

Project name

The Manchester College**As built****Date:** Wed Apr 20 16:42:43 2022**Administrative information****Building Details****Address:** City Campus Manchester, 60 Great Ducie Street ,
Manchester, M3 1PT**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:** Neil Hamilton**Telephone number:** 0113 393 3329**Address:** Zero Energy Design Ltd, Upperbank House,
Stoneythorpe, Leeds, LS18 4BN**Criterion 1: The calculated CO₂ emission rate for the building must not exceed the target**

CO ₂ emission rate from the notional building, kgCO ₂ /m ² .annum	21.2
Target CO ₂ emission rate (TER), kgCO ₂ /m ² .annum	21.2
Building CO ₂ emission rate (BER), kgCO ₂ /m ² .annum	14.2
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 _a -Limit	U _a -Calc	U _i -Calc	Surface where the maximum value occurs*
Wall**	0.35	0.15	0.15	0_000031:Surf[0]
Floor	0.25	0.15	0.15	0_00001E:Surf[1]
Roof	0.25	0.15	0.15	0_00001E:Surf[2]
Windows***, roof windows, and rooflights	2.2	1.18	1.27	0_000083:Surf[1]
Personnel doors	2.2	1.93	2.2	0_000077:Surf[0]
Vehicle access & similar large doors	1.5	-	-	No Vehicle access doors in building
High usage entrance doors	3.5	1.27	1.27	03000000:Surf[33]
U _a -Limit = Limiting area-weighted average U-values [W/(m ² K)] U _a -Calc = Calculated area-weighted average U-values [W/(m ² K)] U _i -Calc = Calculated maximum individual element U-values [W/(m ² 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 ³ /(h.m ²) at 50 Pa	10	4.55

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	YES
Whole building electric power factor achieved by power factor correction	>0.95

1- VAV - AHU06 (50pc LTHW)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1.66	5	0	1.18	0.76
Standard value	2.5*	3.2	N/A	1.6^	0.65
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. For types <=12 kW output, refer to EN 14825 for limiting standards.					
^ Limiting SFP may be extended by the amounts specified in the Non-Domestic Building Services Compliance Guide if the system includes additional components as listed in the Guide.					

2- LTHW Rad - AHU01-08

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.97	-	0	0	0.76
Standard value	0.91*	N/A	N/A	N/A	0.65
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
* 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.					

3- LTHW Rad - NV

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.97	-	0.19	0	-
Standard value	0.91*	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 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.					

4- VRF S2 - AHU01-08

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	7.09	3.86	0	0	0.76
Standard value	2.5*	2.6	N/A	N/A	0.65
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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

5- LTHW Rad - EF

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.97	-	0	0	-
Standard value	0.91*	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 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.					

6- VRF S1 - AHU01-08

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	6.99	3.64	0	0	0.76
Standard value	2.5*	2.6	N/A	N/A	0.65
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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

7- LTHW UFLR/VRF S1 - AHU01-08 MM

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.97	3.64	0	0	0.76
Standard value	0.91*	3.2	N/A	N/A	0.65
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
* 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.					

8- DX S27-32 - NV/EF

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	4.7	5.1	0	0	-
Standard value	2.5*	2.6	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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

9- LTHW UFLR - AHU01-08

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.97	-	0.5	0	0.76
Standard value	0.91*	N/A	N/A	N/A	0.65
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
* 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.					

10- VRF S1 - AHU01-08 MM

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	6.99	3.64	0	0	0.76
Standard value	2.5*	2.6	N/A	N/A	0.65
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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

11- LTHW Rad - SF

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.97	-	0	0	-
Standard value	0.91*	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 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.					

12- VAV - AHU08 (50pc LTHW)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1.59	4.5	0	1.29	0.75
Standard value	2.5*	3.2	N/A	1.6^	0.65
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. For types <=12 kW output, refer to EN 14825 for limiting standards.					
^ Limiting SFP may be extended by the amounts specified in the Non-Domestic Building Services Compliance Guide if the system includes additional components as listed in the Guide.					

13- LTHW UFLR - NV

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.97	-	0.49	0	-
Standard value	0.91*	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 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.					

14- VAV - AHU05 (50pc LTHW)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1.67	5.2	0	1.3	0.76
Standard value	2.5*	3.2	N/A	1.6^	0.65
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. For types <=12 kW output, refer to EN 14825 for limiting standards.					
^ Limiting SFP may be extended by the amounts specified in the Non-Domestic Building Services Compliance Guide if the system includes additional components as listed in the Guide.					

15- VAV - AHU07 (50pc LTHW)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1.66	5	0	1.11	0.76
Standard value	2.5*	3.2	N/A	1.6^	0.65
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. For types <=12 kW output, refer to EN 14825 for limiting standards.					
^ Limiting SFP may be extended by the amounts specified in the Non-Domestic Building Services Compliance Guide if the system includes additional components as listed in the Guide.					

16- VRF S6 - AHU01-08

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	7.09	3.86	0	0	0.76
Standard value	2.5*	2.6	N/A	N/A	0.65
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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

17- VRF S6 - AHU01-08 MM

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	7.09	3.86	0	0	0.76
Standard value	2.5*	2.6	N/A	N/A	0.65
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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

18- VRF S6 - SF MM

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	7.09	3.86	0	0	-
Standard value	2.5*	2.6	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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

19- DX S33-36 - NV/EF

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	4.7	5.1	0	0	-
Standard value	2.5*	2.6	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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

20- VRF S4 - AHU01-08

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	5.34	3.08	0	0	0.76
Standard value	2.5*	2.6	N/A	N/A	0.65
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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

21- VRF S5 - AHU01-08

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	6.41	4.25	0	0	0.76
Standard value	2.5*	2.6	N/A	N/A	0.65
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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

22- VRF S7 - AHU01-08

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	5.53	3.37	0	0	0.76
Standard value	2.5*	2.6	N/A	N/A	0.65
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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

23- DX S37-44 - NV/EF

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	4.7	5.1	0	0	-
Standard value	2.5*	2.6	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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

24- VRF S8 - AHU01-08

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	7	3.73	0	0	0.76
Standard value	2.5*	2.6	N/A	N/A	0.65
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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

25- VRF S9 - AHU01-08

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	5.34	3.08	0	0	0.76
Standard value	2.5*	2.6	N/A	N/A	0.65
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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

26- VRF S9 - AHU01-08 MM

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	5.34	3.08	0	0	0.76
Standard value	2.5*	2.6	N/A	N/A	0.65
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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

27- VRF S10 - AHU01-08

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	7	3.73	0	0	0.76
Standard value	2.5*	2.6	N/A	N/A	0.65
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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

28- VRF S11 - AHU01-08

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	6.99	3.64	0	0	0.76
Standard value	2.5*	2.6	N/A	N/A	0.65
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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

29- DX S37-44 - AHU01-08

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	4.7	5.1	0	0	0.76
Standard value	2.5*	2.6	N/A	N/A	0.65
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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

30- VRF S15 - SF

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	5.63	3.02	0	0	-
Standard value	2.5*	2.6	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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

31- VRF S15 - AHU01-08

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	5.63	3.02	0	0	0.76
Standard value	2.5*	2.6	N/A	N/A	0.65
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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

32- DX S45-48 - NV/EF

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	4.9	4.52	0	0	-
Standard value	2.5*	2.6	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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

33- VRF S12 - AHU01-08

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	7.09	3.86	0	0	0.76
Standard value	2.5*	2.6	N/A	N/A	0.65
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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

34- VRF S12 - NV

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	7.09	3.86	0	0	-
Standard value	2.5*	2.6	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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

35- VRF S24 - AHU01-08

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	6.99	3.64	0	0	0.76
Standard value	2.5*	2.6	N/A	N/A	0.65
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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

36- VRF S13 - AHU01-08

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	7.09	3.86	0	0	0.76
Standard value	2.5*	2.6	N/A	N/A	0.65
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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

37- VRF S14 - AHU01-08

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	5.34	3.08	0	0	0.76
Standard value	2.5*	2.6	N/A	N/A	0.65
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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

38- VRF S16 - AHU01-08

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	5.63	3.02	0	0	0.76
Standard value	2.5*	2.6	N/A	N/A	0.65
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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

39- DX S49-52 - NV/EF

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	4.9	4.52	0	0	-
Standard value	2.5*	2.6	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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

40- VRF S17 - AHU01-08

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	5.42	2.84	0	0	0.76
Standard value	2.5*	2.6	N/A	N/A	0.65
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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

41- VRF S18 - AHU01-08

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	7.09	3.86	0	0	0.76
Standard value	2.5*	2.6	N/A	N/A	0.65
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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

42- VRF S19 - AHU01-08

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	7	3.73	0	0	0.76
Standard value	2.5*	2.6	N/A	N/A	0.65
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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

43- LTHW Rad - MVHR01

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.97	-	0	0	0.83
Standard value	0.91*	N/A	N/A	N/A	0.5
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
* 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.					

44- VAV - MVHR01

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.97	4.5	0	1.41	0.83
Standard value	0.91*	3.2	N/A	1.6^	0.5
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
* 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.					
^ Limiting SFP may be extended by the amounts specified in the Non-Domestic Building Services Compliance Guide if the system includes additional components as listed in the Guide.					

45- VRF S19 - NV

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	7	3.73	0	0	-
Standard value	2.5*	2.6	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. For types <=12 kW output, refer to EN 14825 for limiting standards.					

"No HWS in project, or hot water is provided by HVAC system"

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
	Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1		
0.06 Music Technician		-	-	-	1.2	-	-	-	-	-	-	N/A
0.12 Band Room		-	-	-	1.2	-	-	-	-	-	-	N/A
0.13 Practice Room		-	-	-	1.2	-	-	-	-	-	-	N/A
0.14 Practice Room		-	-	-	1.2	-	-	-	-	-	-	N/A
0.15 Practice Room		-	-	-	1.2	-	-	-	-	-	-	N/A
0.16 Acc W/C		-	-	0.8	-	-	-	-	-	-	-	N/A
0.17 Female W/C		-	-	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	Zone	Standard
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1		
0.18 Male W/C	-	-	0.8	-	-	-	-	-	-	-	N/A
0.22 Quiet Room	-	-	-	1	-	-	-	-	-	-	N/A
0.23 Student Hub	-	-	-	1	-	-	-	-	-	-	N/A
0.24 1-2-1 Crisis Room/CAWS	-	-	-	1	-	-	-	-	-	-	N/A
0.25 1-2-1 Enrolment & Financial Ass.	-	-	-	1	-	-	-	-	-	-	N/A
0.26 1-2-1 CAWS	-	-	-	1	-	-	-	-	-	-	N/A
0.28 IT Hub	-	-	0.6	-	-	-	-	-	-	-	N/A
0.29 W/C	-	-	0.6	-	-	-	-	-	-	-	N/A
0.30 Front Reception & Display	-	-	-	1	-	-	-	-	-	-	N/A
0.31 Front Reception*	-	-	-	1	-	-	-	-	-	-	N/A
0.32 Reception & Box Office	-	-	-	1	-	-	-	-	-	-	N/A
0.33 Back Office	-	-	-	1	-	-	-	-	-	-	N/A
0.34 Cash Off.	-	-	-	1	-	-	-	-	-	-	N/A
0.35 Restaurant	-	-	-	1	-	-	-	-	-	-	N/A
0.36 W/C	-	-	0.9	-	-	-	-	-	-	-	N/A
0.37 W/C	-	-	0.9	-	-	-	-	-	-	-	N/A
0.38 Production Kitchen	-	0.9	-	-	-	-	-	-	0.6	-	N/A
0.39 Bakery Kitchen	-	0.9	-	-	-	-	-	-	0.6	-	N/A
0.42 Access W/C	-	-	0.9	-	-	-	-	-	-	-	N/A
0.43 Social*	-	-	-	1	-	-	-	-	-	-	N/A
0.44 IT Hub	-	-	0.9	-	-	-	-	-	-	-	N/A
0.45 Dressing Room	-	-	-	1	-	-	-	-	-	-	N/A
0.45a WC	-	-	0.9	-	-	-	-	-	-	-	N/A
0.46 Changing	-	-	-	1	-	-	-	-	-	-	N/A
0.47 Cln	-	-	0.9	-	-	-	-	-	-	-	N/A
0.47a Shower	-	-	0.9	-	-	-	-	-	-	-	N/A
0.47b 1-2-1	-	-	-	1	-	-	-	-	-	-	N/A
0.47b WC	-	-	0.9	-	-	-	-	-	-	-	N/A
0.50 Bar	-	-	-	1.2	-	-	-	-	-	-	N/A
0.54 Quick Change	-	-	0.9	-	-	-	-	-	-	-	N/A
0.55 Stage Kit.	-	-	0.9	-	-	-	-	-	-	-	N/A
0.56 Dressing Room 1	-	-	-	1.2	-	-	-	-	-	-	N/A
0.58 Cross Over	-	-	0.9	-	-	-	-	-	-	-	N/A
0.59 A. Ch Performing Arts	-	-	0.9	-	-	-	-	-	-	-	N/A
0.60 Scene Dock	-	-	-	1.2	-	-	-	-	-	-	N/A
0.61 Paint Cosh	-	-	-	1.2	-	-	-	-	-	-	N/A
0.62 Set & Prop Store	-	-	-	1.2	-	-	-	-	-	-	N/A
0.63 Machines Room	-	-	-	1.2	-	-	-	-	-	-	N/A
0.66 Technician Workshop	-	-	-	1.2	-	-	-	-	-	-	N/A
0.71 Foley Store	-	-	-	1.2	-	-	-	-	-	-	N/A
0.72 Make-Up	-	-	-	1.2	-	-	-	-	-	-	N/A
0.73 Band Room	-	-	-	1.2	-	-	-	-	-	-	N/A
0.74 Practice Room	-	-	-	1.2	-	-	-	-	-	-	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	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard	
0.75 Practice Room	-	-	-	1.2	-	-	-	-	-	-	N/A	
0.76 Practice Room	-	-	-	1.2	-	-	-	-	-	-	N/A	
0.77 Cln	-	-	0.8	-	-	-	-	-	-	-	N/A	
0.78 Changing Places HE	-	-	0.8	-	-	-	-	-	-	-	N/A	
0.79 Exam Store	-	-	-	1.2	-	-	-	-	-	-	N/A	
0.80 Music Technician	-	-	-	1.2	-	-	-	-	-	-	N/A	
0.81 First Aid	-	-	0.8	-	-	-	-	-	-	-	N/A	
0.82 W/C	-	-	0.8	-	-	-	-	-	-	-	N/A	
0.83 W/C	-	-	0.8	-	-	-	-	-	-	-	N/A	
0.88 W/C	-	-	0.8	-	-	-	-	-	-	-	N/A	
1.01 HE Reception	-	-	-	0.7	-	-	-	-	-	-	N/A	
1.02 Future U	-	-	-	0.7	-	-	-	-	-	-	N/A	
1.03 Future U	-	-	-	0.7	-	-	-	-	-	-	N/A	
1.04 Social Dining*	-	-	-	1	-	-	-	-	-	-	N/A	
1.04 Social Dining (landing)*	-	-	-	1	-	-	-	-	-	-	N/A	
1.05 Social/Work Area*	-	-	-	1	-	-	-	-	-	-	N/A	
1.06 Social Dining*	-	-	-	0.8	-	-	-	-	0	-	N/A	
1.07 Kitchen	-	0.8	-	-	-	-	-	-	0.6	-	N/A	
1.07 Kitchen Circulation	-	0.8	-	-	-	-	-	-	0	-	N/A	
1.07.1 Kitchen - Change	-	-	0.6	-	-	-	-	-	-	-	N/A	
1.07.1 Kitchen - Change	-	-	0.6	-	-	-	-	-	-	-	N/A	
1.07.10 Kitchen - WC	-	-	0.6	-	-	-	-	-	-	-	N/A	
1.07.8 Kitchen - Office	-	0.8	-	-	-	-	-	-	0	-	N/A	
1.08 W/C	-	-	-	1	-	-	-	-	-	-	N/A	
1.09 W/C	-	-	-	1	-	-	-	-	-	-	N/A	
1.10 Cln	-	-	0.6	-	-	-	-	-	-	-	N/A	
1.11 IT Hub	-	-	0.6	-	-	-	-	-	-	-	N/A	
1.12 W/C	-	-	0.6	-	-	-	-	-	-	-	N/A	
1.13 W/C	-	-	0.6	-	-	-	-	-	-	-	N/A	
1.14 LRC FE Learning Zone	-	-	-	1	-	-	-	-	-	-	N/A	
1.15 Quiet Study	-	-	-	1	-	-	-	-	-	-	N/A	
1.16 LRC Staff	-	-	-	1	-	-	-	-	-	-	N/A	
1.17 W/C	-	-	0.9	-	-	-	-	-	-	-	N/A	
1.18 Wash Room	-	-	0.9	-	-	-	-	-	-	-	N/A	
1.19 Wash Room	-	-	0.9	-	-	-	-	-	-	-	N/A	
1.20 Multi Faith	-	-	-	1	-	-	-	-	-	-	N/A	
1.21 Cln	-	-	0.9	-	-	-	-	-	-	-	N/A	
1.22 CLICK Studio	-	-	-	1	-	-	-	-	-	-	N/A	
1.22a CLICK repair	-	-	-	1	-	-	-	-	-	-	N/A	
1.23 W/C	-	-	0.9	-	-	-	-	-	-	-	N/A	
1.24 Group Study	-	-	-	1	-	-	-	-	-	-	N/A	
1.25 IT Hub	-	-	0.9	-	-	-	-	-	-	-	N/A	
1.27 Control Room	-	-	-	1	-	-	-	-	-	-	N/A	

Zone name	SFP [W/(I/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard	
1.29 1-2-1 Learning Resources	-	-	-	1	-	-	-	-	-	-	N/A	
1.31 Dressing Room 2	-	-	-	1	-	-	-	-	-	-	N/A	
1.31 W/C Dressing Room 2	-	-	0.9	-	-	-	-	-	-	-	N/A	
1.32 Green Room	-	-	-	1	-	-	-	-	-	-	N/A	
1.32a W/C	-	-	0.9	-	-	-	-	-	-	-	N/A	
1.32b W/C	-	-	0.9	-	-	-	-	-	-	-	N/A	
1.33 Shower	-	-	0.9	-	-	-	-	-	-	-	N/A	
1.34 Shower	-	-	0.9	-	-	-	-	-	-	-	N/A	
1.35 Shower	-	-	0.9	-	-	-	-	-	-	-	N/A	
1.36 Dressing Room 3	-	-	-	1	-	-	-	-	-	-	N/A	
1.36 W/C Dressing Room 3	-	-	0.9	-	-	-	-	-	-	-	N/A	
1.38 Shower	-	-	0.9	-	-	-	-	-	-	-	N/A	
1.39 Wardrobe Workshop	-	-	-	1.2	-	-	-	-	-	-	N/A	
1.40 Laundry	-	-	-	1.2	-	-	-	-	-	-	N/A	
1.41 Shower	-	-	0.9	-	-	-	-	-	-	-	N/A	
1.42 Edit Suite	-	-	-	1.2	-	-	-	-	-	-	N/A	
1.43 Edit Suite	-	-	-	1.2	-	-	-	-	-	-	N/A	
1.44 Edit Suite	-	-	-	1.2	-	-	-	-	-	-	N/A	
1.45 Edit Suite	-	-	-	1.2	-	-	-	-	-	-	N/A	
1.46 Edit Suite	-	-	-	1.2	-	-	-	-	-	-	N/A	
1.47 Film IT Suite	-	-	-	1.2	-	-	-	-	-	-	N/A	
1.48 Production Meeting	-	-	-	1.2	-	-	-	-	-	-	N/A	
1.49 Film IT Suite	-	-	-	1.2	-	-	-	-	-	-	N/A	
1.50 W/C	-	-	0.5	-	-	-	-	-	-	-	N/A	
1.51 W/C	-	-	0.5	-	-	-	-	-	-	-	N/A	
1.52 W/C	-	-	0.5	-	-	-	-	-	-	-	N/A	
1.53 W/C	-	-	0.5	-	-	-	-	-	-	-	N/A	
1.54 W/C	-	-	0.5	-	-	-	-	-	-	-	N/A	
1.55 Theory Room	-	-	-	1.2	-	-	-	-	-	-	N/A	
1.56 Staff	-	-	-	1.2	-	-	-	-	-	-	N/A	
1.57 HE Social*	-	-	-	0.7	-	-	-	-	-	-	N/A	
1.58 HE Union	-	-	-	0.7	-	-	-	-	-	-	N/A	
1.59 Future U	-	-	-	0.7	-	-	-	-	-	-	N/A	
1.61 Future U	-	-	-	0.7	-	-	-	-	-	-	N/A	
1.62 W/C	-	-	0.8	-	-	-	-	-	-	-	N/A	
1.63 W/C	-	-	0.8	-	-	-	-	-	-	-	N/A	
1.64 W/C	-	-	0.8	-	-	-	-	-	-	-	N/A	
1.65 W/C	-	-	0.8	-	-	-	-	-	-	-	N/A	
1.CD01 Circ. Entrance	-	-	-	0.7	-	-	-	-	-	-	N/A	
1.CD04 Lobby	-	-	-	1	-	-	-	-	-	-	N/A	
2.01 Mac Suite	-	-	-	0.7	-	-	-	-	-	-	N/A	
2.02 Mac Suite	-	-	-	0.7	-	-	-	-	-	-	N/A	
2.03 Wet Room	-	-	-	0.8	-	-	-	-	-	-	N/A	

Zone name	SFP [W/(I/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	1.9	1.6	0.5	1.1	0.5	1		
2.04 Screen Print	-	-	-	0.7	-	-	-	-	-	-	N/A
2.05 Operation Systems Lab	-	-	-	0.7	-	-	-	-	-	-	N/A
2.06 Software Dev/Systems Lab	-	-	-	0.7	-	-	-	-	-	-	N/A
2.07 1-2-1	-	-	-	1	-	-	-	-	-	-	N/A
2.08 1-2-1	-	-	-	1	-	-	-	-	-	-	N/A
2.09 Adult Maintenance Lab Lvl3	-	-	-	1	-	-	-	-	-	-	N/A
2.10 Adult Maintenance Lab	-	-	-	1	-	-	-	-	-	-	N/A
2.11 HE Admin	-	-	-	1	-	-	-	-	-	-	N/A
2.12 HE Admin	-	-	-	1	-	-	-	-	-	-	N/A
2.14 Changing Places FE	-	-	0.6	-	-	-	-	-	-	-	N/A
2.15 IT Hub	-	-	0.6	-	-	-	-	-	-	-	N/A
2.16 W/C	-	-	0.6	-	-	-	-	-	-	-	N/A
2.17 W/C	-	-	0.6	-	-	-	-	-	-	-	N/A
2.18 Edit Suite	-	-	-	1	-	-	-	-	-	-	N/A
2.19 Edit Suite	-	-	-	1	-	-	-	-	-	-	N/A
2.20 Edit Suite	-	-	-	1	-	-	-	-	-	-	N/A
2.21 Principalship Admin	-	-	-	1	-	-	-	-	-	-	N/A
2.22 Principalship	-	-	-	1	-	-	-	-	-	-	N/A
2.23 PC Suite/Theory	-	-	-	1	-	-	-	-	-	-	N/A
2.24 PC Suite	-	-	-	1	-	-	-	-	-	-	N/A
2.25 PC Suite/Theory	-	-	-	1	-	-	-	-	-	-	N/A
2.26 PC Suite	-	-	-	1	-	-	-	-	-	-	N/A
2.27 PC Suite/Theory	-	-	-	1	-	-	-	-	-	-	N/A
2.28 Staff	-	-	-	1	-	-	-	-	-	-	N/A
2.29 PC Suite	-	-	-	1	-	-	-	-	-	-	N/A
2.30 FE Maintenance Lab	-	-	-	1	-	-	-	-	-	-	N/A
2.31 PC/Games Design	-	-	-	1	-	-	-	-	-	-	N/A
2.32 PC/Games Design	-	-	-	1	-	-	-	-	-	-	N/A
2.33 W/C	-	-	0.9	-	-	-	-	-	-	-	N/A
2.34 W/C	-	-	0.9	-	-	-	-	-	-	-	N/A
2.35 W/C	-	-	0.9	-	-	-	-	-	-	-	N/A
2.36 Boardroom	-	-	-	1	-	-	-	-	-	-	N/A
2.37 Cln	-	-	0.9	-	-	-	-	-	-	-	N/A
2.38 IT Hub	-	-	0.9	-	-	-	-	-	-	-	N/A
2.39 PC Suite	-	-	-	1	-	-	-	-	-	-	N/A
2.40 PC Suite	-	-	-	1	-	-	-	-	-	-	N/A
2.41 Mac Suite	-	-	-	1	-	-	-	-	-	-	N/A
2.42 1-2-1	-	-	-	1	-	-	-	-	-	-	N/A
2.44 HE LRC & Social*	-	-	-	1.2	-	-	-	-	-	-	N/A
2.45 Meeting Rm	-	-	-	1.2	-	-	-	-	-	-	N/A
2.46 HE Kitchenette	-	-	-	1.2	-	-	-	-	-	-	N/A
2.47 Meeting Rm	-	-	-	1.2	-	-	-	-	-	-	N/A
2.48 Meeting Rm	-	-	-	1.2	-	-	-	-	-	-	N/A

Zone name	SFP [W/(I/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard	
2.49 Meeting Rm	-	-	-	1.2	-	-	-	-	-	-	N/A	
2.50 HE LRC & Social	-	-	-	1.2	-	-	-	-	-	-	N/A	
2.53 Radio Studio	-	-	-	1.3	-	-	-	-	-	-	N/A	
2.54 Mac Suite	-	-	-	1.2	-	-	-	-	-	-	N/A	
2.55 TV & Film	-	-	-	1.2	-	-	-	-	-	-	N/A	
2.56 Mac Suite	-	-	-	1.2	-	-	-	-	-	-	N/A	
2.57 Mac Suite	-	-	-	1.2	-	-	-	-	-	-	N/A	
2.58 Mac Suite	-	-	-	1.2	-	-	-	-	-	-	N/A	
2.59 3D Games	-	-	-	1.2	-	-	-	-	-	-	N/A	
2.60 CIn	-	-	0.5	-	-	-	-	-	-	-	N/A	
2.61 W/C	-	-	0.5	-	-	-	-	-	-	-	N/A	
2.62 W/C	-	-	0.5	-	-	-	-	-	-	-	N/A	
2.63 W/C	-	-	0.5	-	-	-	-	-	-	-	N/A	
2.64 W/C	-	-	0.5	-	-	-	-	-	-	-	N/A	
2.65 W/C	-	-	0.5	-	-	-	-	-	-	-	N/A	
2.66 Staff	-	-	-	1.2	-	-	-	-	-	-	N/A	
2.67 W/C	-	-	0.5	-	-	-	-	-	-	-	N/A	
2.68 Seminar Room	-	-	-	1.2	-	-	-	-	-	-	N/A	
2.69 Security	-	-	-	1.2	-	-	-	-	-	-	N/A	
2.70 Security Operations	-	-	-	1.2	-	-	-	-	-	-	N/A	
2.71 Reprographics	-	-	-	0.7	-	-	-	-	-	-	N/A	
2.72 CCNA	-	-	-	0.7	-	-	-	-	-	-	N/A	
2.73 CCNA Patch Rm	-	-	-	0.7	-	-	-	-	-	-	N/A	
2.74 Theory Room	-	-	-	0.7	-	-	-	-	-	-	N/A	
2.75 W/C	-	-	0.8	-	-	-	-	-	-	-	N/A	
2.76 W/C	-	-	0.8	-	-	-	-	-	-	-	N/A	
2.77 W/C	-	-	0.8	-	-	-	-	-	-	-	N/A	
3.01 Special Effects Studio	-	0.8	-	-	-	-	-	-	-	-	N/A	
3.02 Encapsulation	-	0.8	-	-	-	-	-	-	-	-	N/A	
3.03 Fibre Glass Workshop	-	0.8	-	-	-	-	-	-	-	-	N/A	
3.04 Store	-	-	0.8	-	-	-	-	-	-	-	N/A	
3.05 Spray Booth	-	0.8	-	-	-	-	-	-	-	-	N/A	
3.06 1-2-1	-	-	-	0.7	-	-	-	-	-	-	N/A	
3.07 Media Makeup	-	-	-	0.7	-	-	-	-	-	-	N/A	
3.08 Photography Studio	-	-	-	0.7	-	-	-	-	-	-	N/A	
3.09 Darkrm - Processing	-	-	-	1	-	-	-	-	-	-	N/A	
3.09a Light Trap	-	-	-	1	-	-	-	-	-	-	N/A	
3.10 Darkrm - Wet	-	-	-	1	-	-	-	-	-	-	N/A	
3.10a Darkrm - Colour	-	-	-	1	-	-	-	-	-	-	N/A	
3.11 Photography Studio	-	-	-	1	-	-	-	-	-	-	N/A	
3.12 Staff/Kitchen	-	-	-	1	-	-	-	-	-	-	N/A	
3.13 Photography Store	-	-	-	1	-	-	-	-	-	-	N/A	
3.14 IT Hub	-	-	0.6	-	-	-	-	-	-	-	N/A	

Zone name	SFP [W/(I/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	1.9	1.6	0.5	1.1	0.5	1		
3.15 W/C	-	-	0.6	-	-	-	-	-	-	-	N/A
3.16 W/C	-	-	0.6	-	-	-	-	-	-	-	N/A
3.17 Digital Workshop	-	-	-	1	-	-	-	-	-	-	N/A
3.18 Textile Print Studio	-	-	-	1	-	-	-	-	-	-	N/A
3.20 Print Making Studio	-	-	-	1	-	-	-	-	-	-	N/A
3.21 Jewellery Workshop	-	-	-	1	-	-	-	-	-	-	N/A
3.22 Laser Cutting	-	-	-	1	-	-	-	-	-	-	N/A
3.23 Plastics Rm	-	-	-	1	-	-	-	-	-	-	N/A
3.24 Ceramics Studio	-	-	-	1	-	-	-	-	-	-	N/A
3.27 Art Technician	-	-	-	1	-	-	-	-	-	-	N/A
3.28 Garment Construction Studio	-	-	-	1	-	-	-	-	-	-	N/A
3.29 Fashion & Pattern Cutting	-	-	-	1	-	-	-	-	-	-	N/A
3.30 3D Workshop	-	-	-	1	-	-	-	-	-	-	N/A
3.32 W/C	-	-	0.9	-	-	-	-	-	-	-	N/A
3.33 W/C	-	-	0.9	-	-	-	-	-	-	-	N/A
3.34 W/C	-	-	0.9	-	-	-	-	-	-	-	N/A
3.35 Art Studios & Drawing Room	-	-	-	1.2	-	-	-	-	-	-	N/A
3.36 Art Technician	-	-	-	1.2	-	-	-	-	-	-	N/A
3.37 Cln	-	-	0.9	-	-	-	-	-	-	-	N/A
3.38 IT Hub	-	-	0.9	-	-	-	-	-	-	-	N/A
3.39 DJ Classroom	-	-	-	1	-	-	-	-	-	-	N/A
3.40 DJ Booth	-	-	-	1	-	-	-	-	-	-	N/A
3.41 DJ Booth	-	-	-	1	-	-	-	-	-	-	N/A
3.42 DJ Booth	-	-	-	1	-	-	-	-	-	-	N/A
3.43 DJ Booth	-	-	-	1	-	-	-	-	-	-	N/A
3.44 Mac Suite	-	-	-	1	-	-	-	-	-	-	N/A
3.45 Mac Suite	-	-	-	1.2	-	-	-	-	-	-	N/A
3.46 HE Art Studios & Digi	-	-	-	1.2	-	-	-	-	-	-	N/A
3.47 Mac Suite	-	-	-	1.2	-	-	-	-	-	-	N/A
3.48 Mac Suite	-	-	-	1.2	-	-	-	-	-	-	N/A
3.49 Cln	-	-	0.5	-	-	-	-	-	-	-	N/A
3.50 W/C	-	-	0.5	-	-	-	-	-	-	-	N/A
3.51 W/C	-	-	0.5	-	-	-	-	-	-	-	N/A
3.52 W/C	-	-	0.5	-	-	-	-	-	-	-	N/A
3.53 W/C	-	-	0.5	-	-	-	-	-	-	-	N/A
3.54 W/C	-	-	0.5	-	-	-	-	-	-	-	N/A
3.55 Staff	-	-	-	1.2	-	-	-	-	-	-	N/A
3.56 W/C	-	-	0.5	-	-	-	-	-	-	-	N/A
3.57 Training Salon - Beauty	-	-	-	1.2	-	-	-	-	-	-	N/A
3.58 Treatment Room	-	-	-	1.2	-	-	-	-	-	-	N/A
3.59 Laser Room	-	-	-	1.2	-	-	-	-	-	-	N/A
3.60 Mac Suite	-	-	-	1.2	-	-	-	-	-	-	N/A
3.61 General Teaching	-	-	-	1.2	-	-	-	-	-	-	N/A

Zone name	SFP [W/(I/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	1.9	1.6	0.5	1.1	0.5	1		
3.62 Events Teaching	-	-	-	1.2	-	-	-	-	-	-	N/A
3.63 Media Makeup - Hair	-	-	-	0.7	-	-	-	-	-	-	N/A
3.64 Photo	-	-	-	0.7	-	-	-	-	-	-	N/A
3.65 Studio	-	-	-	0.7	-	-	-	-	-	-	N/A
3.66 General Teaching	-	-	-	0.7	-	-	-	-	-	-	N/A
3.67 Dispensary	-	-	-	0.7	-	-	-	-	-	-	N/A
3.68 Shower	-	-	0.8	-	-	-	-	-	-	-	N/A
3.69 W/C	-	-	0.8	-	-	-	-	-	-	-	N/A
3.70 W/C	-	-	0.8	-	-	-	-	-	-	-	N/A
4.01 Rehearsal Rm - Flexible	-	-	-	0.7	-	-	-	-	-	-	N/A
4.02 Rehearsal Rm - Large	-	-	-	0.7	-	-	-	-	-	-	N/A
4.03 Rehearsal Rm - Flexible	-	-	-	0.7	-	-	-	-	-	-	N/A
4.04 Rehearsal Rm - Flexible	-	-	-	0.7	-	-	-	-	-	-	N/A
4.05 Rehearsal Rm - Flexible	-	-	-	0.7	-	-	-	-	-	-	N/A
4.06 Rehearsal Rm - Flexible	-	-	-	1	-	-	-	-	-	-	N/A
4.07 Rehearsal Rm - Flexible	-	-	-	1	-	-	-	-	-	-	N/A
4.08 Changing	-	-	-	1	-	-	-	-	-	-	N/A
4.08 Shower	-	-	0.6	-	-	-	-	-	-	-	N/A
4.09 Changing	-	-	-	1	-	-	-	-	-	-	N/A
4.09 Shower	-	-	0.6	-	-	-	-	-	-	-	N/A
4.10 IT Hub	-	-	0.6	-	-	-	-	-	-	-	N/A
4.11 D.C. W/C Shower	-	-	0.6	-	-	-	-	-	-	-	N/A
4.12 Assessment Studio	-	-	-	1	-	-	-	-	-	-	N/A
4.13 Rehearsal Rm - Flexible	-	-	-	1	-	-	-	-	-	-	N/A
4.14 Rehearsal Rm - Flexible	-	-	-	1	-	-	-	-	-	-	N/A
4.15 Rehearsal Rm - Flexible	-	-	-	1	-	-	-	-	-	-	N/A
4.16 Staff	-	-	-	1	-	-	-	-	-	-	N/A
4.17 Stu Ex.	-	-	-	1	-	-	-	-	-	-	N/A
4.18 Singing	-	-	-	1	-	-	-	-	-	-	N/A
4.19 Rehearsal Rm - Flexible	-	-	-	1	-	-	-	-	-	-	N/A
4.20 Ensemble Singing	-	-	-	1	-	-	-	-	-	-	N/A
4.21 Store	-	-	-	1	-	-	-	-	-	-	N/A
4.22 Rehearsal Rm - Flexible	-	-	-	1	-	-	-	-	-	-	N/A
4.23 W/C	-	-	0.9	-	-	-	-	-	-	-	N/A
4.24 W/C	-	-	0.9	-	-	-	-	-	-	-	N/A
4.25 W/C	-	-	0.9	-	-	-	-	-	-	-	N/A
4.26 Cln	-	-	0.9	-	-	-	-	-	-	-	N/A
4.27 IT Hub	-	-	0.9	-	-	-	-	-	-	-	N/A
4.28 Computer Suite	-	-	-	1.2	-	-	-	-	-	-	N/A
4.29 General Teaching	-	-	-	1.2	-	-	-	-	-	-	N/A
4.30 General Teaching	-	-	-	1.2	-	-	-	-	-	-	N/A
4.31 General Teaching	-	-	-	1.2	-	-	-	-	-	-	N/A
4.32 Rehearsal Rm - Flexible	-	-	-	1.2	-	-	-	-	-	-	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	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard	
4.33 Ensemble Singing	-	-	-	1.2	-	-	-	-	-	-	N/A	
4.34 W/C	-	-	0.5	-	-	-	-	-	-	-	N/A	
4.35 W/C	-	-	0.5	-	-	-	-	-	-	-	N/A	
4.36 W/C	-	-	0.5	-	-	-	-	-	-	-	N/A	
4.38 A. Ch. W/C Shower	-	-	0.5	-	-	-	-	-	-	-	N/A	
4.39 CIn	-	-	0.5	-	-	-	-	-	-	-	N/A	
4.40 Ensemble Singing	-	-	-	1.2	-	-	-	-	-	-	N/A	
4.41 Changing	-	-	-	1.2	-	-	-	-	-	-	N/A	
4.41 Shower	-	-	0.5	-	-	-	-	-	-	-	N/A	
4.42 Solo Singing	-	-	-	1.2	-	-	-	-	-	-	N/A	
4.43 Changing	-	-	-	1.2	-	-	-	-	-	-	N/A	
4.43 Shower	-	-	0.5	-	-	-	-	-	-	-	N/A	
4.44 Drama	-	-	-	1.2	-	-	-	-	-	-	N/A	
4.45 Solo Singing	-	-	-	1.2	-	-	-	-	-	-	N/A	
4.46 Solo Singing	-	-	-	1.2	-	-	-	-	-	-	N/A	
4.47 Store	-	-	-	1.2	-	-	-	-	-	-	N/A	
4.48 Staff	-	-	-	1.2	-	-	-	-	-	-	N/A	
4.49 Rehearsal Rm - Drama	-	-	-	0.7	-	-	-	-	-	-	N/A	
4.50 Rehearsal Rm - Film	-	-	-	0.7	-	-	-	-	-	-	N/A	
4.51 1-2-1	-	-	-	1	-	-	-	-	-	-	N/A	
4.52 Rehearsal Rm - Flexible	-	-	-	0.7	-	-	-	-	-	-	N/A	
4.56 W/C	-	-	0.8	-	-	-	-	-	-	-	N/A	
4.57 W/C	-	-	0.8	-	-	-	-	-	-	-	N/A	
4.58 W/C	-	-	0.8	-	-	-	-	-	-	-	N/A	

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
0.01 Studio L		210	-	-	233
0.02 LiveRoom L		270	-	-	144
0.03 Studio S		283	-	-	118
0.04 LiveRoom S		301	-	-	79
0.05 Studio S		90	-	-	350
0.06 Music Technician		188	-	-	88
0.07 Store		135	-	-	21
0.08 Sound Studio		310	-	-	72
0.09 TV Studio - FE		236	-	-	241
0.10 Control Room		90	-	-	289
0.11 LiveRoom - S		90	-	-	238
0.12 Band Room		90	-	-	270
0.13 Practice Room		90	-	-	149
0.14 Practice Room		90	-	-	148
0.15 Practice Room		90	-	-	148

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
0.16 Acc W/C		-	397	-	23
0.16b Chair Store		90	-	-	18
0.17 Female W/C		-	159	-	215
0.18 Male W/C		-	207	-	141
0.19 Control Room		90	-	-	174
0.20 LiveRoom - L		90	-	-	275
0.21 Control Room		90	-	-	183
0.22 Quiet Room		110	-	-	176
0.23 Student Hub		-	90	-	305
0.24 1-2-1 Crisis Room/CAWS		168	-	-	71
0.25 1-2-1 Enrolment & Financial Ass.		164	-	-	73
0.26 1-2-1 CAWS		158	-	-	74
0.27 Social*		-	155	-	1172
0.28 IT Hub		102	-	-	105
0.29 W/C		-	186	-	42
0.30 Front Reception & Display		-	460	-	112
0.31 Front Reception*		-	455	90	63
0.32 Reception & Box Office		-	569	90	25
0.33 Back Office		310	-	-	44
0.34 Cash Off.		150	-	-	67
0.35 Restaurant		-	235	-	612
0.36 W/C		-	235	-	37
0.37 W/C		-	174	-	36
0.38 Production Kitchen		-	90	-	1161
0.39 Bakery Kitchen		-	90	-	753
0.40 Kitchen Freezer/Chiller		284	-	-	30
0.41 LV		133	-	-	83
0.42 Access W/C		-	234	-	41
0.43 Social*		-	60	-	1333
0.44 IT Hub		114	-	-	75
0.45 Dressing Room		134	-	-	113
0.45a WC		-	235	-	31
0.46 Changing		136	-	-	92
0.47 Cln		70	-	-	37
0.47a Shower		-	69	-	74
0.47b 1-2-1		146	-	-	73
0.47b WC		-	235	-	26
0.48 Lobby Performing Arts		-	319	-	40
0.49 Studio Theatre		90	-	-	938
0.50 Bar		-	254	-	227
0.51 Lobby		-	187	-	54
0.51 Lobby Circ.		-	127	-	125
0.52 Lobby		-	183	-	56

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
0.52 Lobby Circ.		-	125	-	130
0.53 Main Theatre		90	-	-	1742
0.54 Quick Change		91	-	-	59
0.55 Stage Kit.		119	-	-	40
0.56 Dressing Room 1		90	-	-	242
0.57 Lobby		-	269	-	42
0.58 Cross Over		-	206	-	134
0.59 A. Ch Performing Arts		-	286	-	37
0.60 Scene Dock		127	-	-	329
0.61 Paint Cosh		122	-	-	50
0.62 Set & Prop Store		114	-	-	175
0.63 Machines Room		140	-	-	442
0.64 Store B.O.H		133	-	-	22
0.65 Film Studio		90	-	-	2844
0.66 Technician Workshop		119	-	-	523
0.67 Teaching Studio		90	-	-	1069
0.67 Water		111	-	-	137
0.68 Store		143	-	-	20
0.69 Foley Suite		257	-	-	114
0.70 Post Sound		237	-	-	203
0.71 Foley Store		141	-	-	30
0.72 Make-Up		90	-	-	124
0.73 Band Room		212	-	-	258
0.74 Practice Room		90	-	-	346
0.75 Practice Room		90	-	-	401
0.76 Practice Room		253	-	-	142
0.77 Cln		131	-	-	51
0.78 Changing Places HE		-	203	-	72
0.79 Exam Store		161	-	-	28
0.80 Music Technician		230	-	-	59
0.81 First Aid		142	-	-	131
0.82 W/C		-	250	-	39
0.83 W/C		-	221	-	44
0.88 W/C		-	361	-	23
0.CD01 Lobby		-	283	-	33
0.CD02 Circ.		-	306	-	181
0.CD03 Lobby		-	323	-	47
0.CD04 Lobby		-	328	-	46
0.CD05 Lobby		-	280	-	86
0.CD06 Lobby		-	418	-	24
0.CD07 Lobby		-	309	-	44
0.CD08 Circ.		-	240	-	252
0.CD08 Lobby		-	394	-	22

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
0.CD09 Lobby		-	275	-	38
0.CD10 Lobby		-	260	-	50
0.CD11 Circ.		-	170	-	619
0.CD12 Lobby		-	225	-	120
0.CD13 Lobby		-	229	-	89
0.CD14 Escape		-	242	-	76
0.CD15 Circ.		-	275	-	27
0.CD16 Circ.		-	250	-	104
0.CD17 Circ.		-	277	-	52
0.CD18 Circ.		-	288	-	52
0.CD19 Circ.		-	256	-	133
0.CD20 Circ.		-	258	-	136
0.CD21 Stair		-	346	-	19
0.CD22 Lobby		-	266	-	21
0.CD23 Circ.		-	305	-	101
0.CD24 Lobby		-	308	-	27
0.CD25 Lobby		-	320	-	27
0.CD26 Lobby		-	280	-	57
0.CD27 Lobby		-	241	-	64
0.EX01 DNO SubStation		96	-	-	125
0.EX02 Private Transformer		80	-	-	119
0.ST01 Stair HE1		-	181	-	81
0.ST02 Stair FE1		-	164	-	129
0.ST03 Stair FE2		-	176	-	103
0.ST04 Stair HE2		-	178	-	84
0.ST05 Theatre Stair		-	289	-	37
1.01 HE Reception		-	90	90	65
1.02 Future U		170	-	-	72
1.03 Future U		171	-	-	71
1.04 Social Dining*		-	69	-	879
1.04 Social Dining (landing)*		-	70	-	682
1.05 Social/Work Area*		-	71	-	1299
1.06 Social Dining*		-	213	-	1018
1.07 Kitchen		-	157	-	1304
1.07 Kitchen Circulation		-	187	-	319
1.07.1 Kitchen - Change		79	-	-	59
1.07.1 Kitchen - Change		79	-	-	60
1.07.10 Kitchen - WC		-	231	-	40
1.07.2 Kitchen - Chiller		44	-	-	276
1.07.4 Kitchen - COSHH		91	-	-	56
1.07.6 Kitchen - Food Waste		93	-	-	54
1.07.8 Kitchen - Office		86	-	-	73
1.07.9 Kitchen - Dry Store		58	-	-	152

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
1.08 W/C		-	213	-	99
1.09 W/C		-	205	-	103
1.10 Cln		73	-	-	23
1.11 IT Hub		105	-	-	70
1.12 W/C		-	163	-	41
1.13 W/C		-	253	-	40
1.14 LRC FE Learning Zone		129	-	-	1331
1.15 Quiet Study		132	-	-	379
1.16 LRC Staff		166	-	-	87
1.17 W/C		-	139	-	44
1.18 Wash Room		-	190	-	33
1.19 Wash Room		-	190	-	33
1.20 Multi Faith		64	-	-	218
1.21 Cln		77	-	-	35
1.22 CLICK Studio		141	-	-	341
1.22a CLICK repair		157	-	-	105
1.23 W/C		-	258	-	38
1.24 Group Study		90	-	-	423
1.25 IT Hub		104	-	-	70
1.26 Lobby		-	226	-	43
1.27 Control Room		121	-	-	125
1.28 Store		75	-	-	37
1.29 1-2-1 Learning Resources		193	-	-	80
1.30 Control & Dimmer Room		90	-	-	581
1.31 Dressing Room 2		112	-	-	233
1.31 W/C Dressing Room 2		-	491	-	27
1.32 Green Room		-	365	-	79
1.32a W/C		-	144	-	45
1.32b W/C		-	144	-	44
1.33 Shower		-	69	-	69
1.34 Shower		-	69	-	68
1.35 Shower		-	69	-	68
1.36 Dressing Room 3		116	-	-	224
1.36 W/C Dressing Room 3		-	496	-	28
1.37 Store		39	-	-	23
1.38 Shower		-	83	-	80
1.39 Wardrobe Workshop		131	-	-	445
1.40 Laundry		-	304	-	75
1.41 Shower		-	92	-	90
1.42 Edit Suite		127	-	-	54
1.43 Edit Suite		141	-	-	51
1.44 Edit Suite		138	-	-	53
1.45 Edit Suite		127	-	-	54

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
1.46 Edit Suite		128	-	-	58
1.47 Film IT Suite		134	-	-	462
1.48 Production Meeting		177	-	-	153
1.49 Film IT Suite		106	-	-	354
1.50 W/C		-	247	-	43
1.51 W/C		-	197	-	38
1.52 W/C		-	158	-	42
1.53 W/C		-	158	-	42
1.54 W/C		-	197	-	40
1.55 Theory Room		143	-	-	326
1.56 Staff		182	-	-	106
1.57 HE Social*		-	232	-	579
1.58 HE Union		-	252	-	72
1.59 Future U		120	-	-	261
1.60 Kit. Store		82	-	-	21
1.61 Future U		176	-	-	66
1.62 W/C		-	173	-	44
1.63 W/C		-	168	-	64
1.64 W/C		-	244	-	40
1.65 W/C		-	166	-	46
1.CD01 Circ. Entrance		-	238	-	599
1.CD02 Circ. Atrium		-	245	-	273
1.CD02 Circ. Lift		-	90	-	103
1.CD04 Lobby		-	296	-	52
1.CD05 Circ.		-	216	-	418
1.CD06 Circ.		-	231	-	68
1.CD07 Lobby		-	291	-	110
1.CD08 Circ.		-	187	-	120
1.CD09 Circ.		-	281	-	104
1.CD10 Circ.		-	265	-	298
1.CD11 Lobby		-	244	-	93
1.CD12 Lobby		-	285	-	76
1.ST01 Stair HE1		-	282	-	58
1.ST02 Stair FE1		-	260	-	68
1.ST03 Stair FE2		-	299	-	51
1.ST04 Stair HE2		-	275	-	63
1.ST05 Theatre Stair		-	90	-	51
2.01 Mac Suite		140	-	-	323
2.02 Mac Suite		140	-	-	314
2.03 Wet Room		90	-	-	124
2.04 Screen Print		90	-	-	131
2.05 Operation Systems Lab		137	-	-	888
2.06 Software Dev/Systems Lab		140	-	-	396

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
2.07 1-2-1		227	-	-	60
2.08 1-2-1		242	-	-	54
2.09 Adult Maintenance Lab Lvl3		150	-	-	644
2.10 Adult Maintenance Lab		147	-	-	672
2.11 HE Admin		108	-	-	568
2.12 HE Admin		90	-	-	149
2.14 Changing Places FE		122	-	-	119
2.15 IT Hub		105	-	-	70
2.16 W/C		-	139	-	47
2.17 W/C		-	254	-	39
2.18 Edit Suite		101	-	-	64
2.19 Edit Suite		126	-	-	58
2.20 Edit Suite		128	-	-	57
2.21 Principalship Admin		160	-	-	172
2.22 Principalship		143	-	-	258
2.23 PC Suite/Theory		143	-	-	267
2.24 PC Suite		137	-	-	261
2.25 PC Suite/Theory		143	-	-	265
2.26 PC Suite		139	-	-	272
2.27 PC Suite/Theory		143	-	-	265
2.28 Staff		157	-	-	179
2.29 PC Suite		134	-	-	295
2.30 FE Maintenance Lab		139	-	-	570
2.31 PC/Games Design		140	-	-	311
2.32 PC/Games Design		138	-	-	354
2.33 W/C		-	219	-	44
2.34 W/C		-	233	-	103
2.35 W/C		-	191	-	120
2.36 Boardroom		156	-	-	165
2.37 Cln		70	-	-	29
2.38 IT Hub		104	-	-	84
2.39 PC Suite		134	-	-	268
2.40 PC Suite		143	-	-	269
2.41 Mac Suite		143	-	-	269
2.42 1-2-1		147	-	-	68
2.43 Store		135	-	-	42
2.44 HE LRC & Social*		-	90	-	756
2.45 Meeting Rm		272	-	-	41
2.46 HE Kitchenette		-	104	-	72
2.47 Meeting Rm		263	-	-	45
2.48 Meeting Rm		201	-	-	69
2.49 Meeting Rm		201	-	-	69
2.50 HE LRC & Social		-	327	-	105

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
2.53 Radio Studio		90	-	-	160
2.54 Mac Suite		143	-	-	269
2.55 TV & Film		90	-	-	432
2.56 Mac Suite		143	-	-	269
2.57 Mac Suite		149	-	-	208
2.58 Mac Suite		142	-	-	275
2.59 3D Games		90	-	-	473
2.60 Cln		70	-	-	50
2.61 W/C		-	221	-	46
2.62 W/C		-	173	-	41
2.63 W/C		-	173	-	36
2.64 W/C		-	173	-	36
2.65 W/C		-	173	-	44
2.66 Staff		164	-	-	169
2.67 W/C		-	166	-	44
2.68 Seminar Room		90	-	-	437
2.69 Security		136	-	-	361
2.70 Security Operations		90	-	-	170
2.71 Reprographics		162	-	-	138
2.72 CCNA		137	-	-	331
2.73 CCNA Patch Rm		90	-	-	123
2.74 Theory Room		148	-	-	218
2.75 W/C		-	275	-	25
2.76 W/C		-	268	-	37
2.77 W/C		-	259	-	38
2.CD01 Circ.		-	188	-	584
2.CD01 Circ. (HE LRC Lobby)		-	242	-	52
2.CD04 Circ.		-	270	-	130
2.CD05 Lobby		-	225	-	43
2.CD06 Circ.		-	274	-	123
2.CD07 Circ.		-	248	-	388
2.CD08 Lobby		-	254	-	88
2.CD09 Circ.		-	317	-	240
2.CD10 Lobby		-	243	-	96
2.CD11 Lobby		-	291	-	69
2.ST01 Stair HE1		-	301	-	50
2.ST02 Stair FE1		-	245	-	74
2.ST03 Stair FE2		-	288	-	56
2.ST04 Stair HE2		-	286	-	61
3.01 Special Effects Studio		152	-	-	553
3.02 Encapsulation		155	-	-	182
3.03 Fibre Glass Workshop		154	-	-	186
3.04 Store		90	-	-	57

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
3.05 Spray Booth		189	-	-	70
3.06 1-2-1		179	-	-	81
3.07 Media Makeup		152	-	-	569
3.08 Photography Studio		90	-	-	464
3.09 Darkrm - Processing		90	-	-	164
3.09a Light Trap		90	-	-	106
3.10 Darkrm - Wet		90	-	-	253
3.10a Darkrm - Colour		90	-	-	123
3.11 Photography Studio		90	-	-	409
3.12 Staff/Kitchen		90	-	-	746
3.13 Photography Store		72	-	-	24
3.14 IT Hub		105	-	-	70
3.15 W/C		-	139	-	49
3.16 W/C		-	254	-	39
3.17 Digital Workshop		139	-	-	260
3.18 Textile Print Studio		90	-	-	785
3.19 Storage		93	-	-	54
3.20 Print Making Studio		141	-	-	492
3.21 Jewellery Workshop		136	-	-	462
3.22 Laser Cutting		90	-	-	155
3.23 Plastics Rm		90	-	-	121
3.24 Ceramics Studio		149	-	-	313
3.25 Cold Storage		90	-	-	19
3.26 Kiln Room		90	-	-	110
3.27 Art Technician		196	-	-	82
3.28 Garment Construction Studio		139	-	-	520
3.29 Fashion & Pattern Cutting		141	-	-	350
3.30 3D Workshop		143	-	-	484
3.31 Storage		126	-	-	45
3.32 W/C		-	257	-	39
3.33 W/C		-	230	-	105
3.34 W/C		-	191	-	120
3.35 Art Studios & Drawing Room		176	-	-	3597
3.36 Art Technician		171	-	-	120
3.37 Cln		70	-	-	29
3.38 IT Hub		102	-	-	87
3.39 DJ Classroom		90	-	-	226
3.40 DJ Booth		90	-	-	80
3.41 DJ Booth		90	-	-	79
3.42 DJ Booth		90	-	-	78
3.43 DJ Booth		90	-	-	78
3.44 Mac Suite		143	-	-	269
3.45 Mac Suite		143	-	-	269

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name	Standard value	Luminaire	Lamp	Display lamp	
		60	60	22	
3.46 HE Art Studios & Digi		186	-	-	1776
3.47 Mac Suite		143	-	-	269
3.48 Mac Suite		142	-	-	275
3.49 Cln		70	-	-	50
3.50 W/C		-	247	-	43
3.51 W/C		-	173	-	41
3.52 W/C		-	173	-	36
3.53 W/C		-	173	-	36
3.54 W/C		-	173	-	44
3.55 Staff		164	-	-	169
3.56 W/C		-	166	-	44
3.57 Training Salon - Beauty		120	-	-	758
3.58 Treatment Room		216	-	-	68
3.59 Laser Room		90	-	-	100
3.60 Mac Suite		144	-	-	258
3.61 General Teaching		90	-	-	314
3.62 Events Teaching		150	-	-	204
3.63 Media Makeup - Hair		160	-	-	337
3.64 Photo		149	-	-	227
3.65 Studio		160	-	-	177
3.66 General Teaching		143	-	-	199
3.67 Dispensary		90	-	-	115
3.68 Shower		-	69	-	99
3.69 W/C		-	268	-	37
3.70 W/C		-	275	-	26
3.CD01 Circ.		-	219	-	361
3.CD04 Circ.		-	219	-	359
3.CD06 Lobby		-	225	-	43
3.CD07 Circ.		-	239	-	416
3.CD08 Lobby		-	251	-	91
3.CD09 Circ.		-	315	-	210
3.CD10 Lobby		-	245	-	93
3.CD11 Lobby		-	286	-	72
3.ST01 Stair HE1		-	276	-	59
3.ST02 Stair FE1		-	252	-	72
3.ST03 Stair FE2		-	299	-	51
3.ST04 Stair HE2		-	275	-	63
4.01 Rehearsal Rm - Flexible		183	-	-	275
4.02 Rehearsal Rm - Large		170	-	-	366
4.03 Rehearsal Rm - Flexible		175	-	-	320
4.04 Rehearsal Rm - Flexible		176	-	-	303
4.05 Rehearsal Rm - Flexible		173	-	-	308
4.06 Rehearsal Rm - Flexible		179	-	-	272

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
4.07 Rehearsal Rm - Flexible		177	-	-	267
4.08 Changing		207	-	-	77
4.08 Shower		-	83	-	72
4.09 Changing		147	-	-	144
4.09 Shower		-	83	-	64
4.10 IT Hub		134	-	-	70
4.11 D.C. W/C Shower		-	230	-	69
4.12 Assessment Studio		90	-	-	505
4.13 Rehearsal Rm - Flexible		171	-	-	336
4.14 Rehearsal Rm - Flexible		163	-	-	331
4.15 Rehearsal Rm - Flexible		170	-	-	339
4.16 Staff		150	-	-	322
4.17 Stu Ex.		90	-	-	132
4.18 Singing		90	-	-	137
4.19 Rehearsal Rm - Flexible		171	-	-	338
4.20 Ensemble Singing		90	-	-	289
4.21 Store		151	-	-	43
4.22 Rehearsal Rm - Flexible		175	-	-	287
4.23 W/C		-	230	-	120
4.24 W/C		-	241	-	44
4.25 W/C		-	296	-	103
4.26 Cln		70	-	-	32
4.27 IT Hub		132	-	-	84
4.28 Computer Suite		159	-	-	240
4.29 General Teaching		138	-	-	340
4.30 General Teaching		135	-	-	372
4.31 General Teaching		138	-	-	339
4.32 Rehearsal Rm - Flexible		169	-	-	359
4.33 Ensemble Singing		147	-	-	189
4.34 W/C		-	247	-	47
4.35 W/C		-	139	-	48
4.36 W/C		-	139	-	44
4.38 A. Ch. W/C Shower		-	254	-	60
4.39 Cln		70	-	-	45
4.40 Ensemble Singing		146	-	-	190
4.41 Changing		244	-	-	98
4.41 Shower		-	83	-	56
4.42 Solo Singing		90	-	-	136
4.43 Changing		244	-	-	105
4.43 Shower		-	83	-	54
4.44 Drama		185	-	-	155
4.45 Solo Singing		90	-	-	138
4.46 Solo Singing		90	-	-	147

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
4.47 Store		167	-	-	37
4.48 Staff		203	-	-	133
4.49 Rehearsal Rm - Drama		196	-	-	128
4.50 Rehearsal Rm - Film		182	-	-	165
4.51 1-2-1		274	-	-	68
4.52 Rehearsal Rm - Flexible		167	-	-	289
4.53 Audio Control		90	-	-	245
4.54 Audio Live		90	-	-	140
4.55 Welcome		-	90	-	143
4.56 W/C		-	275	-	25
4.57 W/C		-	275	-	38
4.58 W/C		-	275	-	37
4.CD01 Circ.		-	257	-	488
4.CD02 Circ.		-	274	-	261
4.CD03 Lobby		-	312	-	40
4.CD04 Circ.		-	286	-	361
4.CD05 Lobby		-	320	-	87
4.CD06 Circ.		-	323	-	89
4.CD07 Circ.		-	343	-	82
4.CD08 Circ.		-	400	-	132
4.CD09 Lobby		-	323	-	110
4.CD10 Lobby		-	363	-	70
4.ST01 Stair HE1		-	381	-	53
4.ST02 Stair FE1		-	324	-	72
4.ST03 Stair FE2		-	379	-	56
4.ST04 Stair HE2		-	378	-	59
RF.02 Roof Lobby		-	248	-	184

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?
0.01 Studio L	N/A	N/A
0.02 LiveRoom L	N/A	N/A
0.03 Studio S	N/A	N/A
0.04 LiveRoom S	N/A	N/A
0.05 Studio S	N/A	N/A
0.06 Music Technician	N/A	N/A
0.08 Sound Studio	N/A	N/A
0.09 TV Studio - FE	N/A	N/A
0.10 Control Room	N/A	N/A
0.11 LiveRoom - S	N/A	N/A
0.12 Band Room	N/A	N/A
0.13 Practice Room	N/A	N/A
0.14 Practice Room	N/A	N/A

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
0.15 Practice Room	N/A	N/A
0.19 Control Room	N/A	N/A
0.20 LiveRoom - L	N/A	N/A
0.21 Control Room	N/A	N/A
0.22 Quiet Room	N/A	N/A
0.23 Student Hub	NO (-79.6%)	NO
0.24 1-2-1 Crisis Room/CAWS	N/A	N/A
0.25 1-2-1 Enrolment & Financial Ass.	NO (-100%)	NO
0.26 1-2-1 CAWS	NO (-88.9%)	NO
0.27 Social*	NO (-93.8%)	NO
0.28 IT Hub	N/A	N/A
0.31 Front Reception*	YES (+19%)	NO
0.32 Reception & Box Office	NO (-73.8%)	NO
0.33 Back Office	N/A	N/A
0.34 Cash Off.	N/A	N/A
0.35 Restaurant	YES (+35.7%)	NO
0.43 Social*	NO (-38.1%)	NO
0.44 IT Hub	N/A	N/A
0.45 Dressing Room	N/A	N/A
0.46 Changing	N/A	N/A
0.47b 1-2-1	N/A	N/A
0.49 Studio Theatre	N/A	N/A
0.53 Main Theatre	N/A	N/A
0.54 Quick Change	N/A	N/A
0.56 Dressing Room 1	N/A	N/A
0.60 Scene Dock	N/A	N/A
0.63 Machines Room	N/A	N/A
0.65 Film Studio	N/A	N/A
0.66 Technician Workshop	N/A	N/A
0.67 Teaching Studio	N/A	N/A
0.67 Water	N/A	N/A
0.69 Foley Suite	N/A	N/A
0.70 Post Sound	N/A	N/A
0.72 Make-Up	N/A	N/A
0.73 Band Room	N/A	N/A
0.74 Practice Room	N/A	N/A
0.75 Practice Room	N/A	N/A
0.76 Practice Room	N/A	N/A
0.80 Music Technician	N/A	N/A
0.81 First Aid	N/A	N/A
1.01 HE Reception	NO (-58.6%)	NO
1.02 Future U	N/A	N/A
1.03 Future U	N/A	N/A
1.04 Social Dining*	NO (-86.7%)	NO
1.04 Social Dining (landing)*	NO (-84.5%)	NO
1.05 Social/Work Area*	NO (-81.9%)	NO
1.06 Social Dining*	NO (-11.4%)	NO
1.07.1 Kitchen - Change	N/A	N/A
1.07.1 Kitchen - Change	N/A	N/A

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
1.07.8 Kitchen - Office	N/A	N/A
1.11 IT Hub	N/A	N/A
1.14 LRC FE Learning Zone	YES (+17%)	NO
1.15 Quiet Study	NO (-40.3%)	NO
1.16 LRC Staff	N/A	N/A
1.20 Multi Faith	N/A	N/A
1.22 CLICK Studio	NO (-32.2%)	NO
1.22a CLICK repair	NO (-29%)	NO
1.24 Group Study	NO (-56.6%)	NO
1.25 IT Hub	N/A	N/A
1.27 Control Room	N/A	N/A
1.29 1-2-1 Learning Resources	N/A	N/A
1.30 Control & Dimmer Room	N/A	N/A
1.31 Dressing Room 2	N/A	N/A
1.36 Dressing Room 3	N/A	N/A
1.39 Wardrobe Workshop	NO (-78.9%)	NO
1.42 Edit Suite	N/A	N/A
1.43 Edit Suite	N/A	N/A
1.44 Edit Suite	N/A	N/A
1.45 Edit Suite	N/A	N/A
1.46 Edit Suite	N/A	N/A
1.47 Film IT Suite	NO (-61.6%)	NO
1.48 Production Meeting	N/A	N/A
1.49 Film IT Suite	NO (-68%)	NO
1.55 Theory Room	NO (-51.5%)	NO
1.56 Staff	N/A	N/A
1.57 HE Social*	NO (-87%)	NO
1.58 HE Union	NO (-47.8%)	NO
1.59 Future U	NO (-62.4%)	NO
1.61 Future U	NO (-100%)	NO
1.CD01 Circ. Entrance	NO (-15.3%)	NO
2.01 Mac Suite	NO (-58.9%)	NO
2.02 Mac Suite	NO (-63%)	NO
2.03 Wet Room	N/A	N/A
2.04 Screen Print	N/A	N/A
2.05 Operation Systems Lab	NO (-61.4%)	NO
2.06 Software Dev/Systems Lab	NO (-61%)	NO
2.07 1-2-1	N/A	N/A
2.08 1-2-1	N/A	N/A
2.09 Adult Maintenance Lab Lvl3	NO (-60.4%)	NO
2.10 Adult Maintenance Lab	NO (-59.2%)	NO
2.11 HE Admin	NO (-42%)	NO
2.12 HE Admin	N/A	N/A
2.14 Changing Places FE	N/A	N/A
2.15 IT Hub	N/A	N/A
2.18 Edit Suite	NO (-94.3%)	NO
2.19 Edit Suite	N/A	N/A
2.20 Edit Suite	N/A	N/A
2.21 Principalship Admin	NO (-44.7%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
2.22 Principalship	NO (-28.6%)	NO
2.23 PC Suite/Theory	NO (-49.5%)	NO
2.24 PC Suite	NO (-98%)	NO
2.25 PC Suite/Theory	NO (-54.8%)	NO
2.26 PC Suite	NO (-98.8%)	NO
2.27 PC Suite/Theory	NO (-48.5%)	NO
2.28 Staff	NO (-56.2%)	NO
2.29 PC Suite	NO (-97.4%)	NO
2.30 FE Maintenance Lab	NO (-98.7%)	NO
2.31 PC/Games Design	NO (-46.8%)	NO
2.32 PC/Games Design	NO (-63.9%)	NO
2.36 Boardroom	NO (-96.4%)	NO
2.38 IT Hub	N/A	N/A
2.39 PC Suite	NO (-96.3%)	NO
2.40 PC Suite	NO (-63.7%)	NO
2.41 Mac Suite	NO (-63.7%)	NO
2.42 1-2-1	N/A	N/A
2.44 HE LRC & Social*	NO (-78%)	NO
2.45 Meeting Rm	N/A	N/A
2.46 HE Kitchenette	NO (-79.4%)	NO
2.47 Meeting Rm	N/A	N/A
2.48 Meeting Rm	N/A	N/A
2.49 Meeting Rm	N/A	N/A
2.50 HE LRC & Social	N/A	N/A
2.53 Radio Studio	N/A	N/A
2.54 Mac Suite	NO (-63.7%)	NO
2.55 TV & Film	N/A	N/A
2.56 Mac Suite	NO (-63.7%)	NO
2.57 Mac Suite	N/A	N/A
2.58 Mac Suite	NO (-64.4%)	NO
2.59 3D Games	N/A	N/A
2.66 Staff	NO (-49.6%)	NO
2.68 Seminar Room	N/A	N/A
2.69 Security	NO (-60.3%)	NO
2.70 Security Operations	N/A	N/A
2.71 Reprographics	N/A	N/A
2.72 CCNA	NO (-60.9%)	NO
2.73 CCNA Patch Rm	NO (-60.8%)	NO
2.74 Theory Room	NO (-54.6%)	NO
3.01 Special Effects Studio	NO (-33.4%)	NO
3.02 Encapsulation	NO (-61.5%)	NO
3.03 Fibre Glass Workshop	NO (-38.8%)	NO
3.06 1-2-1	NO (-90.7%)	NO
3.07 Media Makeup	NO (-31.8%)	NO
3.08 Photography Studio	NO (-34.3%)	NO
3.09 Darkrm - Processing	N/A	N/A
3.09a Light Trap	N/A	N/A
3.10 Darkrm - Wet	NO (-100%)	NO
3.10a Darkrm - Colour	N/A	N/A

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
3.11 Photography Studio	NO (-30.9%)	NO
3.12 Staff/Kitchen	NO (-60.7%)	NO
3.14 IT Hub	N/A	N/A
3.17 Digital Workshop	NO (-96.2%)	NO
3.18 Textile Print Studio	NO (-33.7%)	NO
3.20 Print Making Studio	NO (-46.6%)	NO
3.21 Jewellery Workshop	NO (-94.6%)	NO
3.22 Laser Cutting	N/A	N/A
3.23 Plastics Rm	N/A	N/A
3.24 Ceramics Studio	NO (-50.4%)	NO
3.26 Kiln Room	NO (-60.3%)	NO
3.27 Art Technician	N/A	N/A
3.28 Garment Construction Studio	NO (-48.2%)	NO
3.29 Fashion & Pattern Cutting	NO (-43%)	NO
3.30 3D Workshop	N/A	N/A
3.31 Storage	N/A	N/A
3.35 Art Studios & Drawing Room	YES (+60.4%)	NO
3.36 Art Technician	N/A	N/A
3.38 IT Hub	N/A	N/A
3.39 DJ Classroom	NO (-66.7%)	NO
3.40 DJ Booth	N/A	N/A
3.41 DJ Booth	N/A	N/A
3.42 DJ Booth	N/A	N/A
3.43 DJ Booth	N/A	N/A
3.44 Mac Suite	NO (-68%)	NO
3.45 Mac Suite	NO (-68%)	NO
3.46 HE Art Studios & Digi	YES (+50.7%)	NO
3.47 Mac Suite	NO (-68%)	NO
3.48 Mac Suite	NO (-68.6%)	NO
3.55 Staff	NO (-47.1%)	NO
3.57 Training Salon - Beauty	N/A	N/A
3.58 Treatment Room	N/A	N/A
3.59 Laser Room	N/A	N/A
3.60 Mac Suite	NO (-65.7%)	NO
3.61 General Teaching	NO (-46.9%)	NO
3.62 Events Teaching	NO (-36.7%)	NO
3.63 Media Makeup - Hair	NO (-93.1%)	NO
3.64 Photo	NO (-59.1%)	NO
3.65 Studio	NO (-73%)	NO
3.66 General Teaching	NO (-91.2%)	NO
3.67 Dispensary	N/A	N/A
4.01 Rehearsal Rm - Flexible	NO (-13.4%)	NO
4.02 Rehearsal Rm - Large	NO (-13.9%)	NO
4.03 Rehearsal Rm - Flexible	NO (-11.3%)	NO
4.04 Rehearsal Rm - Flexible	NO (-11.8%)	NO
4.05 Rehearsal Rm - Flexible	NO (-12.2%)	NO
4.06 Rehearsal Rm - Flexible	NO (-11.5%)	NO
4.07 Rehearsal Rm - Flexible	NO (-10.1%)	NO
4.08 Changing	N/A	N/A

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
4.09 Changing	N/A	N/A
4.10 IT Hub	N/A	N/A
4.12 Assessment Studio	NO (-4.9%)	NO
4.13 Rehearsal Rm - Flexible	YES (+1.8%)	NO
4.14 Rehearsal Rm - Flexible	NO (-91.6%)	NO
4.15 Rehearsal Rm - Flexible	YES (+1.9%)	NO
4.16 Staff	NO (-74.6%)	NO
4.17 Stu Ex.	NO (-81.5%)	NO
4.18 Singing	N/A	N/A
4.19 Rehearsal Rm - Flexible	YES (+1.4%)	NO
4.20 Ensemble Singing	N/A	N/A
4.22 Rehearsal Rm - Flexible	NO (-27.7%)	NO
4.27 IT Hub	N/A	N/A
4.28 Computer Suite	NO (-17.3%)	NO
4.29 General Teaching	NO (-38.3%)	NO
4.30 General Teaching	NO (-15.3%)	NO
4.31 General Teaching	NO (-37.8%)	NO
4.32 Rehearsal Rm - Flexible	NO (-26.9%)	NO
4.33 Ensemble Singing	N/A	N/A
4.40 Ensemble Singing	NO (-39.1%)	NO
4.41 Changing	N/A	N/A
4.42 Solo Singing	N/A	N/A
4.43 Changing	N/A	N/A
4.44 Drama	NO (-3%)	NO
4.45 Solo Singing	N/A	N/A
4.46 Solo Singing	N/A	N/A
4.48 Staff	NO (-80.5%)	NO
4.49 Rehearsal Rm - Drama	NO (-35.4%)	NO
4.50 Rehearsal Rm - Film	NO (-9.8%)	NO
4.51 1-2-1	N/A	N/A
4.52 Rehearsal Rm - Flexible	NO (-87%)	NO
4.53 Audio Control	NO (-27.1%)	NO
4.54 Audio Live	NO (-27.1%)	NO
4.55 Welcome	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

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
Area [m ²]	17622.9	17623
External area [m ²]	17037.5	17037.5
Weather	MAN	MAN
Infiltration [m ³ /hm ² @ 50Pa]	5	3
Average conductance [W/K]	6241.84	0
Average U-value [W/m ² K]	0.37	0
Alpha value* [%]	9.65	10

* 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
A3/A4/A5 Restaurants and Cafes/Drinking Est./Takeaways
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

99 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

1 Others: Miscellaneous 24hr activities

Others: Car Parks 24 hrs
Others: Stand alone utility block

Energy Consumption by End Use [kWh/m²]

	Actual	Notional
Heating	9.33	8.02
Cooling	2.88	5.5
Auxiliary	6.92	5.36
Lighting	12.26	22.05
Hot water	12.62	11.99
Equipment*	41.89	41.89
TOTAL **	44.02	52.92

* 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	3.59	0
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	106.48	104.47
Primary energy* [kWh/m ²]	93.78	124.27
Total emissions [kg/m ²]	14.2	21.2

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

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] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
	Actual	59.9	0	18.3	0	17	0.91	0	0.97	0
	Notional	58.1	0	18.7	0	13	0.86	0	----	----
[ST] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
	Actual	93.3	0	28.5	0	3.1	0.91	0	0.97	0
	Notional	75.8	0	24.4	0	1.8	0.86	0	----	----
[ST] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
	Actual	10.4	0	3.2	0	7.9	0.91	0	0.97	0
	Notional	7.7	0	2.5	0	5.8	0.86	0	----	----
[ST] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
	Actual	10.1	0	3.1	0	39.4	0.91	0	0.97	0
	Notional	3	0	1	0	36.7	0.86	0	----	----
[ST] Single-duct VAV, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	1	204.5	0.2	15.7	33	1.36	3.63	1.66	5
	Notional	0.9	251	0.2	18.4	22.7	1.36	3.79	----	----
[ST] Single-duct VAV, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	4	53.9	0.8	4.1	16.9	1.36	3.64	1.66	5
	Notional	5.4	49.3	1.1	3.6	13.8	1.36	3.79	----	----
[ST] Single-duct VAV, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	3.9	34.6	0.8	3	16.8	1.32	3.24	1.59	4.5
	Notional	5.4	43.1	1.1	3.2	15.2	1.36	3.79	----	----
[ST] Central heating using water: floor heating, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
	Actual	16.6	0	5.1	0	3.1	0.91	0	0.97	0
	Notional	19	0	6.1	0	1.9	0.86	0	----	----
[ST] Single-duct VAV, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	1.4	44.3	0.3	3.3	18.3	1.38	3.75	1.67	5.2
	Notional	0.5	38.9	0.1	2.9	13.5	1.36	3.79	----	----
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	33.2	632.8	2	31.4	3.8	4.61	5.61	4.7	7.5
	Notional	42.5	612.6	4.6	44.9	3.3	2.56	3.79	----	----
[ST] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
	Actual	14.7	0	4.5	0	5.6	0.91	0	0.97	0
	Notional	5.1	0	1.6	0	4.2	0.86	0	----	----
[ST] Single-duct VAV, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
	Actual	9.9	236.6	3.4	20.4	95.3	0.8	3.22	0.97	4.5
	Notional	5.7	304.6	1.8	22.3	38.5	0.86	3.79	----	----
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	30.2	52.8	1.2	2	5.9	6.86	7.23	6.99	9.67
	Notional	26.9	57.3	2.9	4.2	5.1	2.56	3.79	----	----
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	0.5	26.1	0	0.8	3.8	6.95	9.33	7.09	12.49
	Notional	0.5	21	0.1	1.5	2.7	2.56	3.79	----	----
[ST] Central heating using water: floor heating, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
	Actual	216.9	0	66.2	0	9.5	0.91	0	0.97	0
	Notional	58.7	0	18.9	0	7.5	0.86	0	----	----
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	21.5	1.5	0.9	0.1	3.7	6.86	7.23	6.99	9.67
	Notional	34.5	0.1	3.8	0	3.2	2.56	2.84	----	----

HVAC Systems Performance (cont.)										
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] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
Actual	3.2	101.6	0.2	4.1	2.3	5.24	6.94	5.34	9.28	
Notional	1.5	108	0.2	7.9	2	2.56	3.79	----	----	
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
Actual	13.7	167.1	0.6	5.2	7.4	6.29	8.93	6.41	11.95	
Notional	13.2	197.5	1.4	14.5	5.1	2.56	3.79	----	----	
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
Actual	21.6	3.8	0.9	0.1	5	6.95	9.33	7.09	12.49	
Notional	12.1	0.7	1.3	0.1	4.8	2.56	2.84	----	----	
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
Actual	5	151.1	0.3	5.8	3.8	5.42	7.26	5.53	9.71	
Notional	4	204.4	0.4	15	4.2	2.56	3.79	----	----	
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
Actual	16.8	183.8	0.7	7.1	5.3	6.87	7.2	7	9.63	
Notional	12.8	220.9	1.4	16.2	4.6	2.56	3.79	----	----	
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
Actual	5	158.9	0.3	6.4	6.7	5.24	6.94	5.34	9.28	
Notional	0.9	178.2	0.1	13.1	5.4	2.56	3.79	----	----	
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
Actual	39	1.8	2.1	0.1	5.8	5.24	6.94	5.34	9.28	
Notional	9.7	0	1.1	0	4	2.56	2.84	----	----	
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
Actual	0.1	203.7	0	7.9	7.2	6.87	7.2	7	9.63	
Notional	0	261.6	0	19.2	5	2.56	3.79	----	----	
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
Actual	23.7	97.2	1	3.7	3.7	6.86	7.23	6.99	9.67	
Notional	22.7	119.4	2.5	8.8	3.4	2.56	3.79	----	----	
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
Actual	4.4	41.1	0.2	1.2	2.2	6.95	9.33	7.09	12.49	
Notional	3.2	49.6	0.4	3.6	1.9	2.56	3.79	----	----	
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
Actual	1.8	5.3	0.1	0.2	0	6.95	9.33	7.09	12.49	
Notional	0.5	2.3	0.1	0.2	0	2.56	3.79	----	----	
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
Actual	0.7	237.5	0	7.1	8.9	6.95	9.33	7.09	12.49	
Notional	0.8	309.2	0.1	22.7	6.5	2.56	3.79	----	----	
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
Actual	14.8	104.5	0.8	4.2	3.5	5.24	6.94	5.34	9.28	
Notional	13.6	121.7	1.5	8.9	2.7	2.56	3.79	----	----	
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
Actual	7.5	70.4	0.4	2.8	2.2	5.52	6.94	5.63	9.28	
Notional	5.2	102.2	0.6	7.5	2.2	2.56	3.79	----	----	
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
Actual	15.2	67.3	0.8	2.7	1.8	5.52	6.94	5.63	9.28	
Notional	6.4	87.6	0.7	6.4	1.8	2.56	3.79	----	----	
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
Actual	28.7	35.7	1.4	1.4	3.4	5.52	6.94	5.63	9.28	
Notional	19.2	43.2	2.1	3.2	3.7	2.56	3.79	----	----	

HVAC Systems Performance (cont.)										
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] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	44.8	50.3	2.3	2.1	3.9	5.32	6.64	5.42	8.88
	Notional	33.3	53.3	3.6	3.9	3.4	2.56	3.79	----	----
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	15.8	82.2	0.6	2.4	5	6.95	9.33	7.09	12.49
	Notional	9	97.1	1	7.1	3.5	2.56	3.79	----	----
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	44.3	38.8	1.8	1.5	4	6.87	7.2	7	9.63
	Notional	34.4	35.7	3.7	2.6	3.6	2.56	3.79	----	----
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	277.8	20.5	11.2	0.8	0	6.87	7.2	7	9.63
	Notional	237.6	6.5	25.8	0.5	0	2.56	3.79	----	----
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	14	73.2	0.6	2.8	2.9	6.86	7.23	6.99	9.67
	Notional	2.9	58	0.3	4.3	2	2.56	3.79	----	----
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	0	1315.8	0	65.2	8.4	4.61	5.61	4.7	7.5
	Notional	0	1347.1	0	98.7	6.8	2.56	3.79	----	----
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	0	1442.2	0	71.5	9.1	4.61	5.61	4.7	7.5
	Notional	0	1426.7	0	104.6	7.1	2.56	3.79	----	----
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	0	1255.3	0	61.4	9.1	4.81	5.68	4.9	7.6
	Notional	0	1259.5	0	92.3	7.1	2.56	3.79	----	----
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	0	1435.1	0	70.2	8.9	4.81	5.68	4.9	7.6
	Notional	0	1424.7	0	104.4	7	2.56	3.79	----	----
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	24.9	46.6	1	1.4	4.1	6.95	9.33	7.09	12.49
	Notional	14.2	34.7	1.5	2.5	5.1	2.56	3.79	----	----
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	12.6	129.8	0.8	6.4	5	4.61	5.61	4.7	7.5
	Notional	10.9	173.3	1.2	12.7	4.9	2.56	3.79	----	----
[ST] Single room cooling system, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
	Actual	245.2	1	71.7	0	0	0.95	7.23	0.97	9.67
	Notional	185.1	0.1	59.6	0	0	0.86	2.84	----	----
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	188.9	10.9	7.5	0.3	10	6.95	9.33	7.09	12.49
	Notional	5.1	20.6	0.5	2	6.8	2.56	2.84	----	----
[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/m ²]	= Heating energy demand
Cool dem [MJ/m ²]	= Cooling energy demand
Heat con [kWh/m ²]	= Heating energy consumption
Cool con [kWh/m ²]	= Cooling energy consumption
Aux con [kWh/m ²]	= 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 _{i-Typ}	U _{i-Min}	Surface where the minimum value occurs*
Wall	0.23	0.15	0_000083:Surf[7]
Floor	0.2	0.15	2_000070:Surf[0]
Roof	0.15	0.15	5V000001:Surf[77]
Windows, roof windows, and rooflights	1.5	0.66	0_000083:Surf[3]
Personnel doors	1.5	1.27	0_000081:Surf[3]
Vehicle access & similar large doors	1.5	-	No Vehicle access doors in building
High usage entrance doors	1.5	1.27	03000000:Surf[33]
U _{i-Typ} = Typical individual element U-values [W/(m²K)]		U _{i-Min} = 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	4.55