating, [CFT] Electricity										
	Actual	138.2	51.9	49.6	5	34.5	0.77	2.9	1	4.43
	Notional	48.4	97.9	13.5	7.2	15.3	1	3.79	----	----
[ST] Constant volume system (fixed fresh air rate), [HS] District heating, [HFT] District Heating, [CFT] Electricity										
	Actual	15.7	3.4	3.9	0.4	8	1.13	2.46	1	4.6
	Notional	12.4	6.5	3.4	0.5	6	1	3.79	----	----
[ST] Fan coil systems, [HS] District heating, [HFT] District Heating, [CFT] Electricity										
	Actual	168.8	96.7	50.4	7.8	22.8	0.93	3.45	1	4.4
	Notional	62.1	99.6	17.2	7.3	21	1	3.79	----	----
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	0	0	0	0	0	3.24	2.13	3.48	3
	Notional	0	0	0	0	0	2.56	3.79	----	----
[ST] Single-duct VAV, [HS] District heating, [HFT] District Heating, [CFT] Electricity										
	Actual	0	87.5	0	8.4	27.1	0.77	2.88	1	4.4
	Notional	0	166.7	0	12.2	24.4	1	3.79	----	----
[ST] Fan coil systems, [HS] District heating, [HFT] District Heating, [CFT] Electricity										
	Actual	71.2	176.7	21.3	14.2	16.3	0.93	3.45	1	4.4
	Notional	11.6	166.5	3.2	12.2	14.8	1	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/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 SSEF	= 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	L5000063:Surf[0]
Floor	0.2	0.25	L500000D:Surf[0]
Roof	0.15	0.18	L9000001:Surf[5]
Windows, roof windows, and rooflights	1.5	2.31	L9000001:Surf[0]
Personnel doors	1.5	-	No Personnel doors in building
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 <sub>i-Typ</sub> = Typical individual element U-values [W/(m²K)]		U <sub>i-Min</sub> = Minimum individual element U-values [W/(m²K)]	
* There might be more than one surface where the minimum U-value occurs.			

Air Permeability	Typical value	This building
m³/(h.m²) at 50 Pa	5	10

Project name

220324 UCL\_IOE\_GREEN Model

As designed

Date: Thu Mar 24 11:10:59 2022

Administrative information

Building Details

Address: Address 1, City, Postcode

Certification tool

Calculation engine: Apache

Calculation engine version: 7.0.13

Interface to calculation engine: IES Virtual Environment

Interface to calculation engine version: 7.0.13

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

Certifier details

Name: Name

Telephone number: Phone

Address: Street Address, City, Postcode

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

The building does not comply with England Building Regulations Part L 2013

CO <sub>2</sub> emission rate from the notional building, kgCO <sub>2</sub> /m <sup>2</sup> .annum	22.4
Target CO <sub>2</sub> emission rate (TER), kgCO <sub>2</sub> /m <sup>2</sup> .annum	22.4
Building CO <sub>2</sub> emission rate (BER), kgCO <sub>2</sub> /m <sup>2</sup> .annum	53.3
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	L5000063:Surf[0]
Floor	0.25	0.25	0.25	L500000D:Surf[0]
Roof	0.25	0.18	0.18	L9000001:Surf[5]
Windows***, roof windows, and rooflights	2.2	2.31	2.31	L9000001:Surf[0]
Personnel doors	2.2	-	-	No Personnel doors in building
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 <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

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