

2.02 - VENTILATION & AIR CONDITIONING SYSTEMS**2.02.01 - Soldier Gallery & Temporary Exhibition Supply/Extract Air Handling Unit
AHU01**

Location		External Roof Plant Area	
General	- Manufacturer	Lennox International Inc.	
	- Type	Packaged Single Deck, Side-by-Side	
<u>Supply Section</u>			
Inlet Damper		Motorised	
Primary Filter	- Type	Bag	
	- Air Volume.....	4.500m³/s	
	- No. Installed / Size.....	2No. 290x595mm 4No. 595x595mm	
	- Efficiency	G4	
Heat Exchanger	- Type	Cross Flow Plate Heat Recovery	
	- Supply Air On/Off	-4.0/10.7°C	
	- Extract Air On/Off.....	24.0/11.8°C	
	- Duty	79.500kW	
	- Efficiency	57.40%	
Supply Fan	- Type	Direct Drive Plug Fan	
	- Model	ER63C-4DN.H7.1R	
	- Duty	- Air Volume	4.500m³/s
		- External Resistance	300Pa
	- Motor	- Type.....	TEFC
		- Power	7.500kW
		- Speed	1588rpm
Cooling Coil	- Type	CHW	
	- Air Volume.....	4.500m³/s	
	- Air Temperature	- On	28.5°C
		- Off	14.0°C
	- Duty	154.500kW	
	- CHW	- Flow	6.0°C
		- Return	12.0°C

Heating Coil	- Flow Rate	6.170l/s
	- Fluid Pressure Drop	24.30kPa
	- Type	LPHW
	- Air Volume	4.500m ³ /s
	- Air Temperature - On	12.0°C
	- Off	24.0°C
	- Duty	78.100kW
Humidifier	- LPHW - Flow	70.0°C
	- Return	50.0°C
	- Flow Rate	0.810l/s
	- Fluid Pressure Drop	18.30kPa
	- Manufacturer	Condair Plc
	- Type	Duct Mounted Electric Resistive Steam Humidifier
	- Air Volume	4.500m ³ /s
	- Electrical Supply	230V/1Ph/50Hz
	- Further Details	Refer to Section 2.02.23

Extract Section

Primary Filter	- Type	Bag
	- Air Volume	4.100m ³ /s
	- No. Installed / Size	2No. 290x595mm 4No. 595x595mm
	- Efficiency	G4
Heat Exchanger		Refer to Supply Section
Extract Fan	- Type	Direct Drive Plug Fan
	- Size	ER63C-4DN.F7.1R
	- Duty - Air Volume	4.100m ³ /s
	- External Resistance	300Pa
	- Motor - Type	TEFC
	- Power	4.000kW
Outlet Damper	- Speed	1322rpm
		Motorised

2.02.02 - Supply/Extract Air Handling Unit AHU02

Location		External Roof Plant Area	
General	- Manufacturer	Lennox International Inc.	
	- Type	Packaged Double Deck	
<u>Supply Section</u>			
Inlet Damper		Motorised	
Primary Filter	- Type	Bag	
	- Air Volume	0.220m³/s	
	- No. Installed / Size	1No. 595x595x290mm	
	- Efficiency	G4	
Heat Exchanger	- Type	Thermal Wheel Heat Recovery	
	- Supply Air On/Off	-4.0/11.2°C	
	- Extract Air On/Off	15.0/-0.2°C	
	- Duty	5.400kW	
	- Efficiency	80.20%	
Supply Fan	- Type	Direct Drive Plug Fan	
	- Model	ER22C-2DN.A7.1R	
	- Duty	- Air Volume	0.220m³/s
		- External Resistance	300Pa
	- Motor	- Type	TEFC
		- Power	0.550kW
		- Speed	2817rpm
Cooling Coil	- Type	CHW	
	- Air Volume	0.220m³/s	
	- Air Temperature	- On	28.5°C
		- Off	15.0°C
	- Duty	4.900kW	
	- CHW	- Flow	6.0°C
		- Return	12.0°C
	- Flow Rate	0.139l/s	
	- Fluid Pressure Drop	18.70kPa	
Heating Coil	- Type	LPHW	
	- Air Volume	0.220m³/s	

Humidifier	- Air Temperature	- On	10.0°C
		- Off	15.0°C
	- Duty		1.400kW
	- LPHW	- Flow	70.0°C
		- Return	50.0°C
	- Flow Rate		0.611l/s
	- Fluid Pressure Drop		6.00kPa
	- Manufacturer		Condair Plc
	- Type		Electric Resistive Steam Humidifier
	- Air Volume		0.220m ³ /s
	- Relative Humidity	- On	29.0%
		- Off	58.0%
	- Electrical Supply		230V/1Ph/50Hz
	- Further Details		Refer to Section 2.02.23

Extract Section

Primary Filter	- Type		Bag
	- Air Volume		0.170m ³ /s
	- No. Installed / Size		1No. 595x595x290mm
	- Efficiency		G4
Heat Exchanger			Refer to Supply Section
Extract Fan	- Type		Direct Drive Plug Fan
	- Size		ER22C-2DN.A7.1R
	- Duty	- Air Volume	0.170m ³ /s
		- External Resistance	300Pa
	- Motor	- Type	TEFC
		- Power	0.550kW
		- Speed	2633rpm
Outlet Damper			Motorised

2.02.03 - Lower Ground Floor South Toilets Supply/Extract Air Handling Unit AHU03

Location		Internal Roof Plant Room
General	- Manufacturer	Lennox International Inc.
	- Type	Packaged Double Deck

Supply Section

Inlet Damper	Motorised		
Primary Filter	- Type	Bag	
	- Air Volume	0.310m³/s	
	- No. Installed / Size	1No. 290x595mm	
	- Efficiency	G4	
Heat Exchanger	- Type	Cross Flow Heat Recovery	
	- Supply Air On/Off	-4.0/11.1°C	
	- Extract Air On/Off	20.0/9.6°C	
	- Duty	5.600kW	
	- Efficiency	62.80%	
Supply Fan	- Type	Direct Drive Plug Fan	
	- Model	ER22C-2DN.A7.1R	
	- Duty	- Air Volume	0.310m³/s
		- External Resistance	300Pa
	- Motor	- Type	TEFC
		- Power	0.550kW
		- Speed	2985rpm
Heating Coil	- Type	LPHW	
	- Air Volume	0.310m³/s	
	- Air Temperature	- On	12.0°C
		- Off	20.0°C
	- Duty	3.100kW	
	- LPHW	- Flow	70.0°C
		- Return	50.0°C
	- Flow Rate	0.038l/s	
	- Fluid Pressure Drop	0.30kPa	

Extract Section

Primary Filter	- Type	Bag
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	- Air Volume.....	0.390m³/s
	- No. Installed / Size.....	1No. 290x595mm
	- Efficiency	G4
Heat Exchanger		Refer to Supply Section
Extract Fan	- Type	Direct Drive Plug Fan
	- Size.....	ER22C-2DN.A7.1R
	- Duty	- Air Volume 0.390m³/s
		- External Resistance 300Pa
	- Motor	- Type..... TEFC
		- Power 0.550kW
		- Speed 3222rpm
Outlet Damper		Motorised

2.02.04 - Café Supply/Extract Air Handling Unit AHU04

Location		External Roof Plant Area	
General	- Manufacturer	Lennox International Inc.	
	- Type	Packaged Double Deck	
<u>Supply Section</u>			
Inlet Damper		Motorised	
Primary Filter	- Type	Bag	
	- Air Volume	1.200m³/s	
	- No. Installed / Size	1No. 892x490mm	
	- Efficiency	G4	
Heat Exchanger	- Type	Thermal Wheel Heat Recovery	
	- Supply Air On/Off	-4.0/8.8°C	
	- Extract Air On/Off	15.0/-0.3°C	
	- Duty	24.700kW	
	- Efficiency	67.20%	
Supply Fan	- Type	Direct Drive Plug Fan	
	- Model	ER31C-2DN.D7.1R	
	- Duty	- Air Volume	1.200m³/s
		- External Resistance	300Pa
	- Motor	- Type	TEFC
		- Power	2.200kW
		- Speed	3187rpm
Cooling Coil	- Type	CHW	
	- Air Volume	1.200m³/s	
	- Air Temperature	- On	28.5°C
		- Off	14.0°C
	- Duty	41.200kW	
	- CHW	- Flow	6.0°C
		- Return	12.0°C
	- Flow Rate	1.639l/s	
	- Fluid Pressure Drop	30.80kPa	
Heating Coil	- Type	LPHW	
	- Air Volume	1.200m³/s	

- Air Temperature	- On	12.0°C
	- Off	21.0°C
- Duty		13.400kW
- LPHW	- Flow	70.0°C
	- Return	50.0°C
- Flow Rate		0.167l/s
- Fluid Pressure Drop		7.20kPa

Extract Section

Primary Filter	- Type	Bag	
	- Air Volume	1.000m ³ /s	
	- No. Installed / Size	1No. 892x490mm	
	- Efficiency	G4	
Heat Exchanger		Refer to Supply Section	
Extract Fan	- Type	Direct Drive Plug Fan	
	- Size	ER31C-2DN.B7.1R	
	- Duty	- Air Volume	1.000m ³ /s
		- External Resistance	300Pa
	- Motor	- Type	TEFC
		- Power	1.100kW
		- Speed	2612rpm
Outlet Damper		Motorised	

2.02.05 - Learning Spaces Supply/Extract Air Handling Unit AHU05A & B

Location	Internal Roof Plant Room	
General	- Manufacturer	Lennox International Inc.
	- Type	Packaged Separate Decks

Supply Deck (AHU05A)

Primary Filter	- Type	Bag
	- Air Volume.....	2.200m ³ /s
	- No. Installed / Size.....	2No. 595x595mm
	- Efficiency	G4
Run-Around Coil	- Type	Water (<i>Linked with AHU05B</i>)
	- Air Volume.....	2.200m ³ /s
	- Air Temperature	- On -4.0°C
		- Off 6.2°C
	- Duty	27.700kW
	- Fluid	- Flow 10.2°C
		- Return 5.9°C
	- Flow Rate.....	15.389l/s
	- Fluid Pressure Drop	9.40kPa
Supply Fan	- Type	Direct Drive Plug Fan
	- Model	ER45C-4DN.E7.1R
	- Duty	- Air Volume 2.200m ³ /s
		- External Resistance 300Pa
	- Motor	- Type..... TEFC
		- Power 3.000kW
		- Speed 2097rpm
Cooling Coil	- Type	CHW
	- Air Volume.....	2.200m ³ /s
	- Air Temperature	- On 28.5°C
		- Off 14.0°C
	- Duty	76.100kW
	- CHW	- Flow 6.0°C
		- Return 12.0°C
	- Flow Rate.....	2.833l/s
	- Fluid Pressure Drop	34.50kPa

Heating Coil	- Type	LPHW
	- Air Volume.....	2.200m ³ /s
	- Air Temperature	- On 10.0°C
		- Off 21.0°C
	- Duty	30.100kW
	- LPHW	- Flow 70.0°C
		- Return 50.0°C
	- Flow Rate.....	0.389l/s
	- Fluid Pressure Drop	10.90kPa
<u>Extract Deck (AHU05B)</u>		
Primary Filter	- Type	Bag
	- Air Volume.....	2.000m ³ /s
	- No. Installed / Size.....	2No. 595x595mm
	- Efficiency	G4
Run-Around Coil	- Type	Water (<i>Linked with AHU05A</i>)
	- Air Volume.....	2.000m ³ /s
	- Air Temperature	- On 20.0°C
		- Off 9.4°C
	- Duty	28.600kW
	- Fluid	- Flow 5.9°C
		- Return 10.2°C
	- Flow Rate.....	15.389l/s
	- Fluid Pressure Drop	29.50kPa
Extract Fan	- Type	Direct Drive Plug Fan
	- Size.....	ER40C-4DN.E7.1R
	- Duty	- Air Volume 2.000m ³ /s
		- External Resistance 300Pa
	- Motor	- Type..... TEFC
		- Power..... 3.000kW
		- Speed 2415rpm

2.02.06 - Discovery Gallery Supply/Extract Air Handling Unit AHU06

Location		Internal Roof Plant Room	
General	- Manufacturer	Lennox International Inc.	
	- Type	Packaged Double Deck	
<u>Supply Section</u>			
Inlet Damper		Motorised	
Primary Filter	- Type	Bag	
	- Air Volume	0.800m³/s	
	- No. Installed / Size	1No. 490x595mm	
	- Efficiency	G4	
Heat Exchanger	- Type	Thermal Wheel Heat Recovery	
	- Supply Air On/Off	-4.0/13.0°C	
	- Extract Air On/Off	22.0/3.2°C	
	- Duty	24.800kW	
	- Efficiency	65.50%	
Supply Fan	- Type	Direct Drive Plug Fan	
	- Model	ER28C-2DN.B7.1R	
	- Duty	- Air Volume	0.800m³/s
		- External Resistance	300Pa
	- Motor	- Type	TEFC
		- Power	1.100kW
		- Speed	3331rpm
Cooling Coil	- Type	CHW	
	- Air Volume	0.800m³/s	
	- Air Temperature	- On	28.5°C
		- Off	18.0°C
	- Duty	16.000kW	
	- CHW	- Flow	6.0°C
		- Return	12.0°C
	- Flow Rate	0.750l/s	
- Fluid Pressure Drop	25.50kPa		
Heating Coil	- Type	LPHW	
	- Air Volume	0.800m³/s	

- Air Temperature	- On	12.0°C
	- Off	22.0°C
- Duty		9.800kW
- LPHW	- Flow	70.0°C
	- Return	50.0°C
- Flow Rate		0.111l/s
- Fluid Pressure Drop		3.20kPa

Extract Section

Primary Filter	- Type	Bag	
	- Air Volume	0.720m ³ /s	
	- No. Installed / Size	1No. 490x595mm	
	- Efficiency	G4	
Heat Exchanger		Refer to Supply Section	
Extract Fan	- Type	Direct Drive Plug Fan	
	- Size.....	ER28C-2DN.B7.1R	
	- Duty	- Air Volume	0.720m ³ /s
		- External Resistance	300Pa
	- Motor	- Type.....	TEFC
		- Power	0.750kW
		- Speed	2914rpm
Outlet Damper		Motorised	

2.02.07 - Ground Floor South Toilets Supply/Extract Air Handling Unit AHU07

Location		Internal Roof Plant Room
General	- Manufacturer	Lennox International Inc.
	- Type	Packaged Double Deck

Supply Section

Inlet Damper		Motorised	
Primary Filter	- Type	Bag	
	- Air Volume	0.130m³/s	
	- No. Installed / Size	1No. 290x595mm	
	- Efficiency	G4	
Heat Exchanger	- Type	Cross Flow Heat Recovery	
	- Supply Air On/Off	-4.0/10.5°C	
	- Extract Air On/Off	20.0/8.0°C	
	- Duty	3.900kW	
	- Efficiency	60.40%	
Supply Fan	- Type	Direct Drive Plug Fan	
	- Model	ER22C-2DN.A7.1R	
	- Duty	- Air Volume	0.130m³/s
		- External Resistance	300Pa
	- Motor	- Type	TEFC
		- Power	0.550kW
		- Speed	2602rpm
Heating Coil	- Type	LPHW	
	- Air Volume	0.130m³/s	
	- Air Temperature	- On	12.0°C
		- Off	20.0°C
	- Duty	13.400kW	
	- LPHW	- Flow	70.0°C
		- Return	50.0°C
	- Flow Rate	0.056l/s	
	- Fluid Pressure Drop	0.20kPa	

Extract Section

Primary Filter	- Type	Bag
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	- Air Volume.....	0.190m³/s
	- No. Installed / Size.....	1No. 290x595mm
	- Efficiency	G4
Heat Exchanger		Refer to Supply Section
Extract Fan	- Type	Direct Drive Plug Fan
	- Size.....	ER22C-2DN.A7.1R
	- Duty	- Air Volume 0.190m³/s
		- External Resistance 300Pa
	- Motor	- Type..... TEFC
		- Power 0.550kW
		- Speed 2496rpm
Outlet Damper		Motorised

2.02.08 - Lower Ground Floor Stores Supply/Extract Air Handling Unit AHU08

Location		Internal Roof Plant Room	
General	- Manufacturer	Lennox International Inc.	
	- Type	Packaged Double Deck	
<u>Supply Section</u>			
Inlet Damper		Motorised	
Primary Filter	- Type	Bag	
	- Air Volume	0.210m³/s	
	- No. Installed / Size	1No. 290x595mm	
	- Efficiency	G4	
Heat Exchanger	- Type	Thermal Wheel Heat Recovery	
	- Supply Air On/Off	-4.0/16.9°C	
	- Extract Air On/Off	22.0/1.2°C	
	- Duty	8.500kW	
	- Efficiency	80.40%	
Supply Fan	- Type	Direct Drive Plug Fan	
	- Model	ER22C-2DN.A7.1R	
	- Duty	- Air Volume	0.210m³/s
		- External Resistance	300Pa
	- Motor	- Type	TEFC
		- Power	0.550kW
		- Speed	2658rpm
Heating Coil	- Type	LPHW	
	- Air Volume	0.210m³/s	
	- Air Temperature	- On	12.0°C
		- Off	24.0°C
	- Duty	3.340kW	
	- LPHW	- Flow	70.0°C
		- Return	50.0°C
	- Flow Rate	0.056l/s	
	- Fluid Pressure Drop	0.30kPa	

Extract Section

Primary Filter	- Type	Bag
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	- Air Volume.....	0.190m³/s
	- No. Installed / Size.....	1No. 290x595mm
	- Efficiency	G4
Heat Exchanger		Refer to Supply Section
Extract Fan	- Type	Direct Drive Plug Fan
	- Size.....	ER22C-2DN.A7.1R
	- Duty	- Air Volume 0.190m³/s
		- External Resistance 300Pa
	- Motor	- Type..... TEFC
		- Power 0.550kW
		- Speed 2633rpm
Outlet Damper		Motorised

2.02.09 - Society Gallery Supply/Extract Air Handling Unit AHU09A & B

Location	Internal Roof Plant Room	
General	- Manufacturer	Lennox International Inc.
	- Type	Packaged Separate Decks

Supply Deck (AHU09A)

Primary Filter	- Type	Bag
	- Air Volume.....	2.120m ³ /s
	- No. Installed / Size.....	2No. 595x595mm
	- Efficiency	G4
Run-Around Coil	- Type	Water (<i>Linked with AHU09B</i>)
	- Air Volume.....	2.120m ³ /s
	- Air Temperature	- On -4.0°C
		- Off 8.7°C
	- Duty	33.300kW
	- Fluid	- Flow 13.6°C
		- Return 7.6°C
	- Flow Rate.....	1.330l/s
	- Fluid Pressure Drop	34.90kPa
Supply Fan	- Type	Direct Drive Plug Fan
	- Model	ER45C-4DN.E7.1R
	- Duty	- Air Volume 2.120m ³ /s
		- External Resistance 250Pa
	- Motor	- Type..... TEFC
		- Power 3.000kW
		- Speed 2084rpm
Cooling Coil	- Type	CHW
	- Air Volume.....	2.120m ³ /s
	- Air Temperature	- On 28.5°C
		- Off 14.0°C
	- Duty	73.200kW
	- CHW	- Flow 6.0°C
		- Return 12.0°C
	- Flow Rate.....	2.920l/s
	- Fluid Pressure Drop	32.20kPa

Heating Coil	- Type	LPHW
	- Air Volume.....	2.120m ³ /s
	- Air Temperature	- On 12.0°C
		- Off 24.0°C
	- Duty	31.700kW
	- LPHW	- Flow 70.0°C
		- Return 50.0°C
	- Flow Rate.....	0.389l/s
	- Fluid Pressure Drop	12.00kPa
<u>Extract Deck (AHU09B)</u>		
Primary Filter	- Type	Bag
	- Air Volume.....	1.900m ³ /s
	- No. Installed / Size.....	2No. 595x595mm
	- Efficiency	G4
Run-Around Coil	- Type	Water (<i>Linked with AHU09A</i>)
	- Air Volume.....	1.900m ³ /s
	- Air Temperature	- On 20.0°C
		- Off 11.0°C
	- Duty	21.300kW
	- Fluid	- Flow 7.6°C
		- Return 13.6°C
	- Flow Rate.....	1.330l/s
	- Fluid Pressure Drop	22.70kPa
Extract Fan	- Type	Direct Drive Plug Fan
	- Size.....	ER40C-4DN.E7.1R
	- Duty	- Air Volume 1.900m ³ /s
		- External Resistance 250Pa
	- Motor	- Type..... TEFC
		- Power..... 2.200kW
Outlet Damper		- Speed 2314rpm
	Outlet Damper	Motorised

2.02.10 - Battle Gallery Supply/Extract Air Handling Unit AHU10A & B

Location	Internal Roof Plant Room	
General	- Manufacturer	Lennox International Inc.
	- Type	Packaged Separate Decks

Supply Deck (AHU10A)

Primary Filter	- Type	Bag
	- Air Volume.....	1.560m ³ /s
	- No. Installed / Size.....	2No. 490x595mm
	- Efficiency	G4
Run-Around Coil	- Type	Water (<i>Linked with AHU10B</i>)
	- Air Volume.....	1.560m ³ /s
	- Air Temperature	- On -5.0°C
		- Off 8.9°C
	- Duty	26.800kW
	- Fluid	- Flow 14.5°C
		- Return 6.3°C
	- Flow Rate.....	0.778l/s
	- Fluid Pressure Drop	22.10kPa
Supply Fan	- Type	Direct Drive Plug Fan
	- Model	ER35C-2DN.E7.1R
	- Duty	- Air Volume 1.560m ³ /s
		- External Resistance 250Pa
	- Motor	- Type..... TEFC
		- Power 3.000kW
		- Speed 2880rpm
Cooling Coil	- Type	CHW
	- Air Volume.....	1.560m ³ /s
	- Air Temperature	- On 28.5°C
		- Off 14.0°C
	- Duty	53.000kW
	- CHW	- Flow 6.0°C
		- Return 12.0°C
	- Flow Rate.....	2.110l/s
	- Fluid Pressure Drop	21.90kPa

Heating Coil	- Type	LPHW
	- Air Volume.....	1.560m ³ /s
	- Air Temperature	- On 12.0°C
		- Off 24.0°C
	- Duty	23.300kW
	- LPHW	- Flow 70.0°C
		- Return 50.0°C
	- Flow Rate.....	0.278l/s
	- Fluid Pressure Drop	21.60kPa
<u>Extract Deck (AHU10B)</u>		
Primary Filter	- Type	Bag
	- Air Volume.....	1.400m ³ /s
	- No. Installed / Size.....	2No. 490x595mm
	- Efficiency	G4
Run-Around Coil	- Type	Water (<i>Linked with AHU10A</i>)
	- Air Volume.....	1.400m ³ /s
	- Air Temperature	- On 24.0°C
		- Off 11.6°C
	- Duty	27.100kW
	- Fluid	- Flow 6.3°C
		- Return 14.5°C
	- Flow Rate.....	0.778l/s
	- Fluid Pressure Drop	28.20kPa
Extract Fan	- Type	Direct Drive Plug Fan
	- Size.....	ER35C-2DN.D7.1R
	- Duty	- Air Volume 1.400m ³ /s
		- External Resistance..... 250Pa
	- Motor	- Type..... TEFC
		- Power..... 2.200kW
		- Speed 2466rpm
Outlet Damper		Motorised

2.02.11 - North Toilets Supply Air Handling Unit AHU11

Location	First Floor Roof	
General	- Manufacturer	Lennox International Inc.
	- Type	Packaged Single Deck

Supply Section

Inlet Damper		Motorised	
Primary Filter	- Type	Bag	
	- Air Volume	0.290m³/s	
	- No. Installed / Size.....	1No. 290x595mm	
	- Efficiency	G4	
Supply Fan	- Type	Direct Drive Plug Fan	
	- Model	ER22C-2DN.A7.1R	
	- Duty	- Air Volume	0.290m³/s
		- External Resistance	300Pa
	- Motor	- Type.....	TEFC
		- Power	0.550kW
		- Speed	2650rpm
Heating Coil	- Type	LPHW	
	- Air Volume	0.290m³/s	
	- Air Temperature	- On	12.0°C
		- Off	20.0°C
	- Duty	2.900kW	
	- LPHW	- Flow	70.0°C
		- Return	50.0°C
	- Flow Rate	0.039l/s	
	- Fluid Pressure Drop	0.20kPa	

2.02.12 - Boardroom Supply/Extract Air Handling Unit AHU12

Location		External Roof Plant Area	
General	- Manufacturer	Lennox International Inc.	
	- Type	Packaged Double Deck	
<u>Supply Section</u>			
Inlet Damper		Motorised	
Primary Filter	- Type	Bag	
	- Air Volume	0.600m³/s	
	- No. Installed / Size	1No. 490x595mm	
	- Efficiency	G4	
Heat Exchanger	- Type	Thermal Wheel Heat Recovery	
	- Supply Air On/Off	-4.0/14.3°C	
	- Extract Air On/Off	22.0/1.8°C	
	- Duty	20.000kW	
	- Efficiency	70.30%	
Supply Fan	- Type	Direct Drive Plug Fan	
	- Model	ER25C-2DN.B7.1R	
	- Duty	- Air Volume	0.600m³/s
		- External Resistance	250Pa
	- Motor	- Type	TEFC
		- Power	0.750kW
		- Speed	3301rpm
Cooling Coil	- Type	CHW	
	- Air Volume	0.600m³/s	
	- Air Temperature	- On	28.5°C
		- Off	14.0°C
	- Duty	20.800kW	
	- CHW	- Flow	6.0°C
		- Return	12.0°C
	- Flow Rate	0.778l/s	
	- Fluid Pressure Drop	35.60kPa	
Heating Coil	- Type	LPHW	
	- Air Volume	0.600m³/s	

- Air Temperature	- On	12.0°C
	- Off	24.0°C
- Duty		9.000kW
- LPHW	- Flow	70.0°C
	- Return	50.0°C
- Flow Rate		0.111/s
- Fluid Pressure Drop		2.70kPa

Extract Section

Primary Filter	- Type	Bag	
	- Air Volume	0.540m³/s	
	- No. Installed / Size	1No. 490x595mm	
	- Efficiency	G4	
Heat Exchanger		Refer to Supply Section	
Extract Fan	- Type	Direct Drive Plug Fan	
	- Size.....	ER25C-2DN.B7.1R	
	- Duty	- Air Volume	0.540m³/s
		- External Resistance	250Pa
	- Motor	- Type.....	TEFC
		- Power	0.750kW
		- Speed	2902rpm
Outlet Damper		Motorised	

2.02.13 - Army Gallery Supply/Extract Air Handling Unit AHU13

Location		External Roof Plant Area	
General	- Manufacturer	Lennox International Inc.	
	- Type	Packaged Double Deck	
<u>Supply Section</u>			
Inlet Damper		Motorised	
Primary Filter	- Type	Bag	
	- Air Volume.....	1.350m³/s	
	- No. Installed / Size.....	1No. 290x595mm	
	- Efficiency	G4	
Heat Exchanger	- Type	Thermal Wheel Heat Recovery	
	- Supply Air On/Off	-4.0/12.5°C	
	- Extract Air On/Off.....	22.0/3.5°C	
	- Duty	40.600kW	
	- Efficiency	63.50%	
Supply Fan	- Type	Direct Drive Plug Fan	
	- Model	ER35C-2DN.D7.1R	
	- Duty	- Air Volume	1.350m³/s
		- External Resistance	250Pa
	- Motor	- Type.....	TEFC
		- Power	2.200kW
		- Speed	2727rpm
Cooling Coil	- Type	CHW	
	- Air Volume.....	1.350m³/s	
	- Air Temperature	- On	28.5°C
		- Off	14.0°C
	- Duty	46.400kW	
	- CHW	- Flow	6.0°C
		- Return	12.0°C
	- Flow Rate	1.860l/s	
	- Fluid Pressure Drop	29.10kPa	
Heating Coil	- Type	LPHW	
	- Air Volume.....	1.350m³/s	

- Air Temperature	- On	12.0°C
	- Off	24.0°C
- Duty		20.100kW
- LPHW	- Flow	70.0°C
	- Return	50.0°C
- Flow Rate		0.250/s
- Fluid Pressure Drop		17.50kPa

Extract Section

Primary Filter	- Type	Bag	
	- Air Volume	1.200m ³ /s	
	- No. Installed / Size	1No. 290x595mm	
	- Efficiency	G4	
Heat Exchanger		Refer to Supply Section	
Extract Fan	- Type	Direct Drive Plug Fan	
	- Size	ER31C-2DN.C7.1R	
	- Duty	- Air Volume	1.200m ³ /s
		- External Resistance	250Pa
	- Motor	- Type	TEFC
		- Power	1.500kW
		- Speed	3008rpm
Outlet Damper		Motorised	

2.02.14 - General Areas Supply/Extract Air Handling Unit AHU14

Location	External Roof Plant Area		
General	- Manufacturer	Lennox International Inc.	
	- Type	Packaged Double Deck	
<u>Supply Section</u>			
Inlet Damper	Motorised		
Primary Filter	- Type	Bag	
	- Air Volume	1.240m³/s	
	- No. Installed / Size	1No. 290x595mm 1No. 595x595mm	
	- Efficiency	G4	
Heat Exchanger	- Type	Thermal Wheel Heat Recovery	
	- Supply Air On/Off	-4.0/8.4°C	
	- Extract Air On/Off	15.0/1.3°C	
	- Duty	24.700kW	
	- Efficiency	65.20%	
Supply Fan	- Type	Direct Drive Plug Fan	
	- Model	ER31C-2DN.D7.1R	
	- Duty	- Air Volume	1.240m³/s
		- External Resistance	300Pa
	- Motor	- Type	TEFC
		- Power	2.200kW
		- Speed	3293rpm
Cooling Coil	- Type	CHW	
	- Air Volume	1.240m³/s	
	- Air Temperature	- On	28.5°C
		- Off	16.0°C
	- Duty	38.000kW	
	- CHW	- Flow	6.0°C
		- Return	12.0°C
	- Flow Rate	1.420l/s	
	- Fluid Pressure Drop	35.60kPa	
Heating Coil	- Type	LPHW	

- Air Volume.....	1.240m ³ /s
- Air Temperature	- On 12.0°C
	- Off 21.0°C
- Duty	14.000kW
- LPHW	- Flow 70.0°C
	- Return 50.0°C
- Flow Rate	0.167/s
- Fluid Pressure Drop	8.90kPa

Extract Section

Primary Filter	- Type	Bag
	- Air Volume.....	1.240m ³ /s
	- No. Installed / Size	1No. 290x595mm 1No. 595x595mm
	- Efficiency	G4
Heat Exchanger		Refer to Supply Section
Extract Fan	- Type	Direct Drive Plug Fan
	- Size.....	ER31C-2DN.C7.1R
	- Duty	- Air Volume 1.120m ³ /s
		- External Resistance 300Pa
	- Motor	- Type..... TEFC
		- Power 1.500kW
		- Speed 2903rpm
Outlet Damper		Motorised

2.02.15 - Retail Supply/Extract Air Handling Unit AHU15

Location		External Roof Plant Area	
General	- Manufacturer	Lennox International Inc.	
	- Type	Packaged Double Deck	
<u>Supply Section</u>			
Inlet Damper		Motorised	
Primary Filter	- Type	Bag	
	- Air Volume	0.300m³/s	
	- No. Installed / Size	1No. 290x595mm	
	- Efficiency	G4	
Heat Exchanger	- Type	Thermal Wheel Heat Recovery	
	- Supply Air On/Off	-4.0/9.7°C	
	- Extract Air On/Off	15.0/-0.2°C	
	- Duty	6.600kW	
	- Efficiency	72.30%	
Supply Fan	- Type	Direct Drive Plug Fan	
	- Model	ER22C-2DN.A7.1R	
	- Duty	- Air Volume	0.300m³/s
		- External Resistance	300Pa
	- Motor	- Type	TEFC
		- Power	0.550kW
		- Speed	3215rpm
Cooling Coil	- Type	CHW	
	- Air Volume	0.300m³/s	
	- Air Temperature	- On	28.5°C
		- Off	14.0°C
	- Duty	10.400kW	
	- CHW	- Flow	6.0°C
		- Return	12.0°C
	- Flow Rate	0.417l/s	
	- Fluid Pressure Drop	20.50kPa	
Heating Coil	- Type	LPHW	
	- Air Volume	0.300m³/s	

- Air Temperature	- On	12.0°C
	- Off	24.0°C
- Duty		4.500kW
- LPHW	- Flow	70.0°C
	- Return	50.0°C
- Flow Rate		0.056/s
- Fluid Pressure Drop		0.50kPa

Extract Section

Primary Filter	- Type	Bag	
	- Air Volume	0.270m ³ /s	
	- No. Installed / Size	1No. 290x595mm	
	- Efficiency	G4	
Heat Exchanger		Refer to Supply Section	
Extract Fan	- Type	Direct Drive Plug Fan	
	- Size.....	ER22C-2DN.A7.1R	
	- Duty	- Air Volume	0.270m ³ /s
		- External Resistance	300Pa
	- Motor	- Type.....	TEFC
		- Power	0.550kW
		- Speed	2823rpm
Outlet Damper		Motorised	

2.02.16 - Archive Supply/Extract Air Handling Unit AHU16

Location		External Roof Plant Area	
General	- Manufacturer	Lennox International Inc.	
	- Type	Packaged Double Deck	
<u>Supply Section</u>			
Inlet Damper		Motorised	
Primary Filter	- Type	Bag	
	- Air Volume	0.210m³/s	
	- No. Installed / Size	1No. 290x595mm	
	- Efficiency	G4	
Heat Exchanger	- Type	Thermal Wheel Heat Recovery	
	- Supply Air On/Off	-4.0/11.2°C	
	- Extract Air On/Off	15.0/-0.2°C	
	- Duty	5.400kW	
	- Efficiency	80.20%	
Supply Fan	- Type	Direct Drive Plug Fan	
	- Model	ER22C-2DN.A7.1R	
	- Duty	- Air Volume	0.210m³/s
		- External Resistance	300Pa
	- Motor	- Type	TEFC
		- Power	0.550kW
		- Speed	2865rpm
Cooling Coil	- Type	CHW	
	- Air Volume	0.210m³/s	
	- Air Temperature	- On	28.5°C
		- Off	15.0°C
	- Duty	10.400kW	
	- CHW	- Flow	6.0°C
		- Return	12.0°C
	- Flow Rate	0.250l/s	
- Fluid Pressure Drop	9.90kPa		
Heating Coil	- Type	LPHW	
	- Air Volume	0.210m³/s	

Humidifier	- Air Temperature	- On	10.0°C
		- Off	16.0°C
	- Duty		1.600kW
	- LPHW	- Flow	70.0°C
		- Return	50.0°C
	- Flow Rate		0.389/s
	- Fluid Pressure Drop		8.40kPa
	- Manufacturer		Condair Plc
	- Type		Electric Resistive Steam Humidifier
	- Electrical Supply		400V/3Ph/50Hz
	- Further Details		Refer to Section 2.02.23

Extract Section

Primary Filter	- Type		Bag
	- Air Volume		0.190m ³ /s
	- No. Installed / Size		1No. 290x595mm
	- Efficiency		G4
Heat Exchanger			Refer to Supply Section
Extract Fan	- Type		Direct Drive Plug Fan
	- Size		ER22C-2DN.A7.1R
	- Duty	- Air Volume	0.190m ³ /s
		- External Resistance	300Pa
	- Motor	- Type	TEFC
		- Power	0.550kW
		- Speed	2633rpm
Outlet Damper			Motorised

2.02.17 - Kitchen Supply Air Handling Unit AHU17

Location	External Roof Plant Area	
General	- Manufacturer	Lennox International Inc.
	- Type	Packaged Single Deck

Supply Section

Inlet Damper		Motorised	
Primary Filter	- Type	Bag	
	- Air Volume	1.500m³/s	
	- No. Installed / Size	2No. 490x595mm	
	- Efficiency	G4	
Supply Fan	- Type	Direct Drive Plug Fan	
	- Model	ER35C-2DN.D7.1R	
	- Duty	- Air Volume	1.500m³/s
		- External Resistance	300Pa
	- Motor	- Type.....	TEFC
		- Power	0.550kW
		- Speed	2509rpm
Heating Coil	- Type	LPHW	
	- Air Volume	1.500m³/s	
	- Air Temperature	- On	-5.0°C
		- Off	16.0°C
	- Duty	38.900kW	
	- LPHW	- Flow	70.0°C
		- Return	50.0°C
	- Flow Rate	0.472l/s	
	- Fluid Pressure Drop	22.40kPa	

2.02.18 - Archive Supply/Re-Circulation Air Handling Units AHU AE01 & 02

Location		Lower Ground Floor Archive
General	- Manufacturer	AirCRAFT Air Handling Limited
	- Type	Internal Packaged, Single Decked
Primary Filter	- Type	Panel
	- Air Volume	1.000m³/s
	- No. Installed / Size	1No. @ 495x495x50mm 1No. @ 495x595x50mm
	- Efficiency	EU 4
Secondary Filter	- Type	Bag
	- Air Volume	1.000m³/s
	- No. Installed / Size	1No. @ 495x495x380mm 1No. @ 495x595x380mm
	- Efficiency	EU 7
DX Coil	- Type	Reverse Cycle DX
	- Air Volume	1.000m³/s
	- Air Temperature (Cooling)	- On 15.0°C - Off 8.0°C
	- Cooling Duty	8.700kW
	- Heating Duty	9.600kW
	- Refrigerant	R410A
	-	
Supply Fan	- Manufacturer	ZIEHL-ABEGG
	- Type	Backward Curved Direct Drive Plug Fan
	- Size	ER31C-ZID.DC.CR
	- Duty	- Air Volume 1.000m³/s - External Resistance 150Pa
	- Speed	Variable
	- Motor	- Type..... TEFC - Power 3.700kW - Speed 4100rpm - Full Load Current..... 6.00Amps - Electrical Supply 400V/3Ph/50Hz
	-	
	-	
	-	
	-	

2.02.19 - [REDACTED] Supply/Re-Circulation Air Handling Units AHU AM01 & 02

Location	[REDACTED]	
General	- Manufacturer	AirCraft Air Handling Limited
	- Type	Internal Packaged, Single Decked
Primary Filter	- Type	Panel
	- Air Volume	0.400m ³ /s
	- No. Installed / Size	1No. @ 495x495x50mm
	- Efficiency	EU 4
Secondary Filter	- Type	Bag
	- Air Volume	0.400m ³ /s
	- No. Installed / Size	1No. @ 495x495x380mm
	- Efficiency	EU 7
DX Coil	- Type	Reverse Cycle DX
	- Air Volume	0.400m ³ /s
	- Air Temperature (Cooling)	- On 15.0°C - Off 8.0°C
	- Cooling Duty	3.480kW
	- Heating Duty	3.900kW
	- Refrigerant	R410A
Supply Fan	- Manufacturer	ZIEHL-ABEGG
	- Type	Backward Curved Direct Drive Plug Fan
	- Size	ER31C-ZID.DC.CR
	- Duty	- Air Volume 0.400m ³ /s - External Resistance 150Pa
	- Speed	Variable
	- Motor	- Type TEFC - Power 3.700kW - Speed 4100rpm - Full Load Current 6.00Amps - Electrical Supply 400V/3Ph/50Hz

2.02.20 - Kitchen Extract Ventilation Fan Unit KE/GF/01

Location	External Roof Plant Room
Manufacturer	Elta Fans Limited
Type	Centrifugal Box Fan
Model	SQU4/4-3HTS
Duty	- Air Volume 1.600m ³ /s
	- Resistance 550Pa
Speed	1447rpm
Motor	- Type TEFC
	- Power 3.000kW
	- Full Load Current 6.20Amps
	- Electrical Supply 400V/3Ph/50Hz
Controller	- Type Inverter Controller
	- Model 149-ODE-2-24400

2.02.21 - Ground & First Floor Toilets Extract Ventilation Fan Unit TX/01/01

Location	First Floor Roof
Manufacturer	Elta Fans Limited
Type	Centrifugal Twin Box Fan, Weatherproof
Model	SQT500-1ECLWP
Duty	- Air Volume 0.500m ³ /s
	- Resistance 220Pa
Motor	- Type TEFC
	- Power 0.774kW (Max)
	- Full Load Current 3.50Amps
	- Electrical Supply 400V/3Ph/50Hz
Controller	- Type Changeover Panel
	- Model ACI14E

2.02.22 - AHU Run-Around Coil Pumps

Location	AHU05A & B, AHU09A & B and AHU10A & B Systems
Manufacturer	Grundfos Pumps Limited
Type	Single-Head In-Line
Model	MAGNA3 25-60
Number Installed.....	3No. (1No. per AHU System)
Duty - Volume Flow	0.400l/s
- Resistance	30.00kPa
Motor - Type.....	TEFC
- Power	0.091kW
- Full Load Current.....	0.75Amps
- Electrical Supply	230V/1Ph/50Hz

2.02.23 - Electric Steam Humidifiers

Location	Roof Level
Manufacturer	Condair Plc
Type	Electric Resistive Steam Humidifier with Advanced Scale Management

a)

Systems Served	AHU01 & 02
Model	RS 5
Number Installed.....	2No.
Capacity	5.100kg/h
Electrical Supply	230V/1Ph/50Hz

b)

Systems Served	AHU16
Model	RS 40
Number Installed.....	1No.
Capacity	40.000kg/h
Electrical Supply	400V/3Ph/50Hz

2.02.24 - Kitchen Extract Filtration Unit

Location.....	Ground Floor Kitchen
Manufacturer	Extechnology Limited
Type.....	Duct Mounted UV Kitchen Extract Emissions Control Unit
Model	Ecovent UV-C
Air Volume.....	1.500 m ³ /s (Max)
UV Lamp Type	1No. 135W Quartz, 12,000 Hour Life
Electrical Supply	230V/1Ph/50Hz

2.02.25 - Variable Air Volume (VAV) Boxes

Location.....	Various
Manufacturer	Trox UK Limited
Type.....	Rectangular VAV Terminal Unit c/w Silencer

Reference	Location	Max Volume (l/s)	Model
VAV/LG/TA/01	Templer Study A	0.200	TVJ-Easy/200x200
VAV/LG/TA/02	Templer Study A	0.200	TVJ-Easy/200x200
VAV/LG/TA/03	Templer Study A	0.300	TVJ-Easy/300x200
VAV/LG/TA/04	Templer Study A	0.270	TVJ-Easy/300x200
VAV/LG/GA/01	Group Area	0.450	TVJ-Easy/600x200
VAV/LG/CR/01	Corridor (LG.05)	0.500	TVJ-Easy/500x200
VAV/LG/L1/01	Learning Space 1	0.500	TVJ-Easy/600x200
VAV/LG/L2/01	Learning Space 2	0.450	TVJ-Easy/500x200
VAV/LG/EE/01	Entrance/Foyer	1.200	TVJ-Easy/700x300
VAV/LG/EE/02	Entrance/Foyer	1.100	TVJ-Easy/700x300
VAV/LG/SG/01	Soldier Gallery	1.105	TVJ-Easy/800x300
VAV/LG/SG/02	Soldier Gallery	0.255	TVJ-Easy/300x200
VAV/LG/SG/03	Soldier Gallery	0.765	TVJ-Easy/600x300
VAV/LG/SG/04	Soldier Gallery	0.460	TVJ-Easy/500x300
VAV/LG/KZ/01	Kids Zone	0.540	TVJ-Easy/600x200
VAV/LG/KZ/02	Kids Zone	0.600	TVJ-Easy/600x300
VAV/LG/DR/01	Dining Room	0.140	TVJ-Easy/200x200
VAV/LG/DR/02	Dining Room	0.130	TVJ-Easy/200x200
VAV/LG/TE/01	Temporary Exhibition	0.286	TVJ-Easy/400x200
VAV/LG/TE/02	Temporary Exhibition	0.430	TVJ-Easy/400x300
VAV/LG/TE/03	Temporary Exhibition	0.430	TVJ-Easy/400x300
VAV/LG/TE/04	Temporary Exhibition	0.286	TVJ-Easy/400x200
VAV/LG/TE/05	Temporary Exhibition	0.286	TVJ-Easy/400x200
VAV/LG/TE/06	Temporary Exhibition	0.286	TVJ-Easy/400x200

2.02.26 - Attenuators

Location.....	Various
Manufacturer	Caice Acoustic Air Movement Limited

Reference should be made to the Caice Acoustic Air Movement Limited information within Section Ten of this manual for a schedule of installed attenuators and full technical details.

2.02.27 - Grilles & Diffusers

Location..... See Schedules Below

Manufacturers..... Halton Limited & Trox UK
Limited as per Schedules Below

SCHEDULE OF SUPPLY GRILLES AND DIFFUSERS										
Reference	Location		Description	Type	Air Flow (L/s)	Duct Conn. Size (mm)	Pressure Drop (Maximum) (Pa)	Nominal Size		Revision
	a	b						Width (mm)	Depth (mm)	
Lower Ground Floor										
Ref.		Qty.								
SG		4	Armoury	Supply Grille (From Floor Mounted Unit)	Adjustable blade grille AT-DG	340		1200	300	
SG		1	Armoury	Supply Grille	Adjustable blade grille AT-DG	130		700	250	
SD		1	Viewing Room	Linear Supply Diffuser	Fixed Blade Linear Diffuser ADM-1	200	160 Ø	5500	150	
SD		2	Lockers	Supply Grille	TROX Disc Valve Z-LVS	17	100 Ø	100 Ø		
SD		2	Changing Places WC	Supply Grille	TROX Disc Valve Z-LVS	32	160 Ø	160 Ø		
SD		1	Office	Linear Supply Diffuser	TROX Fixed Blade Linear Diffuser ADM-1	20	100 Ø	4500	150	
SD		1	Templer Study A	Linear Supply Diffuser	TROX Fixed Blade Linear Diffuser ADM-1	400	200 Ø	7000	150	
SD		1	Templer Study B	Linear Supply Diffuser	TROX Fixed Blade Linear Diffuser ADM-1	550	200 Ø	6000	150	
SD		6	Open Area/Discovery Gallery	Linear Supply Diffuser	TROX Linear Slot Diffuser VSD50	50	160 Ø	1700	59.5	
SG		16	Archive	Supply Grille (From Floor Mounted Unit)	Adjustable blade grille AT-DG	340		1200	300	
SG		2	Archive	Supply Grille	Adjustable blade grille AT-DG	80		450	150	
SG		1	Photography	Supply Grille	Adjustable blade grille AT-DG	20		200	150	
SG		1	Film	Supply Grille	Adjustable blade grille AT-DG	80	200 x 150	450	150	
SD		1	Wet Learning Space	Linear Supply Diffuser	TROX Fixed Blade Linear Diffuser ADM-1	1150	200 x 200	14000	150	
SD		1	Learning Space 1	Linear Supply Diffuser	TROX Fixed Blade Linear Diffuser ADM-1	700	200 Ø	10000	150	
SD		1	Learning Space 2	Linear Supply Diffuser	TROX Fixed Blade Linear Diffuser ADM-1	700	200 Ø	10000	150	
SD		10	Discovery Gallery	Low Level Displacement Terminals	Halton sidewall displacement diffusers	80		TBA	TBA	
SG		1	Front of House Storage	Supply Grille	Adjustable blade grille AT-DG	47		250	200	
SG		1	Retail Deep Storage	Supply Grille	Adjustable blade grille AT-DG	27		200	150	
SG		1	Handling Collection	Supply Grille	Adjustable blade grille AT-DG	32		250	150	
Ground Floor										
SD		38	Soldier Gallery	Linear Supply Diffuser	TROX Linear Slot Diffuser VSD50	51	160 Ø	1700	59.5	
SD		1	Soldier Gallery	Sidewall Linear Diffuser	Linear Fixed Blade AH - 15 - AG	250	180 Ø	7500	100	
SD		1	Soldier Gallery	Sidewall Linear Diffuser		306	180 Ø	10000	100	
SD		5	Retail	Supply Diffuser	Halton TRB Conical Diffuser	75	180 Ø	438 Ø		
SD		2	Kids Zone	Linear Supply Diffuser	TROX Fixed Blade Linear Diffuser ADM-1	1200	180 Ø	17000	150	
SD		1	Office	Linear Supply Diffuser	TROX Fixed Blade Linear Diffuser ADM-1	200	100 Ø	2000	150	
SD		1	Dining	Linear Supply Diffuser	TROX Fixed Blade Linear Diffuser ADM-1	400	200 Ø	6500	150	
SD		31	Cafe	Supply Diffuser	TROX Linear Slot Diffuser VSD50	80	200 Ø	1700	59.5	
SD		5	Cafe	Supply Diffuser	Halton TRB Conical Diffuser			438 Ø		
SD		24	Entrance/Foyer	Linear Supply Diffuser	TROX Linear Slot Diffuser VSD50			1700	59.5	
SD		15	Entrance/Foyer	Supply Diffuser	Halton TRB Conical Diffuser			438 Ø		
First Floor										
SD		36	Temporary Exhibition	Linear Supply Diffuser	TROX Linear Slot Diffuser VSD50	48	160 Ø	1700	59.5	
SD		33	Army Gallery	Linear Supply Diffuser	TROX Linear Slot Diffuser VSD50	50	160 Ø	1700	59.5	
Second Floor										
SD		48	Society Gallery	Linear Supply Diffuser	TROX Linear Slot Diffuser VSD50	43	160 Ø	1700	59.5	
SD		30	Battle Gallery	Linear Supply Diffuser	TROX Linear Slot Diffuser VSD50	52	160 Ø	1700	59.5	
SD		1	Boardroom	Linear Supply Air Slot Diffuser	TROX Fixed Blade Linear Diffuser ADM-1	600	200 Ø	3500	250	

SCHEDULE OF EXTRACT GRILLES AND DIFFUSERS												
Reference		Location		Description	Type	Air Flow (L/s)	Throw (m)	Duct Conn. Size (mm)	Pressure Drop (Maximum) (Pa)	Nominal Size a Width (mm) b Depth (mm)		Provision
Lower Ground Floor												
Ref.			Qty.									
EG			1	Armoury	Extract Grille	Adjustable blade grille AT-DG	200				1200 250	
EG			2	Lockers	Extract Grille	TROX Disc Valve LVS	17		100 Ø		100 Ø	
EG			1	Baby Changing	Extract Grille	TROX Disc Valve LVS	32		125 Ø		125 Ø	
EG			1	Breast Feeding	Extract Grille	TROX Disc Valve LVS	32		125 Ø		125 Ø	
EG			2	Changing Places WC	Extract Grille	TROX Disc Valve LVS	40		160 Ø		160 Ø	
EG			1	Front of House Storage	Extract Grille	Adjustable blade grille AT-DG	47				250 200	
EG			1	Retail Deep Storage	Extract Grille	Adjustable blade grille AT-DG	27				200 150	
EG			1	Handling Collection	Extract Grille	Adjustable blade grille AT-DG	32				250 150	
EG			2	Wet Learning Space	Linear Return Air Diffuser	TROX Linear Slot Diffuser VSD50	700				9000 59.5	
EG			1	Learning Space 1/2	Linear Return Air Diffuser	TROX Linear Slot Diffuser VSD50	1150				14000 59.5	
EG			3	Archive	Extract Grille	Adjustable blade grille AT-DG	54				400 150	
EG			1	Photography	Extract Grille	Adjustable blade grille AT-DG	20				200 150	
EG			1	Film	Extract Grille	Adjustable blade grille AT-DG	10				150 150	
EG			1	Templer Study A	Linear Return Air Sidewall Diffuser	Linear Fixed Blade AH - 15 - AG	550		N/A		6000 100	
EG			1	Templer Study B	Linear Return Air Sidewall Diffuser	Linear Fixed Blade AH - 15 - AG	400		N/A		4000 100	
Ground Floor												
EG			1	Kids Zone	Linear Return Air Grille	TROX Linear Slot Diffuser VSD50	2400		N/A		17000 59.5	
EG			1	Office	Extract Grille	TROX Linear Slot Diffuser VSD50	200		N/A		5000 59.5	
EG			1	Dining	Extract Grille	TROX Linear Slot Diffuser VSD50	400		N/A		5000 59.5	
EG			2	Discovery Gallery	Linear Return Air Grille	Linear Fixed Blade AH - 15 - AG	360		N/A		8000 100	
EG			1	Office 2	Linear Return Air Grille	TROX Linear Slot Diffuser VSD50	200		N/A		2000 59.5	
EG			1	Disabled WC	Extract Grille	TROX Disc Valve LVS	22		100 Ø		100 Ø	
EG			1	Baby Changing	Extract Grille	TROX Disc Valve LVS	28		125 Ø		125 Ø	
EG			2	Kids WC & Change	Extract Grille	TROX Disc Valve LVS	17		100 Ø		100 Ø	
First Floor												
EG			1	Disabled WC	Extract Grille	TROX Disc Valve LVS	22		125 Ø		125 Ø	
EG			1	Baby Changing	Extract Grille	TROX Disc Valve LVS	31		125 Ø		125 Ø	
EG			1	Male WC - Cubicle	Extract Grille	TROX Disc Valve LVS	10		100 Ø		100 Ø	
EG			1	Female WC - Cleaners Cupboard	Extract Grille	TROX Disc Valve LVS	10		100 Ø		100 Ø	
Second Floor												
N/A (Extract via ceiling void)												

2.02.28 - Fan Coil Unit Air Conditioning Equipment

Location..... Various
 Manufacturer Lennox International Inc.
 Type..... CHW/LPHW Ducted

Reference	Location	Model
<u>Lower Ground Floor</u>		
FCU-LG-01 & 02	Learn Space 1	LSNE-941L
FCU-LG-03 & 04	Learn Space 2	LSNE-941L
FCU-LG-05 & 06	Wet Learning	LSNE-941L
FCU-LG-07 & 08	Group Area	LSNE-941L
FCU-LG-09	Office	LSNE-441L
FCU-LG-10		LSNE-441L
FCU-LG-11 & 12	Templar Study A	LSNE-941L
FCU-LG-13 & 14	Templar Study B	LSNE-941L
<u>Ground Floor</u>		
FCU-G-01 to 07	Café	LSNE-941L
FCU-G-08 to 14	Entrance/Foyer	LSNE-941L
FCU-G-15 to 17	Retail	LSNE-941L
FCU-G-18	Retail	LSNE-441L
FCU-G-19 to 24	Kids Zone	LSNE-441L
FCU-G-25	Office	LSNE-941L
FCU-G-26 to 27	Dining Room	LSNE-941L

2.02.29 - DX Refrigerant Air Conditioning Equipment

Sub-Contractor Aerocool Limited
 Manufacturer Mitsubishi Electric Limited

In-Room Units

Reference	Location	Type	Model
AC 1	Lower Ground Floor Frame Room	Wall Mounted	PKA-RP50HAL
AC 2	Lower Ground Floor Store Room	Ceiling Cassette	PLA-ZRP71BA
AC 3	Ground Floor Control Room 1A	Wall Mounted	PKA-RP50HAL
AC 4	Lower Ground Floor Film Store	Wall Mounted	PKA-RP60HAL
AC 5	Lower Ground Floor Control Room 1B	Wall Mounted	PKA-RP60HAL
AC 6	Lower Ground Floor Control Room 1B	Wall Mounted	PKA-RP60HAL
AC 7	First Floor AV Control 2	Wall Mounted	PKA-RP50HAL

Condenser Units

Reference	Location	Model
CU 1	External Roof Plant Area	PUHZ-ZRP50VKA
CU 2	External Roof Plant Area	PUHZ-ZRP71VKA
CU 3	External Roof Plant Area	PUHZ-ZRP50VKA
CU 4	External Roof Plant Area	PUHZ-ZRP60VKA
CU 5	External Roof Plant Area	PUHZ-ZRP60VKA
CU 6	External Roof Plant Area	PUHZ-ZRP60VKA
CU 7	External Roof Plant Area	PUHZ-ZRP50VKA

Controllers

Type Hard Wired, Wall Mounted
 Model PAR-32MAA

2.03.10 - Trench Heaters TH/G/01 & 02

Location	Ground Floor Entrance
Manufacturer	Fraser Engineering Limited
Type	LPHW
Model	LTU/D

Reference should be made to the Fraser Engineering Limited information within Section Ten of this manual for full technical details.

2.03.11 - Overdoor Air Curtains DC/01 & 02

Location	See Table Below
Manufacturer	JS Air Curtains Limited
Type	LPHW Heated, Exposed
Electrical Supply	230V/1Ph/50Hz

Reference	Location	Model	Air Flow (m ³ /h)	Max Heating Capacity (kW)
DC/01	Ground Floor Draught Lobby	ZEN G 1500 P	3000	16.02
DC/02	Lower Ground Floor Staff Entrance	ZEN G 2500 P	5250	31.16

2.03.12 - Electric Underfloor Heating

Location	Toilets
Manufacturer	CTD Chester Limited

Reference should be made to the CTD Chester Limited information within Section Ten of this manual for full technical details.