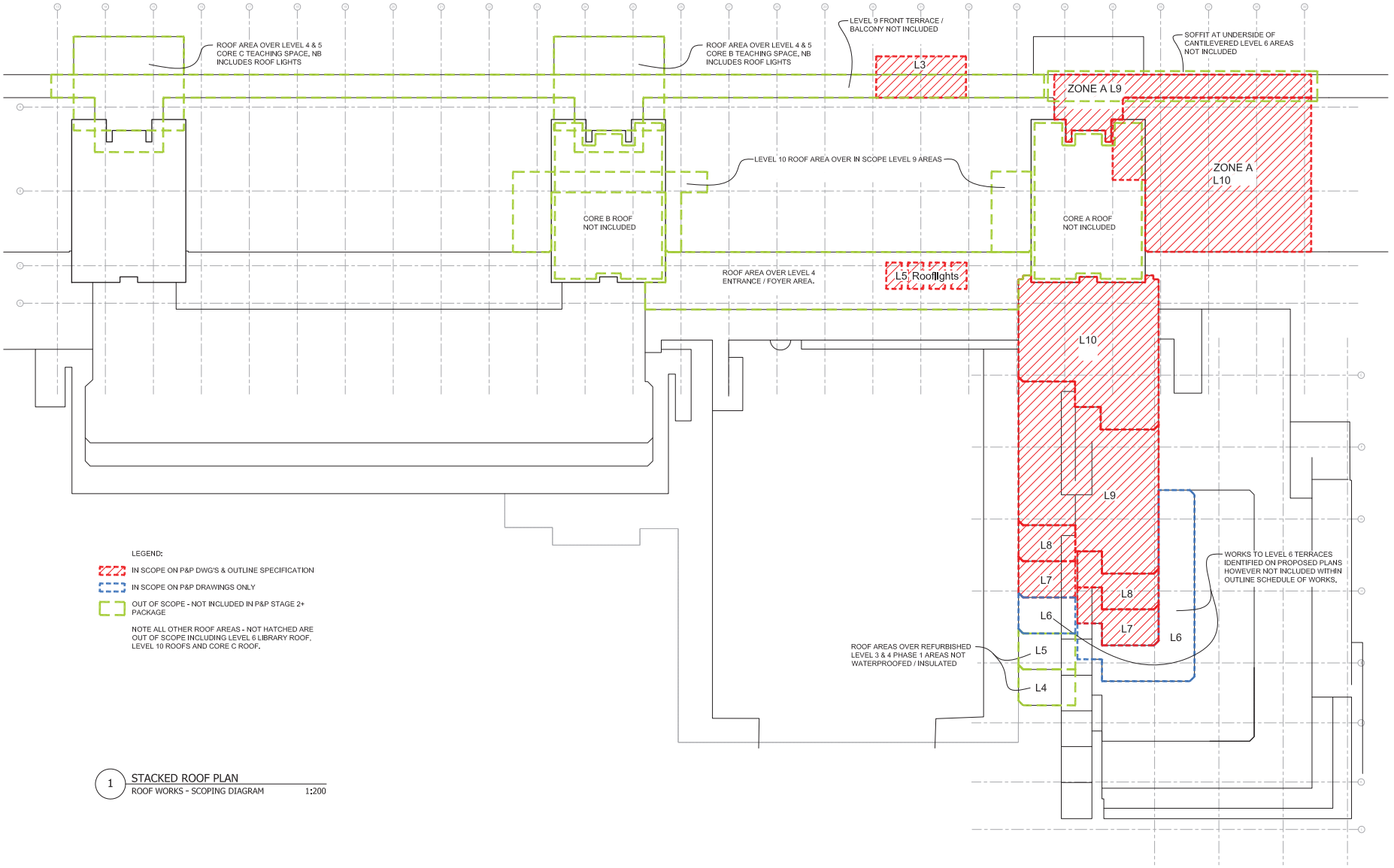
FAÇADE BREAK-IN CALCULATION														
Project Name	UCL Institute of Education													
Room or space	Office - Condition 2													
Date	06/04/20													
ROOM CONSTANT & FAÇADE AREA														
Façade area (incl. window)	*30.0 m2*		**Area of the external wall**	11 m2	**Room reverberation time (s)**									
Area of the louver	*0.0 m2*													
Area of the windows	*19.0 m2*				Tmf	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz			
Area of the roof/ceiling	*100.0 m2*		**Area of exposed envelope**	####	1.0	1.0	1.0	1.0	1.0	1.0	1.0			
Room Depth (x)	*10.0 m*													
Room Width (y)	*10.0 m*		**Room Volume**	####										
Ceiling height (z)	*3.0 m*													
DISTANCE ATTENUATION CALCULATION														
Distance correction	*No*		**Calculated Distance Attenuation**	-										
Type of distance correction	*Line source*													
Distance from source to microphone	-													
Distance from source to receiver	-													
FREE FIELD LEVELS AT 1m FROM THE NOISE SENSITIVE FAÇADE														
LAeq					dB(A)	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz			
	Free Field Leq in octave bands (dB)				59	63	57	56	54	52	45			
	Resultant Free-Field Leq with distance attenuation (dB(A))				59	63	57	56	54	52	45			
LAmax (if applicable)					dB(A)	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz			
	Free Field Lfmax in octave bands				74	76	72	70	70	66	61			
	Resultant Free-Field LAmax with distance				74	76	72	70	70	66	61			
SOUND REDUCTION PROPERTIES OF BUILDING ELEMENTS														
					125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	R_w	R_w+C_{Tr} (dB)		
Window (R_w)	*Rw+Ctr 25dB BS12354 4/20/4*				21	17	25	35	37	31	29	25		
Louver (Rw)	*No Louver*				0	0	0	0	0	0	0	0		
External wall Construction (Rw)	*Typical external wall construction*				46	44	46	54	62	67	52	49		
Roof Construction (Rw)	*Typical roof construction*				99	99	99	99	99	99	99	99		
					125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	$D_{n,ew}$ (dB)			
Trickle Vent ($D_{n,e,w}$)	*No Vent*	0 Units			200	200	200	200	200	200	-			
CALCULATED INTERNAL LAeq AND LAF,max LEVELS														
					125Hz	250Hz	500Hz	1kHz	2kHz	4kHz				
Calculated LAeq in the receiver room (dB)					41	39	30	18	14	13				
Calculated LAFmax in the receiver room (dB)					50	50	40	30	24	25				

L_{Aeq} (125-4000Hz)	L_{Amax} (125-4000Hz)
33 dB(A)	**43 dB(A)**

Appendix B Roof Terrace Scope



1 STACKED ROOF PLAN
ROOF WORKS - SCOPING DIAGRAM 1:200

Notes

PRELIMINARY

Rev	Description	Date
-	-	--.--.2019

Client: overbury

Job title:
University College London
Institute of Education
Phase 2
20 Bedford Way, WC1H 0AL

Drawing title:
IOE
Stacked Plan
Roof Works - Scoping Diagram

Scale	Date	Drawn
1:200 @A1	Jan 20	MJR

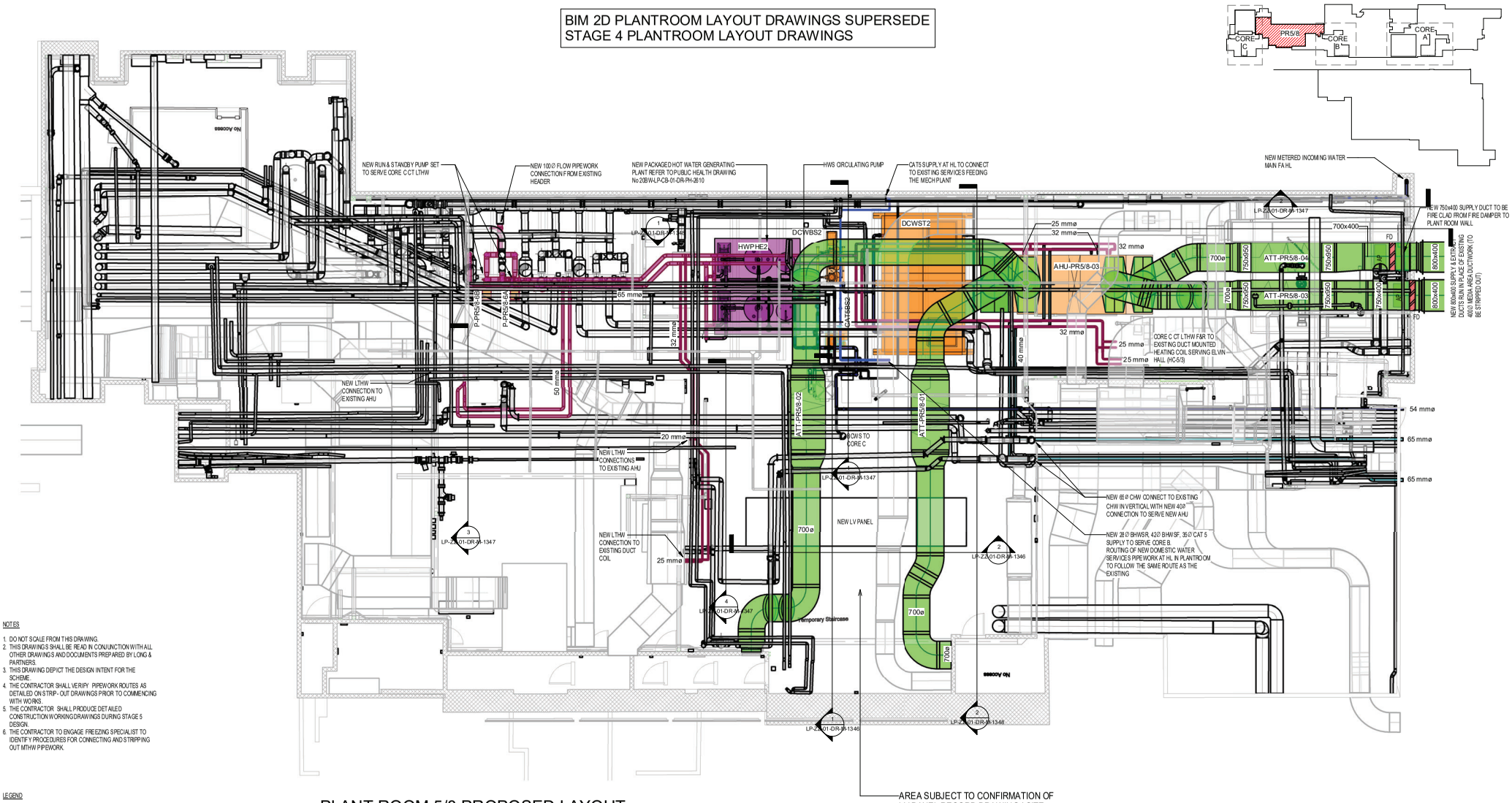
ARCHITON LLP
CHARTERED ARCHITECTS . DESIGN . PLANNING CONSULTANTS . DEVELOPMENT . BUILDING COST MANAGEMENT
REGENCY HOUSE
17 WEST STREET
EPSOM KT18 7RL
TEL:01372 745600
FAX:01372 745016
Email:info@architon.com

Drawing No
3147 - SK2008

ARCHITON LLP certified to:
BS EN ISO 9001
BS EN ISO 14001
IIP Accreditation

Appendix C Level 1 and 2 – Plant Room 5/8 Information

BIM 2D PLANTROOM LAYOUT DRAWINGS SUPERSEDE
STAGE 4 PLANTROOM LAYOUT DRAWINGS



NOTES

1. DO NOT SCALE FROM THIS DRAWING.
2. THIS DRAWING IS SHALL BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND DOCUMENTS PREPARED BY LONG & PARTNERS.
3. THIS DRAWING DEPICT THE DESIGN INTENT FOR THE SCHEME.
4. THE CONTRACTOR SHALL VERIFY PIPEWORK ROUTES AS DETAILED ON STRIP- OUT DRAWINGS PRIOR TO COMMENCING WITH WORKS.
5. THE CONTRACTOR SHALL PRODUCE DETAILED CONSTRUCTION WORKING DRAWINGS DURING STAGE 5 DESIGN.
6. THE CONTRACTOR TO ENGAGE FREEZING SPECIALIST TO IDENTIFY PROCEDURES FOR CONNECTING AND STRIPPING OUT MTHW PIPEWORK.

LEGEND

IV	ISOLATION VALVE
FC	FLUSHING CONNECTIN
OP	ORIFICE PLATE
3PCV	3 PORT CONTROL VALVE
MPICV	MOTORISED PRESSURE INDEPENDENT CONTROL VALVE
STR	STRAINER
TP	TEST POINT
AV	AIR VENT
DC	DRAIN COCK
AP	ACCESS PANEL
VCD	VOLUME CONTROL DAMPER
FD	FIRE DAMPER
CS	COMMISSIONING SET (FODRV)

1 PLANT ROOM 5/8 PROPOSED LAYOUT
1 : 50

Rev	Date	Description	Drawn	Apd
C1	22.07.22	CONTRACT ISSUE	BIM	NLB
C0	06.05.22	CONTRACT ISSUE	BIM	NLB
0	26.02.21	STAGE 4	CAD	SB

Architects Model:
Structures Model:
Other Model:

Issue Status
CONTRACT ISSUE

Project
UCL IOE, 20 BEDFORD WAY PHASE 2

Title
MECH SERVICES - PROPOSED PLANT ROOM 5/8 - LEVEL 1 & 2

Scale	Designed By	Checked By	Date
1 : 50@A1	SB	AJ	FEB'21

building service consultants
Fifth Floor, 120 Old Broad Street, London EC2 1AR
T +44(0)2079324600
F +44(0)2079324601
E info@longandpartners.co.uk
W www.longandpartners.co.uk

20BW-LP-ZZ-01-DR-M-1340 | **C1**

TECHNICAL SPECIFICATION SHEET

Ventilation Equipment Ltd

Project: UCL IOE Bedford Way
Quotation Reference: Q10688
Date: 4th July 2022

Customer Unit Reference	**AHU-3**	**Serving**	**AHU-5/8-03**	
Unit Reference	Q10688-03-23			
Model Reference	Non-standard			
AHU Details				
Design Supply Air Volume	1.89	m^3/s		
External Static Pressure	450	Pa		
Unit Velocity	1.51	m/s		
Design Extract Air Volume	1.89	m^3/s		
External Static Pressure	450	Pa		
Unit Velocity	1.58	m/s		
Energy Use				
	Supply	Extract	Overall	
Specific Fan Power	1.28	1.14	2.42	$kW/(m^3/s)$
AHU Construction			**Construction**	
Framework	56 mm		Unit Location	Internal
Framework Coating	Anodized		Weather Roof	None
Panel Depth	45 mm		Baseframe	150 x 75 x 2.0 Folded Galv
External Panel Finish	Mica Coated steel 0.90mm		Casing performance (EN 1886 Standard)	
Internal Panel Finsh	Galv Sheet 0.9mm		Leakage Class	L1
Panel Insulation	Mineral Wool 45mm		Casing strength	D1
			Thermal Transmittance	T3
			Thermal Bridge	TB3
Overall Unit Dimensions				
	Length	Width	Height	Weight (Per Unit)
	3350 mm	1400 mm	2500 mm	1384 kg
Section Weights and Dimensions				
Section No.	Length	Width	Height	Weight Approx +/-5%
A	1050 mm	1400 mm	1200 mm	267 kg
B	600 mm	1400 mm	2350 mm	259 kg
C	1700 mm	1400 mm	1200 mm	473 kg
D	850 mm	1400 mm	1150 mm	141 kg
E	1050 mm	1400 mm	1150 mm	243 kg
Inlet Section			**Construction**	
Component	Damper		Casing	Aluminium - Class 2
Air Pressure Drop	1.00	Pa	Control	Extended Spindle

Accessories

Damper actuators to be provided and fitted by others.
Traffolyte Component label

Heating Coil			**Construction**	
Air On / Off	-4.00/5.0	°C/°C	Casing Material	Galvanised
Duty	20.62	kW	Tube Material	Copper
Water(Inlet)/(Outlet)	75.00/55.00	°C/°C	Fin Material	Aluminium
Water PD	8	kPa	Connection Size	1 x 1"(F) / 1 x 1"(R)
Water Flow Rate	0.25	L/s		
Air Pressure Drop	9.00	Pa		
Internal Volume	9.50	l		

Accessories

Valve and actuator to be supplied and fitted by others
Traffolyte Component label

TECHNICAL SPECIFICATION SHEET

Ventilation Equipment Ltd

Project: UCL IOE Bedford Way
Quotation Reference: Q10688
Date: 4th July 2022

Customer Unit Reference	**AHU-3**	**Serving**	**AHU-5/8-03**
Unit Reference	Q10688-03-23		
Model Reference	Non-standard		

Panel and Bag Filter			**Construction**	
Panel Clean PD	67	Pa	Panel Grade	Coarse 85%(ISO16890)
Panel Mean	98	Pa	Panel Media	Card Frame-Cotton/Synthetic Media
Panel Recommended Dirty	150	Pa	Panel Size 1 / Qty	4 x 594 x 495 x 45 mm
Bag Clean PD	80	Pa	Bag Grade	ePM1 60%(ISO16890)
Bag Mean	263	Pa	Bag Media	25mm Galv Frame/Glass Fibre
Bag Recommended dirty	450	Pa	Bag Size 1 / Qty	4 x 592 x 492 x 360mm

Accessories

Factory fitted Dwyer Minihelic gauge (Range 0-250 Pa)
Factory fitted Dwyer Minihelic gauge (Range 0-500 Pa)
Traffolyte Component label

Heat Wheel Section				**Construction**
	Winter	**Summer**		
Supply Air On (db/RH)	-4.00/100.0	30.10/44.4	°C/%	Matrix Type 1: P-Condensation
Supply Air Off (db/RH)	14.93/49.1	24.30/62.4	°C/%	Product Type
Exhaust Air On (db/RH)	21.00/50.1	22.00/50.0	°C/%	
Exhaust Air Off (db/RH)	3.62/95.0	27.82/35.3	°C/%	
Heat Recovery	56.83	-13.27	kW	
Efficiency	77.7	74.6	%	
Supply Pressure Drop	129.76	159.70	Pa	
Exhaust Pressure Drop	151.70	152.58	Pa	

Accessories

Heat exchanger selection compliant to ERP2018 (Ecodesign directive 1253/2014)
Condensation Rotor for sensible heat recovery
Variable speed drive_factory fitted & wired (Internally to Heat Wheel section) for integration into the control system (Requires 0-10v input signals)
Factory fitted IP54 external terminal box c/w wiring to Heat Wheel Controller
Manufacturers site attendance for start-up of Thermal Wheel (see additional costs)
Traffolyte Component label

Supply Fan - Dual Fan (50%-50%)			**Construction**	
Design Air Volume	1.89	m³/s	Impeller	Backward Curve
Total Fan Resistance	1152	Pa	Internal Isolation	Rubber
Fan Speed	3278	r/min		
Frequency @ Design Speed	56.92	Hz		
Max Frequency	64.00	Hz		
Maximum Fan Speed	3690	r/min		
Efficiency	77.68	%		

Motor Data (Electrical Loads per Fan)			**Construction**	
FLC	4.40	Amps	Type	AC
Total Input Power	1.90	kW	Rating	IE3
Motor Power	2.20	kW		
Motor Speed	2880	r/min		
Electrical Supply	400/3/50.00			

TECHNICAL SPECIFICATION SHEET

Ventilation Equipment Ltd

Project: UCL IOE Bedford Way
Quotation Reference: Q10688
Date: 4th July 2022

Customer Unit Reference	**AHU-3**	**Serving**	**AHU-5/8-03**
Unit Reference	Q10688-03-23		
Model Reference	Non-standard		

Accessories

Factory fitted IP44 Internal bulkhead light (42W) wired to an IP66 external switch
Factory fitted viewport
Removable wire mesh guard is fitted behind the fan access door.
Over temperature protection thermister (For integration in to the controls system)
Fan Label kit, Fan Access, Traffolyte Warning label - Fan run down, Danger label - Safety, Electrical Isolation

Inlet Flexible Connection
Factory Fitted Inlet Guard
Fan motor(s) will be wired with screened cable to an externally mounted IP66 rated isolator(s)
IP54 rated VSD drive(s) factory fitted externally on the access side of the unit and wired to the fan motor(s) with screened cable.

Chilled Water Coil			**Construction**	
Air On (db/wb)	30.10/21.00	°C/°C	Casing Material	Galvanised
Air Off (db/wb)	20.0/17.3	°C/°C	Tube Material	Copper
Duty	26.21	kW	Fin Material	Aluminium
Water(Inlet)/(Outlet)	7.00/12.00	°C/°C	Connection Size	1 x 1½"(F) / 1 x 1½"(R)
Water PD	17	kPa	Eliminators	not needed BUT fit P400
Water Flow Rate	1.25	L/s	Drain Tray	7 S Steel draintray
Face Velocity	1.99	m/s		
Air Pressure Drop	7.00	Pa		
Internal Volume	10.60	l		

Accessories

Valve and actuator to be supplied and fitted by others
Traffolyte label - Drain Trap Instruction
Traffolyte Component label

Heating Coil			**Construction**	
Air On / Off	5.00/22.0	°C/°C	Casing Material	Galvanised
Duty	38.94	kW	Tube Material	Copper
Water(Inlet)/(Outlet)	75.00/55.00	°C/°C	Fin Material	Aluminium
Water PD	11	kPa	Connection Size	1 x 1"(F) / 1 x 1"(R)
Water Flow Rate	0.48	L/s		
Air Pressure Drop	1.00	Pa		
Internal Volume	7.60	l		

Accessories

Valve and actuator to be supplied and fitted by others
Traffolyte Component label

Outlet Section			**Construction**	
Component	Damper		Casing	Aluminium - Class 2
Air Pressure Drop	1.00	Pa	Control	Manual

Accessories

Damper fitted with quadrant for manual adjustment (Air Balancing by others)
Traffolyte Component label

Inlet Section			**Construction**	
Component	Damper		Casing	Aluminium - Class 2
Air Pressure Drop	1.00	Pa	Control	Manual

Accessories

Damper fitted with quadrant for manual adjustment (Air Balancing by others)
Traffolyte Component label

TECHNICAL SPECIFICATION SHEET

Ventilation Equipment Ltd

Project: UCL IOE Bedford Way
Quotation Reference: Q10688
Date: 4th July 2022

Customer Unit Reference	**AHU-3**	**Serving**	**AHU-5/8-03**	
Unit Reference	Q10688-03-23			
Model Reference	Non-standard			

Bag Filter			**Construction**	
Clean PD	80	Pa	Grade	ePM1 60%(ISO16890)
Mean	263	Pa	Media	25mm Galv Frame/Glass Fibre
Recommended dirty	450	Pa	Withdrawal	Side
			Size 1 / Qty	4 x 592 x 492 x 360 mm

Accessories

Factory fitted Dwyer Minihelic gauge (Range 0-500 Pa)
Traffolyte Component label

Exhaust Fan - Dual Fan (50%-50%)			**Construction**	
Design Air Volume	1.89	m^3/s	Impeller	Backward Curve
Total Fan Resistance	1000	Pa	Internal Isolation	Rubber
Fan Speed	2571	r/min		
Frequency @ Design Speed	77.43	Hz		
Max Frequency	89.00	Hz		
Maximum Fan Speed	3000	r/min		
Efficiency	77.94	%		

Motor Data (Electrical Loads per Fan)			**Construction**	
FLC	4.40	Amps	Type	AC
Total Input Power	1.08	kW	Rating	IE3
Motor Power	2.20	kW		
Motor Speed	2880	r/min		
Electrical Supply	400/3/50.00			

Accessories

Factory fitted IP44 Internal bulkhead light (42W) wired to an IP66 external switch
Factory fitted viewport
Removable wire mesh guard is fitted behind the fan access door.
Over temperature protection thermister (For integration in to the controls system)
Fan Label kit, Fan Access, Traffolyte Warning label - Fan run down, Danger label - Safety, Electrical Isolation

Inlet Flexible Connection
Factory Fitted Inlet Guard
Fan motor(s) will be wired with screened cable to an externally mounted IP66 rated isolator(s)
IP54 rated VSD drive(s) factory fitted externally on the access side of the unit and wired to the fan motor(s) with screened cable.

Outlet Section			**Construction**	
Component	Damper		Casing	Aluminium - Class 2
Air Pressure Drop	1.00	Pa	Control	Extended Spindle

Accessories

Damper actuators to be provided and fitted by others.
Traffolyte Component label

TECHNICAL SPECIFICATION SHEET

Ventilation Equipment Ltd

Project: UCL IOE Bedford Way
Quotation Reference: Q10688
Date: 4th July 2022

Customer Unit Reference	**AHU-3**	**Serving**	**AHU-5/8-03**
Unit Reference	Q10688-03-23		
Model Reference	Non-standard		

AHU Acoustic Data:

Acoustic Data (Supply Fan Sound Power Level): Per Fan

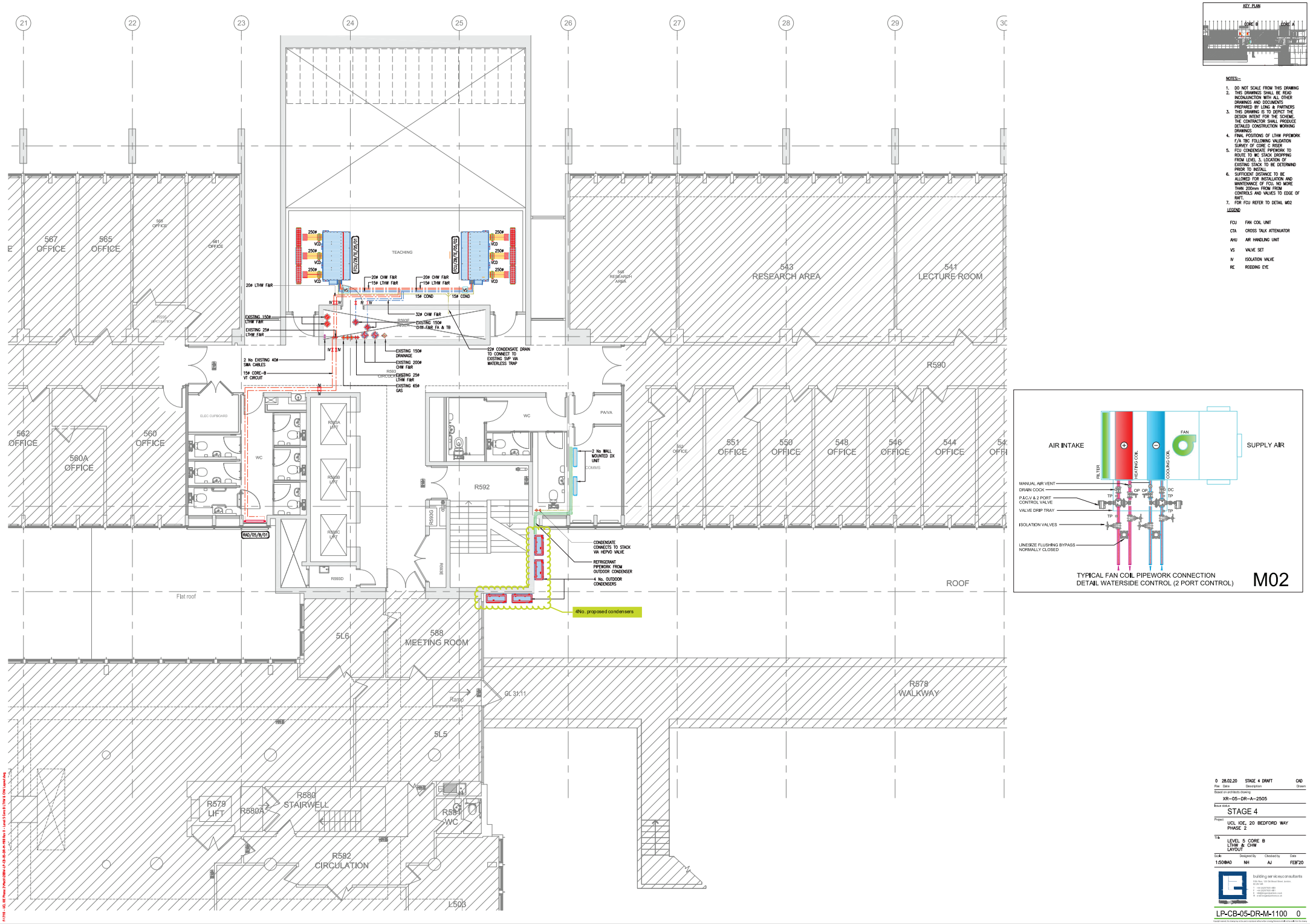
Frequency(Hz)	63	125	250	500	1K	2K	4K	8K
Supply Fan Inlet Lw (dB):	74	70	72	80	73	74	71	67
Supply Fan Outlet Lw (dB):	71	74	77	73	85	83	78	73

Acoustic Data (Extract Fan Sound Power Level): Per Fan

Frequency(Hz)	63	125	250	500	1K	2K	4K	8K
Extract Fan Inlet Lw (dB)	63	62	72	69	65	65	63	59
Extract Fan Outlet Lw (dB)	68	68	77	75	77	72	68	64

The In-duct Sound Power Level Spectra are in dB re-1pW.
The fan sound power levels shown above do not include for the effects of mounting the fans within the AHU section(s). Please allow for the additional correction of 6db across the spectrum.

Appendix D Level 5 – Condenser Layouts



NOTES:-

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3. THIS DRAWING IS TO DEPICT THE DESIGN INTENT FOR THE SCHEME, THE CONTRACTOR SHALL PRODUCE DETAILED CONSTRUCTION WORKING DRAWINGS
4. FINAL POSITIONS OF LTHW PIPEWORK F/A TBC FOLLOWING VALIDATION SURVEY OF CORE C RISER
5. FCU CONDENSATE PIPEWORK TO ROUTE TO WC STACK DROPPING FROM LEVEL 1, LOCATION OF EXISTING STACK TO BE DETERMIND PRIOR TO INSTALL
6. SUFFICIENT DISTANCE TO BE ALLOWED FOR INSTALLATION AND MAINTENANCE OF FCU, NO MORE THAN 200mm FROM FROM CONTROLS AND VALVES TO EDGE OF RAFT.
7. FOR FCU REFER TO DETAIL M02

LEGEND

FCU	FAN COIL UNIT
CTA	CROSS TALK ATTENUATOR
AHU	AIR HANDLING UNIT
VS	VALVE SET
IV	ISOLATION VALVE
RE	RODDING EYE

TYPICAL FAN COIL PIPEWORK CONNECTION DETAIL WATERSIDE CONTROL (2 PORT CONTROL)

M02

Rev	Date	Description	Drawn
0	28.02.20	STAGE 4 DRAFT	CAD

Based on architects drawing: XR-05-DR-A-2505

Issue status: STAGE 4

Project: UCL IOE, 20 BEDFORD WAY PHASE 2

Title: LEVEL 5 CORE B LTHW & CHW LAYOUT

Scale	Designed By	Checked by	Date
1:50@A0	NH	AJ	FEB'20

building services consultants

LP-CB-05-DR-M-1100 0

Air Conditioning | Product Information

PKA-M R32
Wall Mounted System
Power Inverter Heat Pump

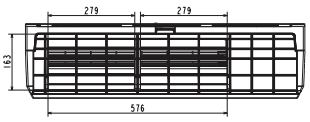
PKA-M INDOOR UNITS		PKA-M35LA	PKA-M50LA	PKA-M60KA	PKA-M71KA	PKA-M100KA	PKA-M100KA
CAPACITY (kW)	Heating (nominal)	4.1 (1.6-5.2)	5.0 (2.5-7.3)	7.0 (2.8-8.2)	8.0 (3.5-10.2)	11.2 (4.5-14.0)	11.2 (4.5-14.0)
	Cooling (nominal)	3.6 (1.6-4.5)	4.6 (2.3-5.6)	6.1 (2.7-6.7)	7.1 (3.3-8.1)	9.5 (4.9-11.4)	9.5 (4.9-11.4)
	Heating (UK)	3.5 (1.35-4.4)	4.25 (2.15-6.2)	5.95 (2.4-6.95)	6.8 (3.0-8.65)	9.5 (3.85-11.9)	9.5 (3.85-11.9)
	Cooling (UK)	3.3 (1.45-4.15)	4.23 (2.1-5.15)	5.5 (2.5-6.15)	6.55 (3.05-7.45)	9.2 (4.5-10.5)	9.2 (4.5-10.5)
SHF (nominal)		0.74	0.66	0.86	0.78	0.73	0.73
COP / EER (nominal)		3.94 / 4.20	3.72 / 3.71	4.04 / 3.91	3.78 / 3.81	3.61 / 3.95	3.61 / 3.95
SCOP (ηsh) / SEER ηsc) (BS EN14825)		4.0 / 6.5	4.3 / 6.6	4.2 / 6.8	4.3 / 6.8	4.4/ 6.5	4.4 / 6.4
ErP ENERGY EFFICIENCY CLASS	Heating/Cooling	A+ / A++	A+ / A++	A+ / A++	A+ / A++	A+ / A++	A+ / A++
AIRFLOW (l/s)	Lo-Mi2-Mi1-Hi	125-137-153-182	125-137-153-182	300-333-367	300-333-367	333-383-433	333-383-433
PIPE SIZE mm (in)	Gas	12.7 (1/2")	12.7 (1/2")	15.88 (5/8")	15.88 (5/8")	15.88 (5/8")	15.88 (5/8")
	Liquid	6.35 (1/4")	6.35 (1/4")	9.52 (3/8")	9.52 (3/8")	9.52 (3/8")	9.52 (3/8")
SOUND PRESSURE LEVEL (dBA)	Lo-Mi2-Mi1-Hi	34-37-40-43	34-37-40-43	39-42-45	39-42-45	41-45-49	41-45-49
SOUND POWER LEVEL (dBA)		60	60	64	64	65	65
DIMENSIONS (mm)	Width x Depth x Height	898 x 237 x 299	898 x 237 x 299	1170 x 295 x 365	1170 x 295 x 365	1170 x 295 x 365	1170 x 295 x 365
WEIGHT (kg)		12.6	12.6	21	21	21	21
ELECTRICAL SUPPLY		Fed by Outdoor Unit	Fed by Outdoor Unit	Fed by Outdoor Unit	Fed by Outdoor Unit	Fed by Outdoor Unit	Fed by Outdoor Unit
FUSE RATING (BS88) - HRC (A)		6	6	6	6	6	6
INTERCONNECTING CABLE No. CORES		4	4	4	4	4	4
WIRED REMOTE CONTROLLER REFERENCE		PAR-40MAA	PAR-40MAA	PAR-40MAA	PAR-40MAA	PAR-40MAA	PAR-40MAA
WIRELESS REMOTE CONTROLLER REFERENCE		PAR-FL32MA	PAR-FL32MA	PAR-FL32MA	PAR-FL32MA	PAR-FL32MA	PAR-FL32MA

PUZ-ZM OUTDOOR UNITS		PUZ-ZM35VKA	PUZ-ZM50VKA	PUZ-ZM60VHA	PUZ-ZM71VHAR1	PUZ-ZM100VKAR1	PUZ-ZM100YKAR1 ③
SOUND PRESSURE LEVEL (dBA)	Heating/Cooling	46 / 44	46 / 44	49 / 47	49 / 47	51 / 49	51 / 49
SOUND POWER LEVEL (dBA)	Cooling	65	65	67	67	69	69
WEIGHT (kg)		46	46	70	70	116	123
DIMENSIONS (mm)	Width x Depth x Height	809 x 300 x 630	809 x 300 x 630	950 x 330 + 25 x 943	950 x 330 + 25 x 943	1050 x 330 + 40 x 1338	1050 x 330 + 40 x 1338
ELECTRICAL SUPPLY		220-240v, 50Hz	220-240v, 50Hz	220-240v, 50Hz	220-240v, 50Hz	220-240v, 50Hz	380-415v, 50Hz
PHASE		Single	Single	Single	Single	Single	Three
SYSTEM POWER INPUT (kW)	Heating/Cooling (nominal)	1.040 / 0.869	1.347 / 1.239	1.732 / 1.560	2.116 / 1.863	3.102 / 2.405	3.102 / 2.405
	Heating/Cooling (UK)	0.81 / 0.84	1.12 / 1.12	1.25 / 1.65	1.54 / 1.92	2.47 / 2.06	2.47 / 2.06
STARTING CURRENT (A)		5.0	5.0	6.0	6.0	13.0	6.0
SYSTEM RUNNING CURRENT (A)	Heating/Cooling [MAX]	4.97 / 4.31 [13.4]	5.98 / 5.57 [13.4]	7.41 / 6.65 [19.4]	9.10 / 7.96 [19.4]	13.46 / 10.45 [27.1]	4.49 / 5.45 [8.6]
FUSE RATING (BS88) - HRC (A)		16	16	25	25	32	16
MAINS CABLE No. CORES		3	3	3	3	3	5
MAX PIPE LENGTH (m)		50	50	55	55	100	100
MAX HEIGHT DIFFERENCE (m)		30	30	30	30	30	30
CHARGE REFRIGERANT (kg) / CO_2 EQUIVALENT (t) - R32 (GWP 675) - 30m		2.0 / 1.35	2.00 / 1.35	2.80 / 1.89	2.80 / 1.89	4.00 / 2.70	4.00 / 2.70
MAX ADDITIONAL REFRIGERANT (kg) / CO_2 EQUIVALENT (t) - R32 (GWP 675)		0.30 / 0.20	0.30 / 0.20	0.80 / 0.54	0.80 / 0.54	2.80 / 1.89	2.80 / 1.89

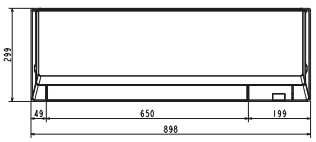
③ Three Phase

PKA-M35/50LA DIMENSIONS

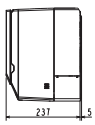
UPPER VIEW



FRONT VIEW

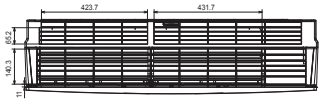


SIDE VIEW

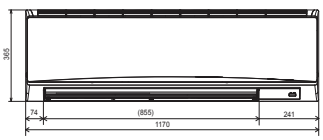


PKA-M60/71/100KA DIMENSIONS

UPPER VIEW



FRONT VIEW



SIDE VIEW

MITSUBISHI ELECTRIC
Changes for the Better

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email: **air.conditioning@meuk.mee.com**
les.mitsubishielectric.co.uk

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Mitsubishi Electric Living Environmental Systems UK
Mitsubishi Electric Cooling and Heating UK
mitsubishielectricuk_les
Mitsubishi Electric Living Environmental Systems UK
BLOG thehub.mitsubishielectric.co.uk

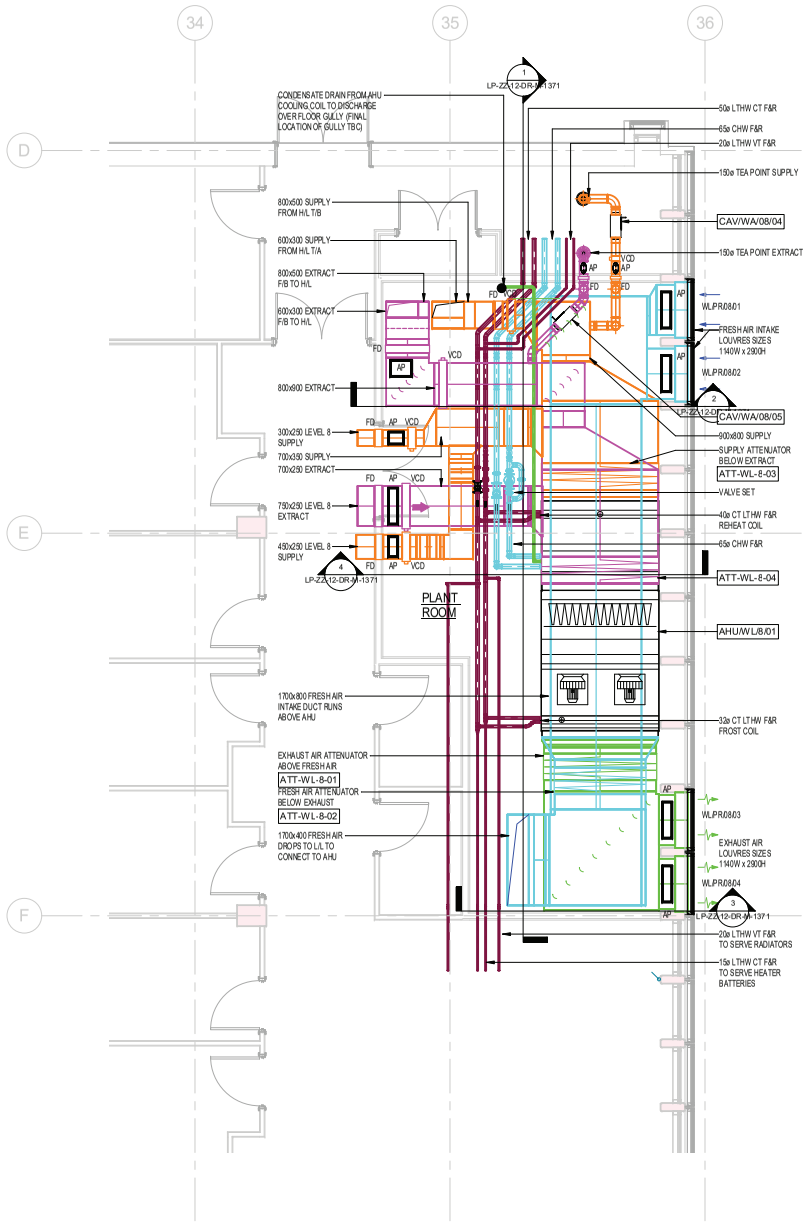
UNITED KINGDOM Mitsubishi Electric Europe Living Environment Systems Division, Travellers Lane, Hatfield, Hertfordshire, AL10 8XB, England. Telephone: 01707 282880 Fax: 01707 278881
IRELAND Mitsubishi Electric Europe, Westgate Business Park, Ballymount, Dublin 24, Ireland. Telephone: (01) 419 8800 Fax: (01) 419 8890 International code: (003531)

Note: The fuse rating is for guidance only. Please refer to the relevant databook for detailed specification. It is the responsibility of a qualified electrician/electrical engineer to select the correct cable size and fuse rating based on current regulation and site specific conditions. Mitsubishi Electric's air conditioning equipment and heat pump systems contain a fluorinated greenhouse gas, R410A (GWP:2088), R32 (GWP:675), R407C (GWP:1774), R134a (GWP:1430), R513A (GWP:631), R454B (GWP:466), R1234ze (GWP:7) or R1234yf (GWP:4). *These GWP values are based on Regulation (EU) No 517/2014 from IPCC 4th edition. In case of Regulation (EU) No.626/2011 from IPCC 3rd edition, these are as follows. R410A (GWP:1975), R32 (GWP:550), R407C (GWP:1650) or R134a (GWP:1300).

Effective as of May 2020

Green Gateway greengateway.mitsubishielectric.co.uk

Appendix E Level 8 – AHU Unit Information



NOTES -

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6. THE CONTRACTOR TO ENGAGE FREEZING SPECIALIST TO IDENTIFY PROCEDURES FOR CONNECTING AND STRIPPING OUT MTHW PIPEWORK.

LEGEND

VCD	VOLUME CONTROL DAMPER
FD	FIRE DAMPER
AP	ACCESS PANEL
	ATTENUATOR
IV	ISOLATION VALVE
FC	FLUSHING CONNECTION
OP	ORIFICE PLATE
3PCV	3 PORT CONTROL VALVE
MPICV	MOTORISED PRESSURE INDEPENDENT CONTROL VALVE
STR	STRAINER
TP	TEST POINT
AV	AIR VENT
DC	DRAIN COCK

Rev	Date	Description	Drawn	Apd
C0	06.05.22	CONTRACT ISSUE	BIM	NLB
0	26.02.21	STAGE 4	CAD	SB

Architects Model:
Structures Model:
Other Model:

Issue Status
CONTRACT ISSUE

Project
UCL IOE, 20 BEDFORD WAY PHASE 2

Title
MECHANICAL SERVICES PROPOSED LAYOUT PLANT ROOM 02 - LEVEL 08 WING

Scale	Designed By	Checked By	Date
1 : 50@A1	Designer	Checker	02/12/21

building service consultants
Fifth Floor, 120 Old Broad Street, London EC2 1AR
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E info@longandpartners.co.uk
W www.longandpartners.co.uk
long and partners

20BW-LP-ZZ-08-DR-M-1370 | **C0**

TECHNICAL SPECIFICATION SHEET

Ventilation Equipment Ltd

Project:	UCL IOE Bedford Way
Quotation Reference:	Q10688
Date:	4th July 2022

Customer Unit Reference	**AHU-2**	**Serving**	**AHU-WL8-01**	
Unit Reference	Q10688-02-23			
Model Reference	Non-standard			
AHU Details				
Design Supply Air Volume	3.209	m^3/s		
External Static Pressure	450	Pa		
Unit Velocity	1.46	m/s		
Design Extract Air Volume	3.209	m^3/s		
External Static Pressure	450	Pa		
Unit Velocity	1.53	m/s		

Energy Use				
	Supply	Extract	Overall	
Specific Fan Power	1.18	1.14	2.32	$kW/(m^3/s)$

AHU Construction		**Construction**	
Framework	56 mm	Unit Location	Internal
Framework Coating	Anodized	Weather Roof	None
Panel Depth	45 mm	Baseframe	150 x 75 x 2.0 Folded Galv
External Panel Finish	Mica Coated steel 0.90mm	Casing performance (EN 1886 Standard)	
Internal Panel Finsh	Galv Sheet 0.9mm	Leakage Class	L1
Panel Insulation	Mineral Wool 45mm	Casing strength	D1
		Thermal Transmittance	T3
		Thermal Bridge	TB3

Overall Unit Dimensions				
	Length	Width	Height	Weight (Per Unit)
	4250 mm	2200 mm	2400 mm	2143 kg

Section Weights and Dimensions				
Section No.	Length	Width	Height	Weight Approx +/-5%
A	1200 mm	2200 mm	1150 mm	411 kg
B	600 mm	2200 mm	2250 mm	400 kg
C	2450 mm	2200 mm	1150 mm	791 kg
D	700 mm	2200 mm	1100 mm	178 kg
E	1200 mm	2200 mm	1100 mm	363 kg

Inlet Section			**Construction**	
Component	Damper		Casing	Aluminium - Class 2
Air Pressure Drop	1.00	Pa	Control	Extended Spindle

Accessories

Damper actuators to be provided and fitted by others.
Traffolyte Component label

Heating Coil			**Construction**	
Air On / Off	-4.00/5.0	°C/°C	Casing Material	Galvanised
Duty	35.01	kW	Tube Material	Copper
Water(Inlet)/(Outlet)	75.00/55.00	°C/°C	Fin Material	Aluminium
Water PD	10	kPa	Connection Size	1 x 1"(F) / 1 x 1"(R)
Water Flow Rate	0.43	L/s		
Air Pressure Drop	5.00	Pa		
Internal Volume	9.90	l		

Accessories

Valve and actuator to be supplied and fitted by others
Traffolyte Component label

TECHNICAL SPECIFICATION SHEET

Ventilation Equipment Ltd

Project: UCL IOE Bedford Way
Quotation Reference: Q10688
Date: 4th July 2022

Customer Unit Reference	**AHU-2**	**Serving**	**AHU-WL8-01**
Unit Reference	Q10688-02-23		
Model Reference	Non-standard		

Panel and Bag Filter			**Construction**	
Panel Clean PD	49	Pa	Panel Grade	Coarse 85%(ISO16890)
Panel Mean	100	Pa	Panel Media	Card Frame-Cotton/Synthetic Media
Panel Recommended Dirty	150	Pa	Panel Size 1 / Qty	6 x 594 x 495 x 45 mm
Bag Clean PD	61	Pa	Bag Grade	ePM1 60%(ISO16890)
Bag Mean	133	Pa	Bag Media	25mm Galv Frame/Glass Fibre
Bag Recommended dirty	200	Pa	Bag Size 1 / Qty	6 x 595 x 495 x 635mm

Accessories

Factory fitted Dwyer Minihelic gauge (Range 0-250 Pa)
Factory fitted Dwyer Minihelic gauge (Range 0-500 Pa)
Traffolyte Component label

Heat Wheel Section				**Construction**
	Winter	**Summer**		
Supply Air On (db/RH)	-4.00/100.0	30.10/44.4	°C/%	Matrix Type 1: P-Condensation
Supply Air Off (db/RH)	15.12/49.0	24.14/63.0	°C/%	Product Type
Exhaust Air On (db/RH)	21.00/50.1	22.00/50.0	°C/%	
Exhaust Air Off (db/RH)	3.45/95.0	27.98/35.0	°C/%	
Heat Recovery	95.26	-22.39	kW	
Efficiency	78.5	76.6	%	
Supply Pressure Drop	96.79	119.09	Pa	
Exhaust Pressure Drop	113.13	113.78	Pa	

Accessories

Heat exchanger selection compliant to ERP2018 (Ecodesign directive 1253/2014)
Condensation Rotor for sensible heat recovery
Variable speed drive_factory fitted & wired (Internally to Heat Wheel section) for integration into the control system (Requires 0-10v input signals)
Factory fitted IP54 external terminal box c/w wiring to Heat Wheel Controller
Manufacturers site attendance for start-up of Thermal Wheel (see additional costs)
Site attendance for assembly of segmented wheel (see additional costs)
Traffolyte Component label

Supply Fan - Dual Fan (50%-50%)			**Construction**	
Design Air Volume	3.209	m³/s	Impeller	Backward Curve
Total Fan Resistance	801	Pa	Internal Isolation	Rubber
Fan Speed	2257	r/min		
Frequency @ Design Speed	78.10	Hz		
Max Frequency	84.00	Hz		
Maximum Fan Speed	24.30	r/min		
Efficiency	80.72	%		

Motor Data (Electrical Loads per Fan)			**Construction**	
FLC	4.70	Amps	Type	AC
Total Input Power	1.89	kW	Rating	IE3
Motor Power	3.00	kW		
Motor Speed	1445	r/min		
Electrical Supply	400/3/50.00			

TECHNICAL SPECIFICATION SHEET

Ventilation Equipment Ltd

Project: UCL IOE Bedford Way
Quotation Reference: Q10688
Date: 4th July 2022

Customer Unit Reference	**AHU-2**	**Serving**	**AHU-WL8-01**
Unit Reference	Q10688-02-23		
Model Reference	Non-standard		

Accessories

Factory fitted IP44 Internal bulkhead light (42W) wired to an IP66 external switch
Factory fitted viewport
Removable wire mesh guard is fitted behind the fan access door.
Over temperature protection thermister (For integration in to the controls system)
Fan Label kit, Fan Access, Traffolyte Warning label - Fan run down, Danger label - Safety, Electrical Isolation

Inlet Flexible Connection
Factory Fitted Inlet Guard
Fan motor(s) will be wired with screened cable to an externally mounted IP66 rated isolator(s)
IP54 rated VSD drive(s) factory fitted externally on the access side of the unit and wired to the fan motor(s) with screened cable.

Chilled Water Coil			**Construction**	
Air On (db/wb)	30.10/21.00	°C/°C	Casing Material	Galvanised
Air Off (db/wb)	17.0/15.6	°C/°C	Tube Material	Copper
Duty	62.24	kW	Fin Material	Aluminium
Water(Inlet)/(Outlet)	7.00/12.00	°C/°C	Connection Size	1 x 2"(F) / 1 x 2"(R)
Water PD	18	kPa	Eliminators	not needed BUT fit P400
Water Flow Rate	3.00	L/s	Drain Tray	7 S Steel draintray
Face Velocity	2.03	m/s		
Air Pressure Drop	14.00	Pa		
Internal Volume	28.40	l		

Accessories

Valve and actuator to be supplied and fitted by others
Traffolyte label - Drain Trap Instruction
Traffolyte Component label

Access Section		
Length	400	mm
Access Side	Right	

Accessories

Traffolyte Component Access label

Heating Coil			**Construction**	
Air On / Off	5.00/22.0	°C/°C	Casing Material	Galvanised
Duty	66.11	kW	Tube Material	Copper
Water(Inlet)/(Outlet)	75.00/55.00	°C/°C	Fin Material	Aluminium
Water PD	7	kPa	Connection Size	1 x 1¼"(F) / 1 x 1¼"(R)
Water Flow Rate	0.81	L/s		
Air Pressure Drop	5	Pa		
Internal Volume	10.60	l		

Accessories

Valve and actuator to be supplied and fitted by others
Traffolyte Component label

Outlet Section			**Construction**	
Component	Damper		Casing	Aluminium - Class 2
Air Pressure Drop	1.00	Pa	Control	Manual

Accessories

Damper fitted with quadrant for manual adjustment (Air Balancing by others)
Traffolyte Component label

Inlet Section			**Construction**	
Component	Damper		Casing	Aluminium - Class 2
Air Pressure Drop	1.00	Pa	Control	Manual

TECHNICAL SPECIFICATION SHEET

Ventilation Equipment Ltd

Project: UCL IOE Bedford Way
Quotation Reference: Q10688
Date: 4th July 2022

Customer Unit Reference	**AHU-2**	**Serving**	**AHU-WL8-01**
Unit Reference	Q10688-02-23		
Model Reference	Non-standard		

Accessories

Damper fitted with quadrant for manual adjustment (Air Balancing by others)
Traffolyte Component label

Bag Filter			**Construction**	
Clean PD	134	Pa	Grade	ePM1 70%(ISO16890)
Mean	294	Pa	Media	25mm Galv Frame/Glass Fibre
Recommended dirty	450	Pa	Withdrawal	Side
			Size 1 / Qty	3 x 592 x 592 x 380 mm
			Size 2 / Qty	1 x 295 x 595 x 380 mm
			Size 3 / Qty	3 x 595 x 295 x 380 mm

Accessories

Factory fitted Dwyer Minihelic gauge (Range 0-500 Pa)
Traffolyte Component label

Exhaust Fan - Dual Fan (50%-50%)			**Construction**	
Design Air Volume	3.209	m³/s	Impeller	Backward Curve
Total Fan Resistance	741	Pa	Internal Isolation	Rubber
Fan Speed	1815	r/min		
Frequency @ Design Speed	62.82	Hz		
Max Frequency	70.00	Hz		
Maximum Fan Speed	2020	r/min		
Efficiency	78.26	%		

Motor Data (Electrical Loads per Fan)			**Construction**	
FLC	4.70	Amps	Type	AC
Total Input Power	1.81	kW	Rating	IE3
Motor Power	2.20	kW		
Motor Speed	1445	r/min		
Electrical Supply	400/3/50.00			

Accessories

Factory fitted IP44 Internal bulkhead light (42W) wired to an IP66 external switch
Factory fitted viewport
Removable wire mesh guard is fitted behind the fan access door.
Over temperature protection thermister (For integration in to the controls system)
Fan Label kit, Fan Access, Traffolyte Warning label - Fan run down, Danger label - Safety, Electrical Isolation

Inlet Flexible Connection
Factory Fitted Inlet Guard
Fan motor(s) will be wired with screened cable to an externally mounted IP66 rated isolator(s)
IP54 rated VSD drive(s) factory fitted externally on the access side of the unit and wired to the fan motor(s) with screened cable.

Outlet Section			**Construction**	
Component	Damper		Casing	Aluminium - Class 2
Air Pressure Drop	1.00	Pa	Control	Extended Spindle

Accessories

Damper actuators to be provided and fitted by others.
Traffolyte Component label

TECHNICAL SPECIFICATION SHEET

Ventilation Equipment Ltd

Project: UCL IOE Bedford Way
Quotation Reference: Q10688
Date: 4th July 2022

Customer Unit Reference	**AHU-2**	**Serving**	**AHU-WL8-01**
Unit Reference	Q10688-02-23		
Model Reference	Non-standard		

AHU Acoustic Data:

Acoustic Data (Supply Fan Sound Power Level): Per Fan

Frequency(Hz)	63	125	250	500	1K	2K	4K	8K
Supply Fan Inlet Lw (dB):	67	65	77	72	71	68	66	68
Supply Fan Outlet Lw (dB):	71	70	81	78	84	76	72	72

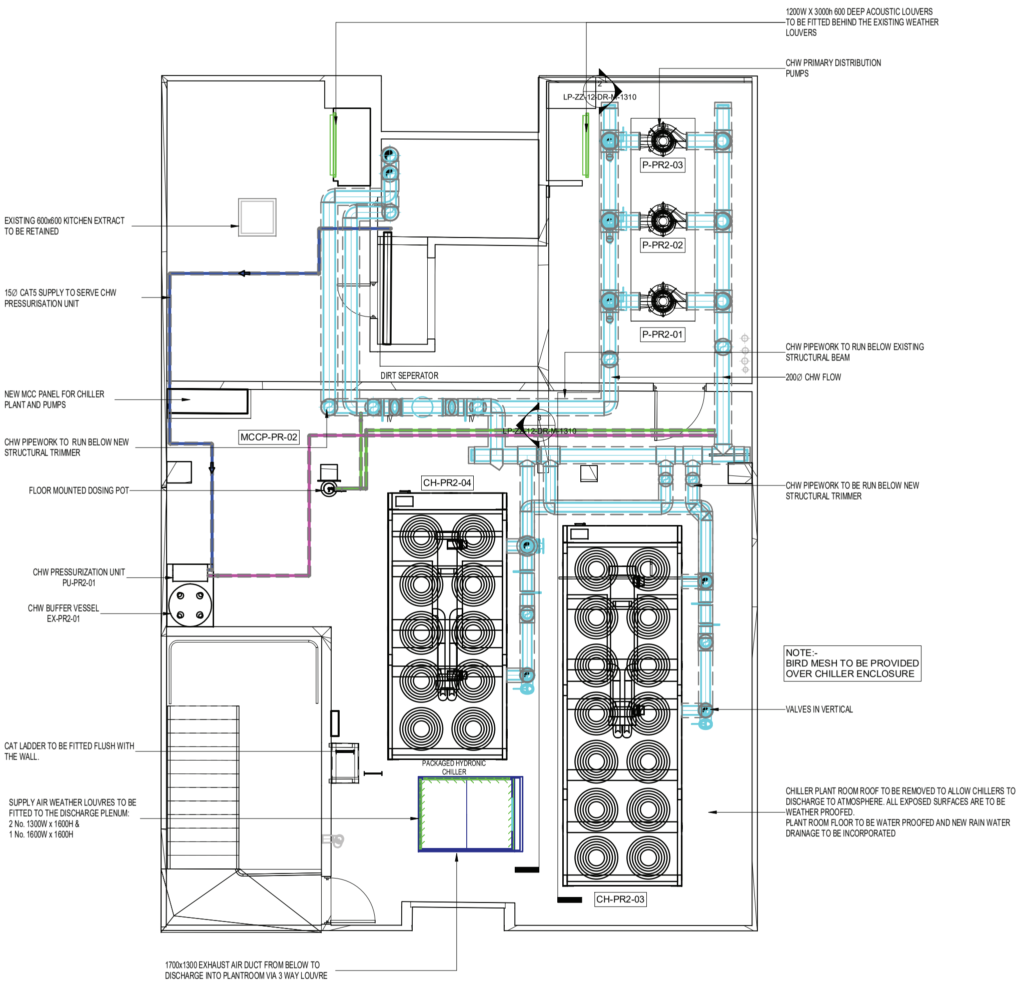
Acoustic Data (Extract Fan Sound Power Level): Per Fan

Frequency(Hz)	63	125	250	500	1K	2K	4K	8K
Extract Fan Inlet Lw (dB)	63	65	73	71	70	66	63	60
Extract Fan Outlet Lw (dB)	71	70	79	79	82	72	69	64

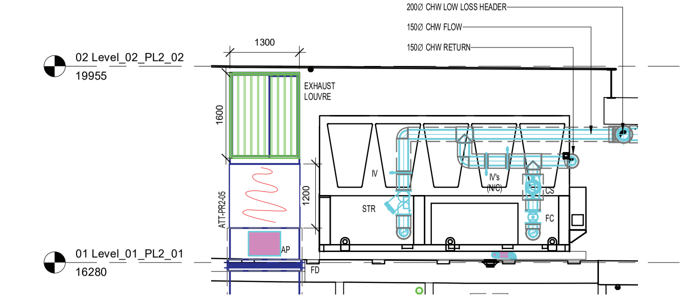
The In-duct Sound Power Level Spectra are in dB re-1pW.
The fan sound power levels shown above do not include for the effects of mounting the fans within the AHU section(s). Please allow for the additional correction of 6db across the spectrum.

Appendix F Level 12 – Roof Plant Chillers Information

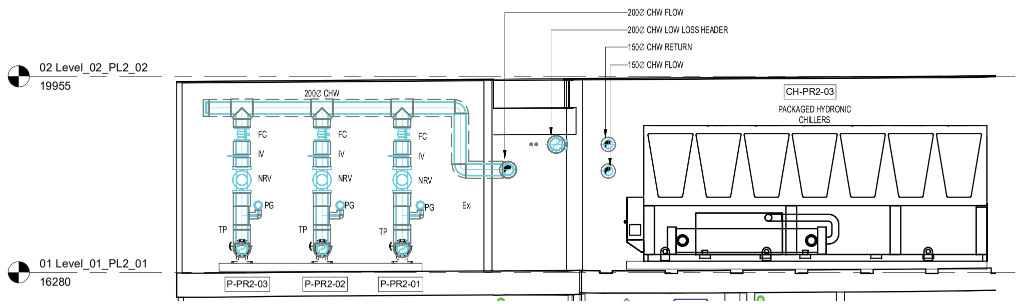
BIM 2D PLANTROOM LAYOUT DRAWINGS SUPERSEDE
STAGE 4 PLANTROOM LAYOUT DRAWINGS



1 MECHANICAL SERVICES PROPOSED LAYOUT PLANT ROOM 2 LEVEL 12
1 : 50



3 SECTION
1 : 50



2 SECTION
1 : 50

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LEGEND

VCD	VOLUME CONTROL DAMPER
AP	ACCESS PANEL
FD	FIRE DAMPER
	ATTENUATOR
IV	ISOLATION VALVE
FC	FLUSHING CONNECTIN
OPO	ORIFICE PLATE
3PCV	3 PORT CONTROL VALVE
MPICV	MOTORISED PRESSURE INDEPENDENT CONTROL VALVE
STR	STRAINER
TP	TEST POINT
AV	AIR VENT
DC	DRAIN COCK

Rev	Date	Description	Drawn	Approved
C0	06.05.22	CONTRACT ISSUE	BIM	NLB
0	26.02.21	STAGE 4	CAD	SB

Architects Model:
Structures Model:
Other Model:

Issue Status
CONTRACT ISSUE

Project
UCL IOE, 20 BEDFORD WAY PHASE 2

Title
MECHANICAL SERVICES PROPOSED LAYOUT PLANT ROOM 02 LEVEL12

Scale	Designed By	Checked By	Date
As indicated@A1	NH	NLB	FEB 2021

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W www.longandpartners.co.uk

100113-20BW-LP-ZZ-12-DR-M-1310 | C0

EWAD500TZ-SR B2

INVERTER

> Air cooled chiller
> Inverter Driven Single Screw compressor
> Silver efficiency version
> Reduced sound configuration
> R134a refrigerant

Unit description: Daikin air-cooled chiller with inverter driven screw compressor and R134a refrigerant. Color: Ivory White (Munsell code 5Y7.5/1) (±RAL7044).

Compressor: Latest design Daikin single screw compressor enjoying Variable Volume Ratio (VVR) technology for optimized unit performances at any load and operating condition. Daikin design refrigerant cooled inverter integrated within compressor casing. Sophisticated unit control logic allows the inverter to modulate compressor speed minimizing power consumption and noise emission at any load condition.

Evaporator: New generation shell and tube (dual compressor models) or plate heat type (single compressor models) assuring optimal heat transfer and minimized water pressure drops.

Condenser: Full body Aluminum “Long Life Alloy” Microchannel coils providing superior resistance to corrosion compared to standard aluminum alloy. Coils’ layout designed to guarantee optimized heat transfer allowing maximized performances and reduced turbulence for low noise emission.

Condenser coil fans: The condenser fans are propeller type with high efficiency design blades to maximize performances. The material of the blades is glass-reinforced resin and each fan is protected by a guard. Fan motors are internally protected from over temperature and are IP54.

Refrigerant circuit: Each unit has one or two independent refrigerant circuits and each one includes: Compressor Inverter driven with integrated oil separator, Electronic expansion valve, Discharge line shut off valve, Liquid line shut off valve, Sight glass with moisture indicator, Filter drier, Charging valves, High pressure switch, High pressure transducers, Low pressure transducers, Oil pressure transducer, Suction temperature sensor.

Electrical: Control and power sections are located in the main panel that is manufactured to ensure protection against all weather conditions. The electrical panel is IP54 and internally protected against possible accidental contact with live parts. The main panel is fitted with a main switch interlocked door that shuts off power supply when opening.

Controller: Latest generation MicroTech III Type. Providing monitoring and control functions required for an efficient and trouble free operation of the chiller. Sophisticated software with predictive logic selects the most energy efficient combination of compressor load and electronic expansion valve position keeping stable operating conditions and maximizing chiller efficiency and reliability. Unit is compatible with Daikin on Site platform for remote monitoring, preventive maintenance and system optimization.

Technical Data Sheet

EWAD500TZ-SR B2

Performances calculated according to EN14511-3:2013

Cooling mode performances

Cooling capacity	499.1 kW	Evaporator water IN/OUT	12.00 °C / 7.00 °C
Power input	175.2 kW	Evaporator water flow	23.87 l/s
EER Cooling Efficiency	2.849 kW / kW	Evaporator pressure drops	46.2 kPa
		Ambient temperature	35.0 °C
IPLV.IP	5.250 kW / kW	Lw / Lp @ 1m	90 dB(A) / 70 dB(A)
SEER / ηs	4.64 / 182.6%	Evaporator fluid	Water
SEPR	5.65	Evaporator fouling factor	0.000 m2°C/W

SEER declared according to EN14825, fan coil application 12/7°C (inlet/outlet) water temperatures. SEPR declared according to EN14825:2018, high temperature process cooling application. Sound power level according to ISO 9614-1. IPLV.IP and seasonal efficiency data generally refer to standard unit without options

Unit information

Compressor type	Inverter Driven Single Screw	Refrigerant type	R134a
Capacity control	Stepless	Condenser type	Microchannel
Compressor N°	2	Condenser fans N°	10
Circuit N°	2	Condenser fans control	On/Off
Refrigerant charge	68 kg	Altitude	0 MSL
Nominal air flow	36996 l/s	Evaporator type	Shell & Tubes

Actual refrigerant charge depends on the final unit construction, refer to unit nameplate.

Electrical information

Power supply	400 V / 50.0 Hz / 3 Ph	Max. inrush current	0 A
Running current	295.76 A	Compressor starting method	Inverter
Max. Running current	367 A		
Max. current wires sizing	404.25 A		

Voltage tolerance ± 10%. Phase Voltage unbalance ± 3%. Electrical data referred to standard unit without options, refer to unit name plate data.

EWAD500TZ-SR B2

Performances calculated according to EN14511-3:2013

Acoustic information

Sound pressure level at 1 m from the unit (rif. 2 x 10-5 Pa)

63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	db(A)
70.0	67.0	67.0	69.0	64.0	60.0	52.0	44.0	**70.0**

Values referred to Evap. IN/OUT 12/7°C and 35°C Amb., full load operation, standard unit configuration without options. Sound pressure level calculated from sound power level. Sound pressure in octave band is for information only and not considered binding.

Physical information

Evap. connections size	**139.7 mm**	Length	**5030 mm**
		Width	**2282 mm**
Weight shipping/operating	**4481 kg / 4644 kg**	Height	**2540 mm**

Information referred to standard unit configuration without options, refer to certified unit drawing.

Part loads information

Calculation type: eseer

Load [%]	100	100	75	50	25
Cooling Capacity [kW]	499.1	499.1	369.9	245.1	127.8
Power Input [kW]	175.2	175.2	99.3	52.32	23.76
EER [kW/kW]	2.849	2.850	3.720	4.680	5.380
Evap. Water IN/OUT [°C]	12.00/7.00	12.00/7.00	10.75/7.00	9.50/7.00	8.25/7.00
Ambient temp. [°C]	35.0	35.0	30.0	25.0	20.0

Part load calculations different from standard ESEER/IPLV are not in scope of certification and are for reference only.

EWAD500TZ-SR B2

Performances calculated according to EN14511-3:2013

Certification notes

Certified in accordance with Eurovent Certification Program: Liquid Chilling Packages and Heat Pumps (LCP-HP). Standard ratings are specified in the section "Rating requirements" of the Rating Standards. All standard ratings are verified by tests conducted in accordance with the following standards: EN 14511-3:2013 (performance testing) and ISO 9614 (acoustic testing).

Within the scope of AHRI Air-Cooled Water-Chilling Packages Certification Program. AHRI Certified performance may be obtained from the manufacturer's representative

General notes

For more information about the above selected product, please go to http://www.daikineurope.com/industrial/. Unit performances are reproducible in laboratory test environment only in accordance to recognized industry standards. This technical data sheet is generated by Daikin Applied Tool software designed and distributed by Daikin Applied Europe S.p.A. The present software does not constitute an offer binding upon Daikin Applied Europe S.p.A who compiled the content of this software to the best of its knowledge. No express or implied warranty is given for the completeness, accuracy, reliability or fitness for particular purpose of its content and the products and services presented therein. Specifications are subject to change without prior notice. Product images are indicative only and are intended for illustrative purposes only; pictures may be differed from the ordered product and are subject to change without prior notice. Daikin Applied Europe S.p.A. explicitly rejects any liability for any direct or indirect damage, in the broadest sense, arising from or related to the use and/or interpretation of this document. All content is copyrighted by Daikin Applied Europe S.p.A.

EWAD700TZ-SR B2

INVERTER

> Air cooled chiller
> Inverter Driven Single Screw compressor
> Silver efficiency version
> Reduced sound configuration
> R134a refrigerant

Unit description: Daikin air-cooled chiller with inverter driven screw compressor and R134a refrigerant. Color: Ivory White (Munsell code 5Y7.5/1) (±RAL7044).

Compressor: Latest design Daikin single screw compressor enjoying Variable Volume Ratio (VVR) technology for optimized unit performances at any load and operating condition. Daikin design refrigerant cooled inverter integrated within compressor casing. Sophisticated unit control logic allows the inverter to modulate compressor speed minimizing power consumption and noise emission at any load condition.

Evaporator: New generation shell and tube (dual compressor models) or plate heat type (single compressor models) assuring optimal heat transfer and minimized water pressure drops.

Condenser: Full body Aluminum “Long Life Alloy” Microchannel coils providing superior resistance to corrosion compared to standard aluminum alloy. Coils’ layout designed to guarantee optimized heat transfer allowing maximized performances and reduced turbulence for low noise emission.

Condenser coil fans: The condenser fans are propeller type with high efficiency design blades to maximize performances. The material of the blades is glass-reinforced resin and each fan is protected by a guard. Fan motors are internally protected from over temperature and are IP54.

Refrigerant circuit: Each unit has one or two independent refrigerant circuits and each one includes: Compressor Inverter driven with integrated oil separator, Electronic expansion valve, Discharge line shut off valve, Liquid line shut off valve, Sight glass with moisture indicator, Filter drier, Charging valves, High pressure switch, High pressure transducers, Low pressure transducers, Oil pressure transducer, Suction temperature sensor.

Electrical: Control and power sections are located in the main panel that is manufactured to ensure protection against all weather conditions. The electrical panel is IP54 and internally protected against possible accidental contact with live parts. The main panel is fitted with a main switch interlocked door that shuts off power supply when opening.

Controller: Latest generation MicroTech III Type. Providing monitoring and control functions required for an efficient and trouble free operation of the chiller. Sophisticated software with predictive logic selects the most energy efficient combination of compressor load and electronic expansion valve position keeping stable operating conditions and maximizing chiller efficiency and reliability. Unit is compatible with Daikin on Site platform for remote monitoring, preventive maintenance and system optimization.

Technical Data Sheet

EWAD700TZ-SR B2

Performances calculated according to EN14511-3:2013

Cooling mode performances

Cooling capacity	699.9 kW	Evaporator water IN/OUT	12.00 °C / 7.00 °C
Power input	250.0 kW	Evaporator water flow	33.45 l/s
EER Cooling Efficiency	2.800 kW / kW	Evaporator pressure drops	37.8 kPa
		Ambient temperature	35.0 °C
IPLV.IP	5.470 kW / kW	Lw / Lp @ 1m	94 dB(A) / 73 dB(A)
SEER / ηs	4.69 / 184.6%	Evaporator fluid	Water
SEPR	5.88	Evaporator fouling factor	0.000 m2°C/W

SEER declared according to EN14825, fan coil application 12/7°C (inlet/outlet) water temperatures. SEPR declared according to EN14825:2018, high temperature process cooling application. Sound power level according to ISO 9614-1. IPLV.IP and seasonal efficiency data generally refer to standard unit without options

Unit information

Compressor type	Inverter Driven Single Screw	Refrigerant type	R134a
Capacity control	Stepless	Condenser type	Microchannel
Compressor N°	2	Condenser fans N°	14
Circuit N°	2	Condenser fans control	On/Off
Refrigerant charge	90 kg	Altitude	0 MSL
		Evaporator type	Shell & Tubes

Actual refrigerant charge depends on the final unit construction, refer to unit nameplate.

Electrical information

Power supply	400 V / 50.0 Hz / 3 Ph	Max. inrush current	0 A
Running current	422.81 A	Compressor starting method	Inverter
Max. Running current	511 A		
Max. current wires sizing	561.76 A		

Voltage tolerance ± 10%. Phase Voltage unbalance ± 3%. Electrical data referred to standard unit without options, refer to unit name plate data.

EWAD700TZ-SR B2

Performances calculated according to EN14511-3:2013

Acoustic information

Sound pressure level at 1 m from the unit (rif. 2 x 10-5 Pa)

63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	db(A)
73.0	70.0	70.0	73.0	68.0	63.0	55.0	48.0	**73.0**

Values referred to Evap. IN/OUT 12/7°C and 35°C Amb., full load operation, standard unit configuration without options. Sound pressure level calculated from sound power level. Sound pressure in octave band is for information only and not considered binding.

Physical information

Evap. connections size	**168.3 mm**	Length	**6786 mm**
		Width	**2282 mm**
Weight shipping/operating	**5278 kg / 5541 kg**	Height	**2540 mm**

Information referred to standard unit configuration without options, refer to certified unit drawing.

EWAD700TZ-SR B2

Performances calculated according to EN14511-3:2013

Certification notes

Certified in accordance with Eurovent Certification Program: Liquid Chilling Packages and Heat Pumps (LCP-HP). Standard ratings are specified in the section "Rating requirements" of the Rating Standards. All standard ratings are verified by tests conducted in accordance with the following standards: EN 14511-3:2013 (performance testing) and ISO 9614 (acoustic testing).

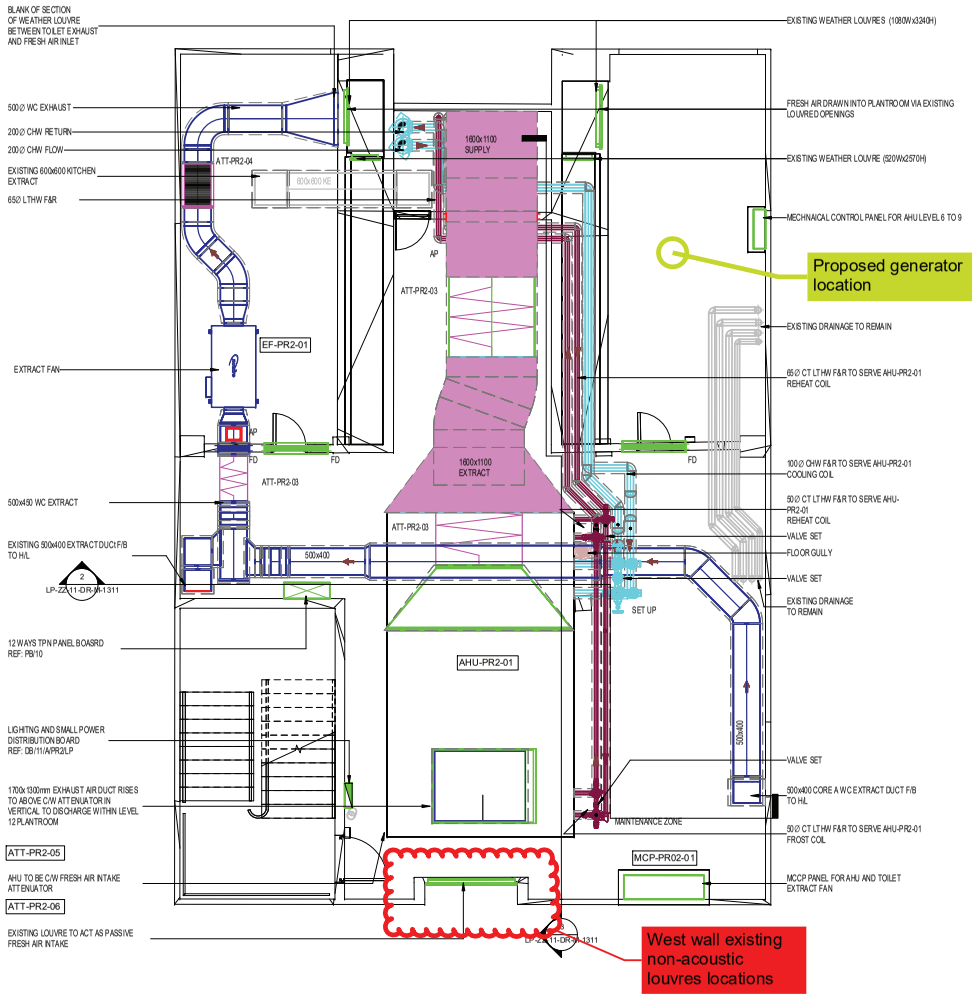
Outside the scope of AHRI Air-Cooled Water-Chilling Packages Certification Program or not optionally certified, but is rated in accordance with AHRI Standard 550/590 (I-P) and AHRI Standard 551/591 (SI).

General notes

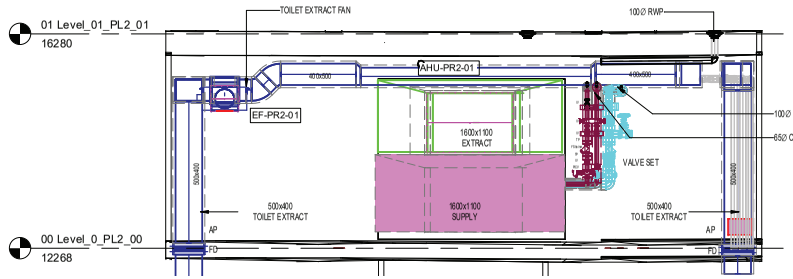
For more information about the above selected product, please go to http://www.daikineurope.com/industrial/. Unit performances are reproducible in laboratory test environment only in accordance to recognized industry standards. This technical data sheet is generated by Daikin Applied Tool software designed and distributed by Daikin Applied Europe S.p.A. The present software does not constitute an offer binding upon Daikin Applied Europe S.p.A who compiled the content of this software to the best of its knowledge. No express or implied warranty is given for the completeness, accuracy, reliability or fitness for particular purpose of its content and the products and services presented therein. Specifications are subject to change without prior notice. Daikin Applied Europe S.p.A. explicitly rejects any liability for any direct or indirect damage, in the broadest sense, arising from or related to the use and/or interpretation of this document. All content is copyrighted by Daikin Applied Europe S.p.A.

Appendix G Level 11 – Plant Room 2 information

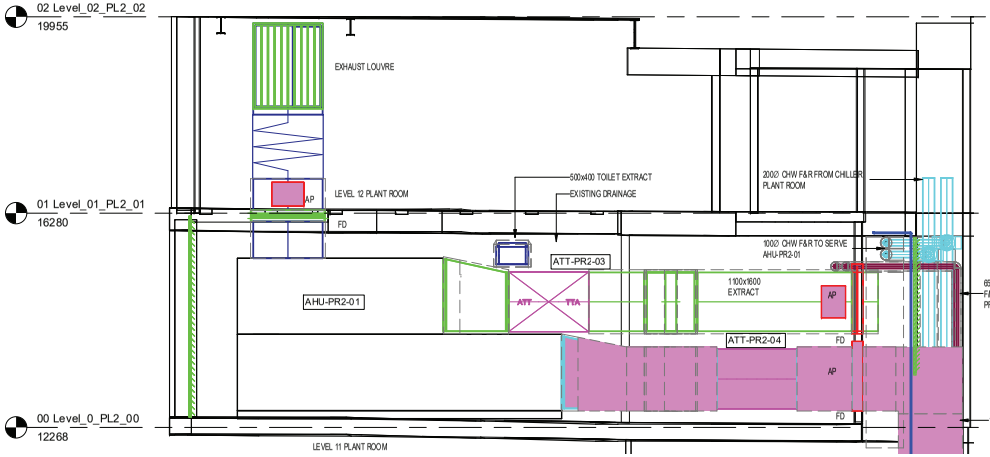
BIM 2D PLANTROOM LAYOUT DRAWINGS SUPERSEDE
STAGE 4 PLANTROOM LAYOUT DRAWINGS



1 MECHANICAL SERVICES PROPOSED LAYOUT PLANT ROOM 2 LEVEL 11
1 : 50



2 SECTION
1 : 50



3 SECTION
1 : 50

NOTES

1. DO NOT SCALE FROM THIS DRAWING.
2. THIS DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND DOCUMENTS PREPARED BY LONG & PARTNERS.
3. THIS DRAWING DEPICT THE DESIGN INTENT FOR THE SCHEME.
4. THE CONTRACTOR SHALL VERIFY PIPEWORK ROUTES AS DETAILED ON STRIP- OUT DRAWINGS PRIOR TO COMMENCING WITH WORKS.
5. THE CONTRACTOR SHALL PRODUCE DETAILED CONSTRUCTION WORKING DRAWINGS DURING STAGE 5 DESIGN.
6. THE CONTRACTOR TO ENGAGE FREEZING SPECIALIST TO IDENTIFY PROCEDURES FOR CONNECTING AND STRIPPING OUT MITHW PIPEWORK.

LEGEND

VCD		VOLUME CONTROL DAMPER
AP	AP	ACCESS PANEL
FD		FIRE DAMPER
		ATTENUATOR
IV		ISOLATION VALVE
FC		FLUSHING CONNECTIN
OPO		ORIFICE PLATE
3PCV		3 PORT CONTROL VALVE
MPICV		MOTORISED PRESSURE INDEPENDENT CONTROL VALVE
STR		STRAINER
TP		TEST POINT
AV		AIR VENT
DC		DRAIN COCK

Rev	Date	Description	Drawn	Approved
C0	06.05.22	CONTRACT ISSUE	BIM	NLB
0	26.02.21	STAGE 4	CAD	SB

Architects Model:
Structures Model:
Other Model:

Issue Status
CONTRACT ISSUE

Project
UCL IOE, 20 BEDFORD WAY PHASE 2

Title
MECHANICAL SERVICES PROPOSED LAYOUT PLANT ROOM 02 LEVEL11

Scale	Designed By	Checked By	Date
As indicated@A1	NH	NLB	FEB 2021

building service consultants
Fifth Floor, 120 Old Broad Street, London EC2 1AR
T +44(0)20 7920 4900
F +44(0)20 7920 4901
E info@longandpartners.co.uk
W www.longandpartners.co.uk

100113-20BW-LP-ZZ-11-DR-M-1311 | C0

Genset Model: P300-3
Engine Type : 1506A-E88TAG4
Frequency (Hz): 50
CAE

				Average Sound Pressure Levels at 1m dB								
kVA	**kWe**	**% Load**	**dBA**	**63Hz**	**125Hz**	**250Hz**	**500Hz**	**1kHz**	**2kHz**	**4kHz**	**8kHz**	**dBA**
300	240	100.0	80.2	91.1	84.0	82.7	76.2	72.8	70.8	67.1	70.2	70.8
	216	90.0	79.8	90.7	83.9	81.7	75.7	72.7	70.6	66.9	70.5	70.5
	192	80.0	79.5	90.2	83.8	80.8	75.3	72.6	70.5	66.6	70.4	70.2
	180	75.0	79.3	89.9	83.8	80.4	75.2	72.5	70.4	66.5	70.3	70.1
	168	70.0	79.1	89.5	83.7	80.0	75.0	72.5	70.3	66.4	70.0	69.9
	144	60.0	78.8	88.6	83.5	79.4	74.7	72.3	70.2	66.2	69.3	69.7
	120	50.0	78.6	87.5	83.3	78.9	74.5	72.2	70.1	66.0	68.3	69.4
	96	40.0	78.3	86.2	83.0	78.6	74.4	72.1	69.9	65.8	66.9	69.2
	72	30.0	78.1	84.7	82.7	78.4	74.3	72.0	69.8	65.6	65.2	68.9
	48	20.0	77.9	83.1	82.4	78.4	74.3	71.8	69.6	65.4	63.2	68.7
	24	10.0	77.7	81.3	82.1	78.5	74.4	71.7	69.5	65.2	60.8	68.4

TECHNICAL SPECIFICATION SHEET

Ventilation Equipment Ltd

Project: UCL IOE Bedford Way
Quotation Reference: Q10688
Date: 4th July 2022

Customer Unit Reference	**AHU-1**	**Serving**	**AHU-PR2-01**	
Unit Reference	Q10688-01-23			
Model Reference	Non-standard			
AHU Details				
Design Supply Air Volume	12.093	m³/s		
External Static Pressure	500	Pa		
Unit Velocity	2.63	m/s		
Design Extract Air Volume	12.093	m³/s		
External Static Pressure	500	Pa		
Unit Velocity	2.63	m/s		
Energy Use				
	Supply	Extract	Overall	
Specific Fan Power	1.42	1.18	2.60	kW/(m^3/s)
AHU Construction			**Construction**	
Framework	56 mm		Unit Location	Internal
Framework Coating	Anodized		Weather Roof	None
Panel Depth	45 mm		Baseframe	150 x 75 x 2.0 Folded Galv
External Panel Finish	Mica Coated steel 0.90mm		Casing performance (EN 1886 Standard)	
Internal Panel Finsh	Galv Sheet 0.9mm		Leakage Class	L1
Panel Insulation	Mineral Wool 45mm		Casing strength	D1
			Thermal Transmittance	T3
			Thermal Bridge	TB3
Overall Unit Dimensions				
	Length	Width	Height	Weight (Per Unit)
	5950 mm	3500 mm	3000 mm	4900 kg
Section Weights and Dimensions				
Section No.	Length	Width	Height	Weight Approx +/-5%
A	2200 mm	3500 mm	1425 mm	1101 kg
B	750 mm	3500 mm	2850 mm	864 kg
C	1500 mm	3500 mm	1425 mm	769 kg
D	1500 mm	3500 mm	1425 mm	861 kg
E	850 mm	3500 mm	1425 mm	350 kg
F	2200 mm	3500 mm	1425 mm	956 kg
Inlet Section			**Construction**	
Component	Damper		Casing	Aluminium - Class 2
Air Pressure Drop	4.00	Pa	Control	Extended Spindle

Accessories

Damper actuators to be provided and fitted by others.
Traffolyte Component label

Attenuator			**Construction**	
Type	AHU Mounted		Splitter Thickness	200 mm
Airway Velocity	8.17	m/sec	Length of Splitter	600 mm
Air PD	36.00	Pa	Splitter Insulation	Mineral Wool
Air way	100.00	mm	Splitter Face	Full Length - Standard
Size H X W	1313.00x3388.00	mm		

Accessories

We are unable to guarantee a resultant noise level within the space - Acoustic analysis to be carried out by others.

TECHNICAL SPECIFICATION SHEET

Ventilation Equipment Ltd

Project: UCL IOE Bedford Way
Quotation Reference: Q10688
Date: 4th July 2022

Customer Unit Reference	**AHU-1**	**Serving**	**AHU-PR2-01**
Unit Reference	Q10688-01-23		
Model Reference	Non-standard		

Heating Coil			**Construction**	
Air On / Off	-4.00/5.0	°C/°C	Casing Material	Galvanised
Duty	131.93	kW	Tube Material	Copper
Water(Inlet)/(Outlet)	75.00/55.00	°C/°C	Fin Material	Aluminium
Water PD	5.87	kPa	Connection Size	1 x 1½"(F) / 1 x 1½"(R)
Water Flow Rate	1.62	L/s		
Air Pressure Drop	16.00	Pa		
Internal Volume	23.90	l		

Accessories

Valve and actuator to be supplied and fitted by others
Traffolyte Component label

Panel and Bag Filter			**Construction**	
Panel Clean PD	79	Pa	Panel Grade	Coarse 85%(ISO16890)
Panel Mean	114	Pa	Panel Media	Card Frame-Cotton/Synthetic Media
Panel Recommended Dirty	150	Pa	Panel Size 1 / Qty	10 x 594 x 594 x 45 mm
			Panel Size 2 / Qty	2 x 394 x 594 x 45 mm
Bag Clean PD	96	Pa	Bag Grade	ePM1 60%(ISO16890)
Bag Mean	148	Pa	Bag Media	25mm Galv Frame/Glass Fibre
Bag Recommended dirty	200	Pa	Bag Size 1 / Qty	10 x 595 x 595 x 635mm
			Bag Size 2 / Qty	2 x 392 x 592 x 635mm

Accessories

Factory fitted Dwyer Minihelic gauge (Range 0-250 Pa)
Factory fitted Dwyer Minihelic gauge (Range 0-500 Pa)
Traffolyte Component label

Heat Wheel Section				**Construction**
	Winter	**Summer**		
Supply Air On (db/RH)	-4.00/100.0	30.10/44.4	°C/%	Matrix Type 1: P-Condensation
Supply Air Off (db/RH)	12.79/52.0	24.99/59.7	°C/%	Product Type
Exhaust Air On (db/RH)	21.00/50.1	22.00/50.0	°C/%	
Exhaust Air Off (db/RH)	5.43/95.0	27.09/36.9	°C/%	
Heat Recovery	298.28	-70.37	kW	
Efficiency	74.2	73.0	%	
Supply Pressure Drop	175.58	215.17	Pa	
Exhaust Pressure Drop	204.58	205.74	Pa	

Accessories

Condensation Rotor for sensible heat recovery
Variable speed drive_factory fitted & wired (Internally to Heat Wheel section) for integration into the control system (Requires 0-10v input signals)
Manufacturers site attendance for start-up of Thermal Wheel (see additional costs)
Site attendance for assembly of segmented wheel (see additional costs)
Traffolyte Component label
Factory fitted IP54 external terminal box c/w wiring to Heat Wheel Controller

TECHNICAL SPECIFICATION SHEET

Ventilation Equipment Ltd

Project: UCL IOE Bedford Way
Quotation Reference: Q10688
Date: 4th July 2022

Customer Unit Reference	**AHU-1**	**Serving**	**AHU-PR2-01**	
Unit Reference	Q10688-01-23			
Model Reference	Non-standard			

Supply Fan - Triple Fan (33%-33%-33%)			**Construction**	
Design Air Volume	12.09	m³/s	Impeller	Backward Curve
Total Fan Resistance	1189	Pa	Internal Isolation	Rubber
Fan Speed	1964	r/min		
Frequency @ Design Speed	67.06	Hz		
Max Frequency	78.00	Hz		
Maximum Fan Speed	2070	r/min		
Efficiency	80.93	%		

Motor Data (Electrical Loads per Fan)			**Construction**	
FLC	21.40	Amps	Type	AC
Total Input Power	6.78	kW	Rating	IE3
Motor Power	7.50	kW		
Motor Speed	1465	r/min		
Electrical Supply	400/3/50.00			

Accessories

Factory fitted IP44 Internal bulkhead light (42W) wired to an IP66 external switch
Factory fitted viewport
Removable wire mesh guard is fitted behind the fan access door.
Over temperature protection thermister (For integration in to the controls system)
Fan Label kit, Fan Access, Traffolyte Warning label - Fan run down, Danger label - Safety, Electrical Isolation

Inlet Flexible Connection
Factory Fitted Inlet Guard
Fan motor(s) will be wired with screened cable to an externally mounted IP66 rated isolator(s)
IP54 rated VSD drive(s) factory fitted externally on the access side of the unit and wired to the fan motor(s) with screened cable.

Chilled Water Coil			**Construction**	
Air On (db/wb)	30.10/21.00	°C/°C	Casing Material	Galvanised
Air Off (db/wb)	20.0/17.4	°C/°C	Tube Material	Copper
Duty	166.88	kW	Fin Material	Aluminium
Water(Inlet)/(Outlet)	7.00/12.00	°C/°C	Connection Size	1 x 3"(F) / 1 x 3"(R)
Water PD	16	kPa	Eliminators	needed - fit P400
Water Flow Rate	7.95	L/s	Drain Tray	7 S Steel draintray
Face Velocity	3.15	m/s		
Air Pressure Drop	90.00	Pa		
Internal Volume	69.90	l		

Accessories

Valve and actuator to be supplied and fitted by others
Traffolyte label - Drain Trap Instruction
Traffolyte Component label

Access Section		
Length	500	mm
Access Side	Right	

Accessories

Traffolyte Component Access label

TECHNICAL SPECIFICATION SHEET

Ventilation Equipment Ltd

Project: UCL IOE Bedford Way
Quotation Reference: Q10688
Date: 4th July 2022

Customer Unit Reference	**AHU-1**	**Serving**	**AHU-PR2-01**	
Unit Reference	Q10688-01-23			
Model Reference	Non-standard			

Heating Coil			**Construction**	
Air On / Off	5.00/22.0	°C/°C	Casing Material	Galvanised
Duty	249.15	kW	Tube Material	Copper
Water(Inlet)/(Outlet)	75.00/55.00	°C/°C	Fin Material	Aluminium
Water PD	15	kPa	Connection Size	1 x 2"(F) / 1 x 2"(R)
Water Flow Rate	3.05	L/s		
Air Pressure Drop	22.00	Pa		
Internal Volume	46.10	l		

Accessories

Valve and actuator to be supplied and fitted by others
Traffolyte Component label

Outlet Section			**Construction**	
Component	Damper		Casing	Aluminium - Class 2
Air Pressure Drop	4.00	Pa	Control	Manual

Accessories

Damper fitted with quadrant for manual adjustment (Air Balancing by others)
Traffolyte Component label

Inlet Section			**Construction**	
Component	Damper		Casing	Aluminium - Class 2
Air Pressure Drop	4.00	Pa	Control	Manual

Accessories

Damper fitted with quadrant for manual adjustment (Air Balancing by others)
Traffolyte Component label

Bag Filter			**Construction**	
Clean PD	98	Pa	Grade	ePM1 60%(ISO16890)
Mean	149	Pa	Media	25mm Galv Frame/Glass Fibre
Recommended dirty	200	Pa	Withdrawal	Side
			Size 1 / Qty	10 x 595 x 595 x 635 mm
			Size 2 / Qty	2 x 392 x 592 x 635 mm

Accessories

Factory fitted Dwyer Minihelic gauge (Range 0-500 Pa)
Traffolyte Component label

Exhaust Fan - Triple Fan (33%-33%-33%)			**Construction**	
Design Air Volume	12.09	m³/s	Impeller	Backward Curve
Total Fan Resistance	919	Pa	Internal Isolation	Rubber
Fan Speed	1504	r/min		
Frequency @ Design Speed	62.70	Hz		
Max Frequency	71.00	Hz		
Maximum Fan Speed	1720	r/min		
Efficiency	79.47	%		

Motor Data (Electrical Loads per Fan)			**Construction**	
FLC	14.90	Amps	Type	AC
Total Input Power	5.36	kW	Rating	IE3
Motor Power	7.50	kW		
Motor Speed	1720	r/min		
Electrical Supply	400/3/50.00			

TECHNICAL SPECIFICATION SHEET

Ventilation Equipment Ltd

Project: UCL IOE Bedford Way
Quotation Reference: Q10688
Date: 4th July 2022

Customer Unit Reference	**AHU-1**	**Serving**	**AHU-PR2-01**
Unit Reference	Q10688-01-23		
Model Reference	Non-standard		

Accessories

Factory fitted IP44 Internal bulkhead light (42W) wired to an IP66 external switch
Factory fitted viewport
Removable wire mesh guard is fitted behind the fan access door.
Over temperature protection thermister (For integration in to the controls system)
Fan Label kit, Fan Access, Traffolyte Warning label - Fan run down, Danger label - Safety, Electrical Isolation

Inlet Flexible Connection
Factory Fitted Inlet Guard
Fan motor(s) will be wired with screened cable to an externally mounted IP66 rated isolator(s)
IP54 rated VSD drive(s) factory fitted externally on the access side of the unit and wired to the fan motor(s) with screened cable.

Outlet Section			**Construction**	
Component	Damper		Casing	Aluminium - Class 2
Air Pressure Drop	9.00	Pa	Control	Extended Spindle

Accessories

Damper actuators to be provided and fitted by others.
Traffolyte Component label

TECHNICAL SPECIFICATION SHEET

Ventilation Equipment Ltd

Project: UCL IOE Bedford Way
Quotation Reference: Q10688
Date: 4th July 2022

Customer Unit Reference	**AHU-1**	**Serving**		**AHU-PR2-01**			
Unit Reference	Q10688-01-23						
Model Reference	Non-standard						

AHU Acoustic Data:

Acoustic Data (Supply Fan Sound Power Level): Per Fan

Frequency(Hz)	63	125	250	500	1K	2K	4K	8K
Supply Fan Inlet Lw (dB):	70	72	87	77	77	75	72	78
Supply Fan Outlet Lw (dB):	80	78	91	89	88	81	78	80

Acoustic Data (Extract Fan Sound Power Level): Per Fan

Frequency(Hz)	63	125	250	500	1K	2K	4K	8K
Extract Fan Inlet Lw (dB)	72	75	87	78	76	74	72	79
Extract Fan Outlet Lw (dB)	80	80	91	89	86	80	78	81

Acoustic Data (Attenuator Insertion Loss - Supply):

Frequency(Hz)	63	125	250	500	1K	2K	4K	8K
Static Insertion Loss (dB)	3	7	14	28	37	37	29	24

The In-duct Sound Power Level Spectra are in dB re-1pW.
The fan sound power levels shown above do not include for the effects of mounting the fans within the AHU section(s). Please allow for the additional correction of 6db across the spectrum.

Ventilation Equipment Ltd

Understood to also apply to EF-PR2-01.

TECHNICAL SPECIFICATION SHEET

Date: 20 July 2022
Quote No: Q 10688

Project Reference: UCL IOE Bedford Way
Unit No: 10688-06-23

Unit Reference: EF-PR1-01
Revision: 23

Performance - Required

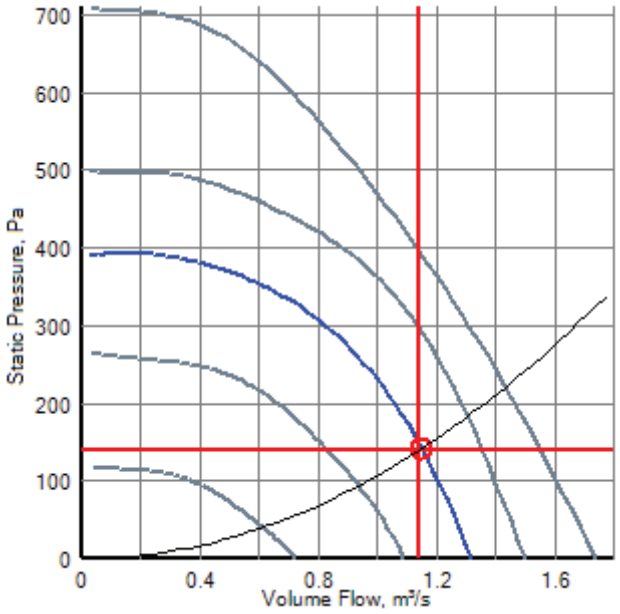
Air Flow :	1.143 m³/s
Static Pressure :	140 Pa
Selection Pressure:	140 Pa
Installation Type:	n/a
Air Density:	1.204 kg/m³
- Atmos. Temp:	20 °C
- Altitude:	0 m
- Humidity:	0.0 %

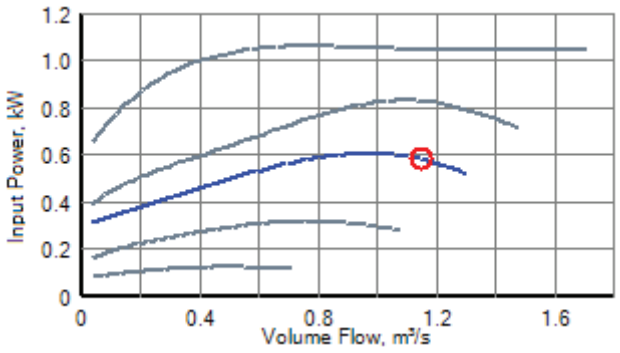
Actual

Air Flow:	1.15 m³/s
Static Pressure:	142 Pa
Total Pressure:	163 Pa

Fan Data

Description:	Centrifugal Twin Box		
Diameter:	500 mm		
Impeller Type:	Centrifugal		
Blade Material:	-		
Speed:	1093 r/min @50 Hz		
Power, Abs:	-	Peak:	-
Input Power:	0.59 kW		
Efficiency Total:	-	Static:	-
SFP:	0.50		
Fan Weight:	132.0 kg		





Motor Data (at STP)

Motor Type:	
Electrical Supply:	400V 3ph 50Hz
Motor Frame:	
Motor Power:	1.00kW
FLC/Start:	2.00A / 2.00A
Motor Speed:	-
Motor Efficiency:	-

Sound Data

Spectrum (Hz):	63	125	250	500	1K	2K	4K	8K	dBW	dB(A) @ 3m
Inlet (dB):	80	82	79	70	65	65	61	54	86	54
Outlet (dB):	80	82	74	72	69	68	65	59	85	55
Breakout (dB):	69	67	64	56	48	44	39	30	72	38

Sound levels are quoted as in-duct values. dB(A) values are average spherical free-field for comparative use only.

Ventilation Equipment Ltd

Understood to also apply to EF-PR2-01.

TECHNICAL SPECIFICATION SHEET

Date: 20 July 2022
Quote No: Q 10688

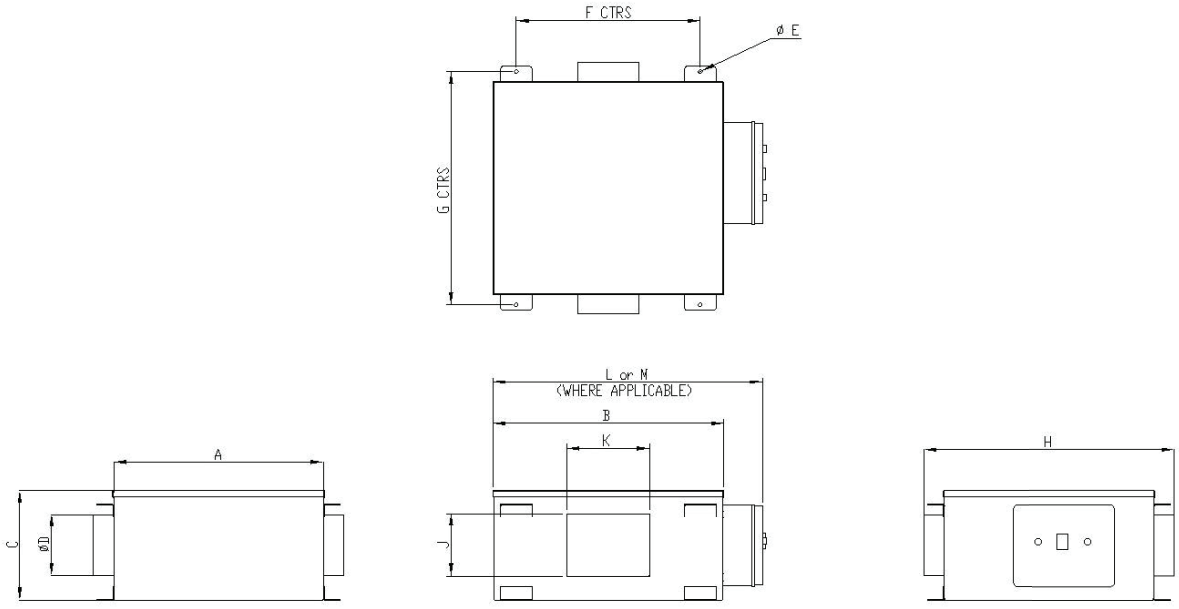
Project Reference: UCL IOE Bedford Way
Unit No: 10688-06-23

Unit Reference: EF-PR1-01
Revision: 23

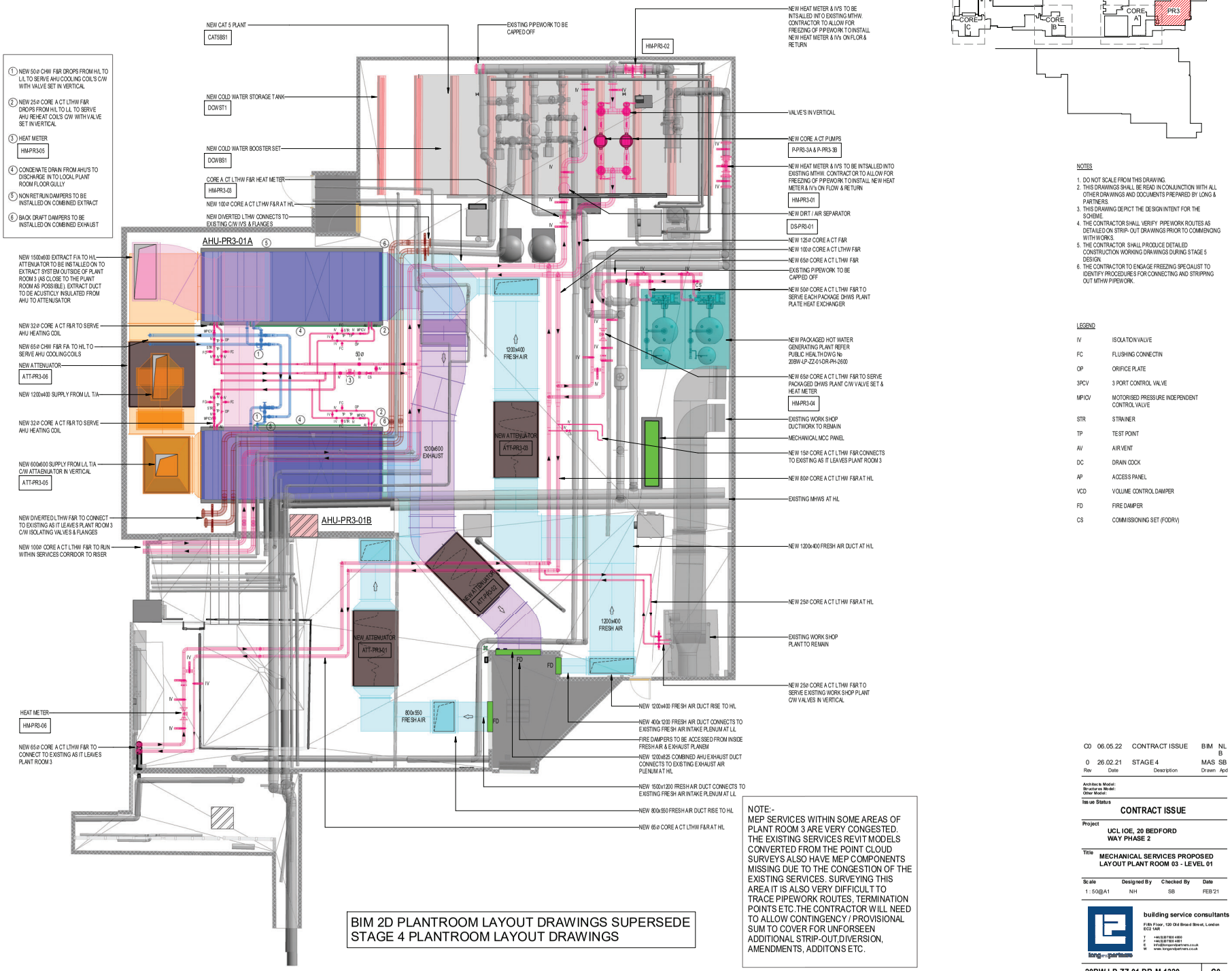
Energy Related Product Data

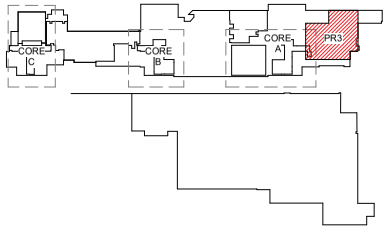
Typology:	NRVU, UVU	Drive Type:	Variable-Speed
HRS Type:	None	Thermal Efficiency:	n/a%
Nom. Flow Rate:	0.99 m³/s	Effective Input Power:	1.055 kW
SFP int:	1066 W/(m³/s)	Face Velocity:	5.04 m/s
Nom. Ext. Pressure:	474 Pa	Casing Sound Power:	55 dB(A)
Internal Pressure:	n/a	Int. Pressure (non-vent):	n/a
Static Efficiency:	48.4%	Max. External Leakage:	2%

A	B	C	D	E	F	G	H	J*	K*	L (W/ STANDARD BOX)	M (W/ DCV)
1060	1212	602	497	10	1077	1116	1156	498	598	B + 96	B + 88



Appendix H Level 1 – Plant Room 3 Information





NOTES

1. DO NOT SCALE FROM THIS DRAWING.
2. THIS DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS AND DOCUMENTS PREPARED BY LONG & PARTNERS.
3. THIS DRAWING DEPICT THE DESIGN INTENT FOR THE SCHEME.
4. THE CONTRACTOR SHALL VERIFY PIPEWORK ROUTES AS DETAILED ON STRIP- OUT DRAWINGS PRIOR TO COMMENCING WITH WORKS.
5. THE CONTRACTOR SHALL PRODUCE DETAILED CONSTRUCTION WORKING DRAWINGS DURING STAGE 5 DESIGN.
6. THE CONTRACTOR TO ENGAGE FREEZING SPECIALIST TO IDENTIFY PROCEDURES FOR CONNECTING AND STRIPPING OUT MTHW PIPEWORK.

LEGEND

IV	ISOLATION VALVE
FC	FLUSHING CONNECTIN
OP	ORIFICE PLATE
3PCV	3 PORT CONTROL VALVE
MPICV	MOTORISED PRESSURE INDEPENDENT CONTROL VALVE
STR	STRAINER
TP	TEST POINT
AV	AIR VENT
DC	DRAIN COCK
AP	ACCESS PANEL
VCD	VOLUME CONTROL DAMPER
FD	FIRE DAMPER
CS	COMMISSIONING SET (FODRV)

BIM 2D PLANTROOM LAYOUT DRAWINGS SUPERSEDE STAGE 4 PLANTROOM LAYOUT DRAWINGS

NOTE:-
MEP SERVICES WITHIN SOME AREAS OF PLANT ROOM 3 ARE VERY CONGESTED. THE EXISTING SERVICES REVIT MODELS CONVERTED FROM THE POINT CLOUD SURVEYS ALSO HAVE MEP COMPONENTS MISSING DUE TO THE CONGESTION OF THE EXISTING SERVICES. SURVEYING THIS AREA IT IS ALSO VERY DIFFICULT TO TRACE PIPEWORK ROUTES, TERMINATION POINTS ETC.THE CONTRACTOR WILL NEED TO ALLOW CONTINGENCY / PROVISIONAL SUM TO COVER FOR UNFORSEEN ADDITIONAL STRIP-OUT,DIVERSION, AMENDMENTS, ADDITONS ETC.

Rev	Date	Description	Drawn	Apd
C0	06.05.22	CONTRACT ISSUE	BIM	NL B
0	26.02.21	STAGE 4	MAS	SB

Architects Model:
Structures Model:
Other Model:

Issue Status
CONTRACT ISSUE

Project
UCL IOE, 20 BEDFORD WAY PHASE 2

Title
MECHANICAL SERVICES PROPOSED LAYOUT PLANT ROOM 03 - LEVEL 01

Scale	Designed By	Checked By	Date
1 : 50@A1	NH	SB	FEB'21

building service consultants
Fifth Floor, 120 Old Broad Street, London EC2 1AR.
T +44(0)207920 4900
F +44(0)207920 4901
E info@longandpartners.co.uk
W www.longandpartners.co.uk

20BW-LP-ZZ-01-DR-M-1320 | **C0**

TECHNICAL SPECIFICATION SHEET

Ventilation Equipment Ltd

Project: UCL IOE Bedford Way
Quotation Reference: Q10688
Date: 4th July 2022

Customer Unit Reference	**AHU-4**	**Serving**	**AHU-PR3-01A**	
Unit Reference	Q10688-04-23			
Model Reference	Non-standard			
AHU Details				
Design Supply Air Volume	2.025	m³/s		
External Static Pressure	450	Pa		
Unit Velocity	1.40	m/s		
Design Extract Air Volume	2.025	m³/s		
External Static Pressure	450	Pa		
Unit Velocity	1.40	m/s		

Energy Use				
	Supply	Extract	Overall	
Specific Fan Power	1.15	0.99	2.14	kW/(m^3/s)

AHU Construction		**Construction**	
Framework	56 mm	Unit Location	Internal
Framework Coating	Anodized	Weather Roof	None
Panel Depth	45 mm	Baseframe	150 x 75 x 2.0 Folded Galv
External Panel Finish	Mica Coated steel 0.90mm	Casing performance (EN 1886 Standard)	
Internal Panel Finsh	Galv Sheet 0.9mm	Leakage Class	L1
Panel Insulation	Mineral Wool 45mm	Casing strength	D1
		Thermal Transmittance	T3
		Thermal Bridge	TB3

Overall Unit Dimensions				
	Length	Width	Height	Weight (Per Unit)
	4750 mm	1900 mm	2100 mm	1781 kg

Section Weights and Dimensions				
Section No.	Length	Width	Height	Weight Approx +/-5%
A	1400 mm	1900 mm	975 mm	344 kg
B	600 mm	1900 mm	1950 mm	333 kg
C	2750 mm	1900 mm	975 mm	644 kg
D	900 mm	1900 mm	975 mm	166 kg
E	1400 mm	1900 mm	975 mm	293 kg

Inlet Section			**Construction**	
Component	Damper		Casing	Aluminium - Class 2
Air Pressure Drop	1.00	Pa	Control	Extended Spindle

Accessories

Damper actuators to be provided and fitted by others.
Traffolyte Component label

Heating Coil			**Construction**	
Air On / Off	-4.00/5.0	°C/°C	Casing Material	Galvanised
Duty	22.09	kW	Tube Material	Copper
Water(Inlet)/(Outlet)	75.00/55.00	°C/°C	Fin Material	Aluminium
Water PD	12	kPa	Connection Size	1 x 1"(F) / 1 x 1"(R)
Water Flow Rate	0.27	L/s		
Air Pressure Drop	6.00	Pa		
Internal Volume	6.70	l		

Accessories

Valve and actuator to be supplied and fitted by others
Traffolyte Component label

TECHNICAL SPECIFICATION SHEET

Ventilation Equipment Ltd

Project: UCL IOE Bedford Way
Quotation Reference: Q10688
Date: 4th July 2022

Customer Unit Reference	**AHU-4**	**Serving**	**AHU-PR3-01A**
Unit Reference	Q10688-04-23		
Model Reference	Non-standard		

Panel and Bag Filter			**Construction**	
Panel Clean PD	42	Pa	Panel Grade	Coarse 85%(ISO16890)
Panel Mean	96	Pa	Panel Media	Card Frame-Cotton/Synthetic Media
Panel Recommended Dirty	150	Pa	Panel Size 1 / Qty	3 x 594 x 594 x 45 mm
Bag Clean PD	55	Pa	Bag Grade	ePM1 60%(ISO16890)
Bag Mean	127	Pa	Bag Media	25mm Galv Frame/Glass Fibre
Bag Recommended dirty	200	Pa	Bag Size 1 / Qty	3 x 595 x 595 x 635mm

Accessories

Factory fitted Dwyer Minihelic gauge (Range 0-250 Pa)
Factory fitted Dwyer Minihelic gauge (Range 0-500 Pa)
Traffolyte Component label

Heat Wheel Section				**Construction**
	Winter	**Summer**		
Supply Air On (db/RH)	-4.00/100.0	30.10/44.4	°C/%	Matrix Type 1: P-Condensation
Supply Air Off (db/RH)	15.72/48.1	23.89/63.9	°C/%	Product Type
Exhaust Air On (db/RH)	21.00/50.1	22.00/50.0	°C/%	
Exhaust Air Off (db/RH)	2.95/95.0	28.23/34.5	°C/%	
Heat Recovery	65.11	-15.53	kW	
Efficiency	79.9	80.7	%	
Supply Pressure Drop	59.82	73.76	Pa	
Exhaust Pressure Drop	70.03	70.44	Pa	

Accessories

Heat exchanger selection compliant to ERP2018 (Ecodesign directive 1253/2014)
Condensation Rotor for sensible heat recovery
Variable speed drive_factory fitted & wired (Internally to Heat Wheel section) for integration into the control system (Requires 0-10v input signals)
Factory fitted IP54 external terminal box c/w wiring to Heat Wheel Controller
Manufacturers site attendance for start-up of Thermal Wheel (see additional costs)
Traffolyte Component label

Supply Fan - Single Fan			**Construction**	
Design Air Volume	2.025	m³/s	Impeller	Backward Curve
Total Fan Resistance	723	Pa	Internal Isolation	Rubber
Fan Speed	1736	r/min		
Frequency @ Design Speed	67.54	Hz		
Max Frequency	76.00	Hz		
Maximum Fan Speed	2010	r/min		
Efficiency	79.47	%		

Motor Data (Electrical Loads per Fan)			**Construction**	
FLC	6.30	Amps	Type	AC
Total Input Power	2.18	kW	Rating	IE3
Motor Power	4.00	kW		
Motor Speed	1450	r/min		
Electrical Supply	400/3/50.00			

TECHNICAL SPECIFICATION SHEET

Ventilation Equipment Ltd

Project: UCL IOE Bedford Way
Quotation Reference: Q10688
Date: 4th July 2022

Customer Unit Reference	**AHU-4**	**Serving**	**AHU-PR3-01A**
Unit Reference	Q10688-04-23		
Model Reference	Non-standard		

Accessories

Factory fitted IP44 Internal bulkhead light (42W) wired to an IP66 external switch
Factory fitted viewport
Removable wire mesh guard is fitted behind the fan access door.
Over temperature protection thermister (For integration in to the controls system)
Fan Label kit, Fan Access, Traffolyte Warning label - Fan run down, Danger label - Safety, Electrical Isolation
Inlet Flexible Connection
Factory Fitted Inlet Guard
Fan motor(s) will be wired with screened cable to an externally mounted IP66 rated isolator(s)
IP54 rated VSD drive(s) factory fitted externally on the access side of the unit and wired to the fan motor(s) with screened cable.

Chilled Water Coil			**Construction**	
Air On (db/wb)	30.10/21.00	°C/°C	Casing Material	Galvanised
Air Off (db/wb)	20.2/17.4	°C/°C	Tube Material	Copper
Duty	29.11	kW	Fin Material	Aluminium
Water(Inlet)/(Outlet)	7.00/12.00	°C/°C	Connection Size	1 x 1½"(F) / 1 x 1½"(R)
Water PD	24	kPa	Eliminators	not needed BUT fit P400
Water Flow Rate	1.39	L/s	Drain Tray	7 S Steel draintray
Face Velocity	1.88	m/s		
Air Pressure Drop	34.00	Pa		
Internal Volume	13.10	l		

Accessories

Valve and actuator to be supplied and fitted by others
Traffolyte label - Drain Trap Instruction
Traffolyte Component label

Access Section		
Length	500	mm
Access Side	Right	

Accessories

Traffolyte Component Access label

Heating Coil			**Construction**	
Air On / Off	5.00/22.0	°C/°C	Casing Material	Galvanised
Duty	41.72	kW	Tube Material	Copper
Water(Inlet)/(Outlet)	75.00/55.00	°C/°C	Fin Material	Aluminium
Water PD	16	kPa	Connection Size	1 x 1¼"(F) / 1 x 1¼"(R)
Water Flow Rate	0.51	L/s		
Air Pressure Drop	9.00	Pa		
Internal Volume	6.70	l		

Accessories

Valve and actuator to be supplied and fitted by others
Traffolyte Component label

Outlet Section			**Construction**	
Component	Damper		Casing	Aluminium - Class 2
Air Pressure Drop	1.00	Pa	Control	Manual

Accessories

Damper fitted with quadrant for manual adjustment (Air Balancing by others)
Traffolyte Component label

Inlet Section			**Construction**	
Component	Damper		Casing	Aluminium - Class 2
Air Pressure Drop	1.00	Pa	Control	Manual

TECHNICAL SPECIFICATION SHEET

Ventilation Equipment Ltd

Project: UCL IOE Bedford Way
Quotation Reference: Q10688
Date: 4th July 2022

Customer Unit Reference	**AHU-4**	**Serving**	**AHU-PR3-01A**
Unit Reference	Q10688-04-23		
Model Reference	Non-standard		

Accessories

Damper fitted with quadrant for manual adjustment (Air Balancing by others)
Traffolyte Component label

Bag Filter			**Construction**	
Clean PD	55	Pa	Grade	ePM1 60%(ISO16890)
Mean	127	Pa	Media	25mm Galv Frame/Glass Fibre
Recommended dirty	200	Pa	Withdrawal	Side
			Size 1 / Qty	3 x 595 x 595 x 635 mm

Accessories

Factory fitted Dwyer Minihelic gauge (Range 0-500 Pa)
Traffolyte Component label

Exhaust Fan - Single Fan			**Construction**	
Design Air Volume	2.025	m³/s	Impeller	Backward Curve
Total Fan Resistance	642	Pa	Internal Isolation	Rubber
Fan Speed	1900	r/min		
Frequency @ Design Speed	65.76	Hz		
Max Frequency	70.00	Hz		
Maximum Fan Speed	2020	r/min		
Efficiency	78.73	%		

Motor Data (Electrical Loads per Fan)			**Construction**	
FLC	4.70	Amps	Type	AC
Total Input Power	1.96	kW	Rating	IE3
Motor Power	2.20	kW		
Motor Speed	1445	r/min		
Electrical Supply	400/3/50.00			

Accessories

Factory fitted IP44 Internal bulkhead light (42W) wired to an IP66 external switch
Factory fitted viewport
Removable wire mesh guard is fitted behind the fan access door.
Over temperature protection thermister (For integration in to the controls system)
Fan Label kit, Fan Access, Traffolyte Warning label - Fan run down, Danger label - Safety, Electrical Isolation
Inlet Flexible Connection
Factory Fitted Inlet Guard
Fan motor(s) will be wired with screened cable to an externally mounted IP66 rated isolator(s)
IP54 rated VSD drive(s) factory fitted externally on the access side of the unit and wired to the fan motor(s) with screened cable.

Outlet Section			**Construction**	
Component	Damper		Casing	Aluminium - Class 2
Air Pressure Drop	1.00	Pa	Control	Extended Spindle

Accessories

Damper actuators to be provided and fitted by others.
Traffolyte Component label

TECHNICAL SPECIFICATION SHEET

Ventilation Equipment Ltd

Project: UCL IOE Bedford Way
Quotation Reference: Q10688
Date: 4th July 2022

Customer Unit Reference	**AHU-4**	**Serving**		**AHU-PR3-01A**			
Unit Reference	Q10688-04-23						
Model Reference	Non-standard						

AHU Acoustic Data:

Acoustic Data (Supply Fan Sound Power Level): Per Fan

Frequency(Hz)	63	125	250	500	1K	2K	4K	8K
Supply Fan Inlet Lw (dB):	67	67	78	74	72	68	65	66
Supply Fan Outlet Lw (dB):	73	71	82	81	84	74	71	70

Acoustic Data (Extract Fan Sound Power Level): Per Fan

Frequency(Hz)	63	125	250	500	1K	2K	4K	8K
Extract Fan Inlet Lw (dB)	68	68	77	73	72	67	65	66
Extract Fan Outlet Lw (dB)	73	79	81	81	83	74	71	70

The In-duct Sound Power Level Spectra are in dB re-1pW.
The fan sound power levels shown above do not include for the effects of mounting the fans within the AHU section(s). Please allow for the additional correction of 6db across the spectrum.

TECHNICAL SPECIFICATION SHEET

Ventilation Equipment Ltd

Project:	UCL IOE Bedford Way
Quotation Reference:	Q10688
Date:	4th July 2022

Customer Unit Reference	**AHU-5**	**Serving**	**AHU-PR3-01B**	
Unit Reference	Q10688-05-23			
Model Reference	Non-standard			
AHU Details				
Design Supply Air Volume	2.025	m³/s		
External Static Pressure	450	Pa		
Unit Velocity	1.18	m/s		
Design Extract Air Volume	2.025	m³/s		
External Static Pressure	450	Pa		
Unit Velocity	1.18	m/s		

Energy Use				
	Supply	Extract	Overall	
Specific Fan Power	1.15	0.99	2.14	kW/(m^3/s)

AHU Construction		**Construction**	
Framework	56 mm	Unit Location	Internal
Framework Coating	Anodized	Weather Roof	None
Panel Depth	45 mm	Baseframe	150 x 75 x 2.0 Folded Galv
External Panel Finish	Mica Coated steel 0.90mm	Casing performance (EN 1886 Standard)	
Internal Panel Finsh	Galv Sheet 0.9mm	Leakage Class	L1
Panel Insulation	Mineral Wool 45mm	Casing strength	D1
		Thermal Transmittance	T3
		Thermal Bridge	TB3

Overall Unit Dimensions				
	Length	Width	Height	Weight (Per Unit)
	4750 mm	1900 mm	2100 mm	1736 kg

Section Weights and Dimensions				
Section No.	Length	Width	Height	Weight Approx +/-5%
A	1300 mm	1900 mm	975 mm	332 kg
B	600 mm	1900 mm	1950 mm	322 kg
C	2850 mm	1900 mm	975 mm	643 kg
D	900 mm	1900 mm	975 mm	166 kg
E	1300 mm	1900 mm	975 mm	273 kg

Inlet Section			**Construction**	
Component	Damper		Casing	Aluminium - Class 2
Air Pressure Drop	1.00	Pa	Control	Extended Spindle

Accessories

Damper actuators to be provided and fitted by others.
Traffolyte Component label

Heating Coil			**Construction**	
Air On / Off	-4.00/5.0	°C/°C	Casing Material	Galvanised
Duty	22.09	kW	Tube Material	Copper
Water(Inlet)/(Outlet)	75.00/55.00	°C/°C	Fin Material	Aluminium
Water PD	12	kPa	Connection Size	1 x 1"(F) / 1 x 1"(R)
Water Flow Rate	0.27	L/s		
Air Pressure Drop	6.00	Pa		
Internal Volume	6.70	l		

Accessories

Valve and actuator to be supplied and fitted by others
Traffolyte Component label

TECHNICAL SPECIFICATION SHEET

Ventilation Equipment Ltd

Project: UCL IOE Bedford Way
Quotation Reference: Q10688
Date: 4th July 2022

Customer Unit Reference	**AHU-5**	**Serving**	**AHU-PR3-01B**
Unit Reference	Q10688-05-23		
Model Reference	Non-standard		

Panel and Bag Filter			**Construction**	
Panel Clean PD	42	Pa	Panel Grade	Coarse 85%(ISO16890)
Panel Mean	96	Pa	Panel Media	Card Frame-Cotton/Synthetic Media
Panel Recommended Dirty	150	Pa	Panel Size 1 / Qty	3 x 495 x 594 x 45 mm
Bag Clean PD	55	Pa	Bag Grade	ePM1 60%(ISO16890)
Bag Mean	127	Pa	Bag Media	25mm Galv Frame/Glass Fibre
Bag Recommended dirty	200	Pa	Bag Size 1 / Qty	3 x 495 x 595 x 635mm

Accessories

Factory fitted Dwyer Minihelic gauge (Range 0-250 Pa)
Factory fitted Dwyer Minihelic gauge (Range 0-500 Pa)
Traffolyte Component label

Heat Wheel Section				**Construction**
	Winter	**Summer**		
Supply Air On (db/RH)	-4.00/100.0	30.10/44.4	°C/%	Matrix Type 1: P-Condensation
Supply Air Off (db/RH)	15.72/48.1	23.89/63.9	°C/%	Product Type
Exhaust Air On (db/RH)	21.00/50.1	22.00/50.0	°C/%	
Exhaust Air Off (db/RH)	2.95/95.0	28.23/34.5	°C/%	
Heat Recovery	65.11	-15.53	kW	
Efficiency	79.9	80.7	%	
Supply Pressure Drop	59.82	73.76	Pa	
Exhaust Pressure Drop	70.03	70.44	Pa	

Accessories

Heat exchanger selection compliant to ERP2018 (Ecodesign directive 1253/2014)
Condensation Rotor for sensible heat recovery
Variable speed drive_factory fitted & wired (Internally to Heat Wheel section) for integration into the control system (Requires 0-10v input signals)
Factory fitted IP54 external terminal box c/w wiring to Heat Wheel Controller
Manufacturers site attendance for start-up of Thermal Wheel (see additional costs)
Traffolyte Component label

Supply Fan - Single Fan			**Construction**	
Design Air Volume	2.025	m^3/s	Impeller	Backward Curve
Total Fan Resistance	723	Pa	Internal Isolation	Rubber
Fan Speed	1736	r/min		
Frequency @ Design Speed	67.54	Hz		
Max Frequency	76.00	Hz		
Maximum Fan Speed	2010	r/min		
Efficiency	79.47	%		

Motor Data (Electrical Loads per Fan)			**Construction**	
FLC	6.30	Amps	Type	AC
Total Input Power	2.18	kW	Rating	IE3
Motor Power	4.00	kW		
Motor Speed	1450	r/min		
Electrical Supply	400/3/50.00			

TECHNICAL SPECIFICATION SHEET

Ventilation Equipment Ltd

Project: UCL IOE Bedford Way
Quotation Reference: Q10688
Date: 4th July 2022

Customer Unit Reference	**AHU-5**	**Serving**	**AHU-PR3-01B**
Unit Reference	Q10688-05-23		
Model Reference	Non-standard		

Accessories

Factory fitted IP44 Internal bulkhead light (42W) wired to an IP66 external switch
Factory fitted viewport
Removable wire mesh guard is fitted behind the fan access door.
Over temperature protection thermister (For integration in to the controls system)
Fan Label kit, Fan Access, Traffolyte Warning label - Fan run down, Danger label - Safety, Electrical Isolation
Inlet Flexible Connection
Factory Fitted Inlet Guard
Fan motor(s) will be wired with screened cable to an externally mounted IP66 rated isolator(s)
IP54 rated VSD drive(s) factory fitted externally on the access side of the unit and wired to the fan motor(s) with screened cable.

Chilled Water Coil			**Construction**	
Air On (db/wb)	30.10/21.00	°C/°C	Casing Material	Galvanised
Air Off (db/wb)	20.2/17.4	°C/°C	Tube Material	Copper
Duty	29.11	kW	Fin Material	Aluminium
Water(Inlet)/(Outlet)	7.00/12.00	°C/°C	Connection Size	1 x 1½"(F) / 1 x 1½"(R)
Water PD	24	kPa	Eliminators	not needed BUT fit P400
Water Flow Rate	1.39	L/s	Drain Tray	7 S Steel draintray
Face Velocity	1.88	m/s		
Air Pressure Drop	34.00	Pa		
Internal Volume	13.10	l		

Accessories

Valve and actuator to be supplied and fitted by others
Traffolyte label - Drain Trap Instruction
Traffolyte Component label

Access Section		
Length	500	mm
Access Side	Right	

Accessories

Traffolyte Component Access label

Heating Coil			**Construction**	
Air On / Off	5.00/22.0	°C/°C	Casing Material	Galvanised
Duty	41.72	kW	Tube Material	Copper
Water(Inlet)/(Outlet)	75.00/55.00	°C/°C	Fin Material	Aluminium
Water PD	16	kPa	Connection Size	1 x 1¼"(F) / 1 x 1¼"(R)
Water Flow Rate	0.51	L/s		
Air Pressure Drop	9.00	Pa		
Internal Volume	6.70	l		

Accessories

Valve and actuator to be supplied and fitted by others
Traffolyte Component label

Outlet Section			**Construction**	
Component	Damper		Casing	Aluminium - Class 2
Air Pressure Drop	1.00	Pa	Control	Manual

Accessories

Damper fitted with quadrant for manual adjustment (Air Balancing by others)
Traffolyte Component label

Inlet Section			**Construction**	
Component	Damper		Casing	Aluminium - Class 2
Air Pressure Drop	1.00	Pa	Control	Manual

TECHNICAL SPECIFICATION SHEET

Ventilation Equipment Ltd

Project: UCL IOE Bedford Way
Quotation Reference: Q10688
Date: 4th July 2022

Customer Unit Reference	**AHU-5**	**Serving**	**AHU-PR3-01B**
Unit Reference	Q10688-05-23		
Model Reference	Non-standard		

Accessories

Damper fitted with quadrant for manual adjustment (Air Balancing by others)
Traffolyte Component label

Bag Filter			**Construction**	
Clean PD	55	Pa	Grade	ePM1 60%(ISO16890)
Mean	135	Pa	Media	25mm Galv Frame/Glass Fibre
Recommended dirty	200	Pa	Withdrawal	Side
			Size 1 / Qty	3 x 495 x 595 x 635 mm

Accessories

Factory fitted Dwyer Minihelic gauge (Range 0-500 Pa)
Traffolyte Component label

Exhaust Fan - Single Fan			**Construction**	
Design Air Volume	2.025	m³/s	Impeller	Backward Curve
Total Fan Resistance	642	Pa	Internal Isolation	Rubber
Fan Speed	1900	r/min		
Frequency @ Design Speed	65.76	Hz		
Max Frequency	70.00	Hz		
Maximum Fan Speed	2020	r/min		
Efficiency	78.73	%		

Motor Data (Electrical Loads per Fan)			**Construction**	
FLC	4.70	Amps	Type	AC
Total Input Power	1.96	kW	Rating	IE3
Motor Power	2.20	kW		
Motor Speed	1445	r/min		
Electrical Supply	400/3/50.00			

Accessories

Factory fitted IP44 Internal bulkhead light (42W) wired to an IP66 external switch
Factory fitted viewport
Removable wire mesh guard is fitted behind the fan access door.
Over temperature protection thermister (For integration in to the controls system)
Fan Label kit, Fan Access, Traffolyte Warning label - Fan run down, Danger label - Safety, Electrical Isolation
Inlet Flexible Connection
Factory Fitted Inlet Guard
Fan motor(s) will be wired with screened cable to an externally mounted IP66 rated isolator(s)
IP54 rated VSD drive(s) factory fitted externally on the access side of the unit and wired to the fan motor(s) with screened cable.

Outlet Section			**Construction**	
Component	Damper		Casing	Aluminium - Class 2
Air Pressure Drop	1.00	Pa	Control	Extended Spindle

Accessories

Damper actuators to be provided and fitted by others.
Traffolyte Component label

TECHNICAL SPECIFICATION SHEET

Ventilation Equipment Ltd

Project: UCL IOE Bedford Way
Quotation Reference: Q10688
Date: 4th July 2022

Customer Unit Reference	**AHU-5**	**Serving**	**AHU-PR3-01B**
Unit Reference	Q10688-05-23		
Model Reference	Non-standard		

AHU Acoustic Data:

Acoustic Data (Supply Fan Sound Power Level): Per Fan

Frequency(Hz)	63	125	250	500	1K	2K	4K	8K
Supply Fan Inlet Lw (dB):	67	67	78	74	72	68	65	66
Supply Fan Outlet Lw (dB):	73	71	82	81	84	74	71	70

Acoustic Data (Extract Fan Sound Power Level): Per Fan

Frequency(Hz)	63	125	250	500	1K	2K	4K	8K
Extract Fan Inlet Lw (dB)	68	68	77	73	72	67	65	66
Extract Fan Outlet Lw (dB)	73	79	81	81	83	74	71	70

The In-duct Sound Power Level Spectra are in dB re-1pW.
The fan sound power levels shown above do not include for the effects of mounting the fans within the AHU section(s). Please allow for the additional correction of 6db across the spectrum.

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