Appendix A - **Information Required to Support Planning Applications for Commercial Kitchen Exhaust Systems**

This form has been developed in line with the Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems - DEFRA 2005

The following points from the guidance should be adhered to:

- The aim of any ventilation/extraction is to ensure that no nuisance, disturbance of loss of amenity is caused by odour, fumes, food droplets or noise to nearby properties.
- A suitably qualified and experienced person with specialist knowledge of ventilation schemes should undertake the design and installation of a ventilation system.
- In circumstances where the end user of the premises is unknown, or where the specific type of food to be cooked is unknown, the installation should be designed to achieve the highest level of odour control in order to cater for a worst case scenario.

Information Required:

1. Information on Premises - No of meals to be served per day. - Method of preparation and cooking. - Type of food served.	Over 100 covers Gas, Live fuel charcoal. High level of fried food, with a variety of meats.
2. Plans and Drawings - Scaled plan showing internal arrangement of premises and dimensions/location of the ventilation system. - Scaled plan showing dimensions and route of external exhaust duct work. The location and type of all filters and the location of the fan must be clearly marked.	*001 – 1056 – 01 Rev G* *001 – 1056 – 02 – Rev D* *001 – 1056 – 03* *001 – 1056 – 04*
3. Pre-filters - Copy of manufacturer's product data sheet. - Dimensions and nature of pre-filter media. - Manufacturer's recommendations on frequency and type of maintenance.	*Pre filters are standard stainless steel baffle grease filters, with secondary mesh.*
4. Electrostatic precipitators (where proposed) - Copy of manufacturer's product data sheet. - Dimensions of ESP and flow rate rating. - Manufacturer's recommendations on frequency and type of maintenance.	6 x no Purified Air ESP 4500 Data sheets attached.
5. Carbon filters (where proposed)	None

- Copy of manufacturer's product data sheet. - Dimensions on filter panel. - No. of filter panels in filter bed. - Nature of carbon (including product type). - Frequency of replacement of units. - Dwell time.	
6. Odour counteractant or neutralizing system (where proposed) - Copy of manufacturer's product data sheet. - Counteractant or neutralizing chemical to be used. - COSHH data sheets for chemical to be used.	2 x no Purified Air UV0 1000 Data sheets attached.
7. Cooker Head - Length the cooker hood overhangs the appliances.	300mm
8. System operation - Extract rate in m3/s	*Main canopy 3.43m3/s* *Oven canopy 0.37m3/s*
9. Flue Design - Height and velocity of final discharge. Discharge should be min. 1m above roof ridge level. Where this is not possible additional filters will be required. Final discharge should be vertically upwards and unimpeded by flue terminals.	High level 6th floor vertical discharge @ 15 m/s
10. Maintenance Schedule of maintenance must be provided including details for: - Cleaning of washable grease filters. - Frequency of inspection and replacement of all filters proposed. - Inspection and servicing of fans.	Grease filters - washed daily. ESP – replace cells quarterly. UVO – replace tubes annually.

Additional Notes:

- Air inlets must not permit pests to enter kitchen (e.g. fly screens can be used).

- The method for supplying make up air into the kitchen must not result in its contamination (e.g. separate provision must be made for ventilation of a toilet).

- There must be sufficient access points to permit adequate cleaning of all the ductwork.

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SPECIFIC EXTRACT FLOW RATE (SEFR) - DW/172:2017

100%	SEFR WITH CCA - m^3/s	3.82
85%	MAKE-UP AIR - m^3/s	3.25

CLIENT Blacklock					17/07/2023 DATE	
SITE Manchester					CANOPY FACTOR	1.15
					Equipment Flow Rate (m^3/s)	3.320175

Canopy Factors

Type				Open Both Ends	Open One End	Closed Both Ends				
Low Level				1.15	1.10	1.05				
Passover				1.15	1.10	1.05				
Overhead Wall				1.25	1.20	1.15				
Overhead Wall, Island Mounted				1.50	1.40	1.30				
Island				1.35	1.25	1.15				

				10				1.58	1.6525	3.320175
Appliance	Coefficient		Surface Temp	Qty	Dims	Dims	Power	Coefficient	Area	Flow Rate
	Gas	Electric			Width	Depth	Gas or electric			
	m^3/s per m^2		°C	#	(mm)	(mm)	G or E or S		(m^2)	m^3/s	m^3/s
MISCELLANEOUS											
Benches, Spreaders and Worktops	0.03	0.03	25	2	300.00	600	g	0.03	0.18	**0.01**	0.01
Benches, Spreaders and Worktops	0.03	0.03	25					0.00	0.00	**0.00**	0.00
Sink	0.15	0.15	25					0.00	0.00	**0.00**	0.00
Pass Through Dishwasher	0.40	0.40	61					0.00	0.00	**0.00**	0.00
Pan/Utensil Wash Machine	0.40	0.40	42					0.00	0.00	**0.00**	0.00
Rack and Flight Dishwasher	*See manufacturer's Spec*		58								
HEATING/WATER											
Coffee Maker	0.00	0.03	25					0.00	0.00	**0.00**	0.00
Microwave Oven/Toaster	0.00	0.03	25					0.00	0.00	**0.00**	0.00
Bains Marie, Hot Cupboard	0.20	0.15	57					0.00	0.00	**0.00**	0.00
Chip Scuttle	0.15	0.15	35								
Servery Counter - Hot Food	0.24	0.24	73					0.00	0.00	**0.00**	0.00
Water Boiler/Still/Beverage Unit	0.25	0.20	78					0.00	0.00	**0.00**	0.00
Light Duty Boiling Pan, Tilting Kettle	0.30	0.25	98					0.00	0.00	**0.00**	0.00
Refrigeration Unit	*See manufacturer's Spec*	0.25	35					0.00	0.00	**0.00**	0.00
BOILING / ROASTING / STEAMING											
Induction Hob, Ceramic Stove	0.20	0.20	30					0.00	0.00	**0.00**	0.00
Combination Microwave Ovens	0.15	0.15	35					0.00	0.00	**0.00**	0.00
Open Top Range and Oven	0.40	0.30	190					0.00	0.00	**0.00**	0.00
Open Top Range and Oven	0.40	0.30	190					0.00	0.00	**0.00**	0.00
Open Top Range and Oven	0.40	0.30	190					0.00	0.00	**0.00**	0.00
Solid Top Oven Range	0.60	0.51	420	1	900	600	g	0.60	0.54	**0.32**	0.37
Boiling Table, Hob Top, Stock Pot Stove	0.35	0.25	190					0.00	0.00	**0.00**	0.00
Boiling Pan / Steam Kettle	0.35	0.25	146					0.00	0.00	**0.00**	0.00
Bratt Pan	1.10	0.90	190					0.00	0.00	**0.00**	0.00
Heavy Duty Multi/Bulk Cooking Pan	0.90	0.90	240					0.00	0.00	**0.00**	0.00
Pasta Cooker	0.30	0.20	120					0.00	0.00	**0.00**	0.00
Roasting Ovens (with worktop)	0.35	0.30	98					0.00	0.00	**0.00**	0.00
Tandoori Oven (not solid fuel)	0.50	0.33	90					0.00	0.00	**0.00**	0.00
Combination Steaming Ovens (use larger oven if stacked)											
→Stand-Mounted 6 grid	0.35	0.30	92					0.00	0.00	**0.00**	0.00
→Stand-Mounted 10 grid	0.45	0.32	92	3	850	850	g	0.45	0.72	**0.98**	1.12
→Stand-Mounted 12 grid	0.58	0.35	92					0.00	0.00	**0.00**	0.00
→Stand-Mounted 20 grid	0.86	0.40	92					0.00	0.00	**0.00**	0.00
→Stand-Mounted 40 grid	1.18	0.55	92					0.00	0.00	**0.00**	0.00
Atmospheric Steamer	0.35	0.20	125					0.00	0.00	**0.00**	0.00
Pressure Steamer	0.30	0.20	120					0.00	0.00	**0.00**	0.00
Dim Sum Steamer	0.30	0.20	123					0.00	0.00	**0.00**	0.00
Fan Assisted Convection Oven	0.40	0.30	86					0.00	0.00	**0.00**	0.00
Holding Oven	0.10	0.10	57					0.00	0.00	**0.00**	0.00
FRYING											
Deep Fat Fryer	0.50	0.45	190	2	350	600	g	0.50	0.21	**0.21**	0.24
Pressure Fryer	0.50	0.45	170					0.00	0.00	**0.00**	0.00
GRILLING & BROILING											
Mild Steel Griddle	0.30	0.25	190					0.00	0.00	**0.00**	0.00
Chrome Griddle / Plancha (chrome)	0.45	0.40	290					0.00	0.00	**0.00**	0.00
Induction Griddle	0.27	0.27	62					0.00	0.00	**0.00**	0.00
Clam Shell / Contact Grill	0.45	0.34	105					0.00	0.00	**0.00**	0.00
Upright or Chain Broiler	0.75	0.55	410					0.00	0.00	**0.00**	0.00
Salamander Grill	0.75	0.55	260					0.00	0.00	**0.00**	0.00
Rotisserie (not solid fuel)	0.75	0.55	195					0.00	0.00	**0.00**	0.00
Shawarma Kebab Machine	0.75	0.55	195					0.00	0.00	**0.00**	0.00
Chargrill / Charbroiler	0.95	0.52	350					0.00	0.00	**0.00**	0.00
Vapourising Grill (less than 16kW/m2)	0.75	0.75	170					0.00	0.00	**0.00**	0.00
Chinese Wok Range (Induction)	0.40	0.40	88					0.00	0.00	**0.00**	0.00
Chinese Wok Range	0.90	0.90	280					0.00	0.00	**0.00**	0.00
Chinese Wok Range (Turbo)	1.00	1.00	370					0.00	0.00	**0.00**	0.00

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PIZZA COOKING & BAING (GAS OR ELECTRIC ONLY. NO SOLID FUEL)											
Conveyor Pizza Oven											
→Single Deck	0.30	0.25	90					0.00	0.00	**0.00**	**0.00**
→Double Deck	0.60	0.50	90					0.00	0.00	**0.00**	**0.00**
→Tripple Deck	0.90	0.75	90					0.00	0.00	**0.00**	**0.00**
Deck Pizza Oven											
→Single Deck	0.20	0.15	90					0.00	0.00	**0.00**	**0.00**
→Double Deck	0.40	0.30	90					0.00	0.00	**0.00**	**0.00**
→Tripple Deck	0.60	0.45	90					0.00	0.00	**0.00**	**0.00**
Pastry / Baking Oven											
→Single Deck	0.15	0.10	90					0.00	0.00	**0.00**	**0.00**
→Double Deck	0.30	0.20	90					0.00	0.00	**0.00**	**0.00**
→Tripple Deck	0.45	0.30	90					0.00	0.00	**0.00**	**0.00**
SOLID FUEL COOKING (INCLUDING GAS OVENS THAT HAVE SOLID FUEL CAPABILITY)											
Open Grill / BBQ / Charcoal Pit	0.96	0.96	420	2	1500	700	S			**1.80**	**1.80**
Enclosed Charcoal Oven	1.24	1.24	210				S	0.00	0.00	**0.00**	**0.00**
Stone Hearth Oven	0.45	0.45	90				S	0.00	0.00	**0.00**	**0.00**
Smoker (See Manufacturers Literature - set to 1 worse case)	1.00	1.00					S	0.00	0.00	**0.00**	**0.00**
Tandoori Oven	0.55	0.55	90				S	0.00	0.00	**0.00**	**0.00**
Rotisserie	0.65	0.65	95				S	0.00	0.00	**0.00**	**0.00**

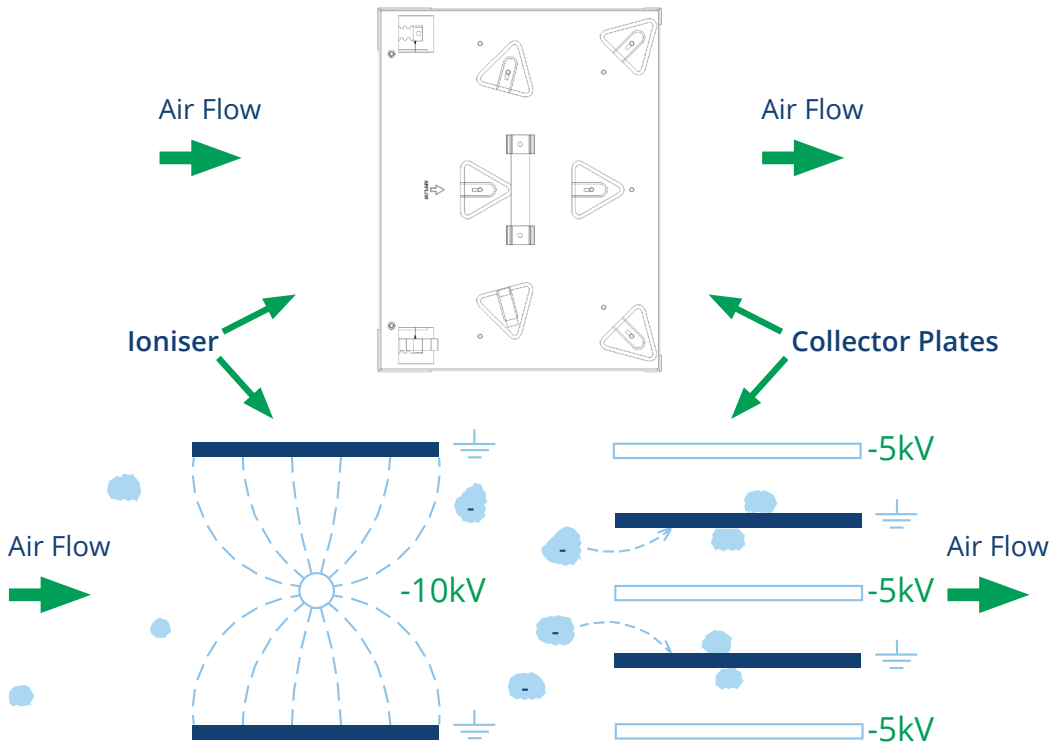
Our ESP Range

ESP 4500

- ESP 1500E which can handle up to 0.7m³/sec of air flow
- ESP 3000E which can handle up to 1.4m³/sec of air flow
- ESP 4500E which can handle up to 2.1m³/sec of air flow
- ESP 6000E which can handle up to 2.8m³/sec ofair flow

Our ESP's have been specifically designed for kitchen extract systems; they have integral sumps to collect the oil, grease and smoke particles filtered out of the exhaust. This not only simplifies servicing but eradicates potentially dangerous spillage from the bottom of the units and greatly cuts down on build-ups of grease within the ducting.

The ionisation voltage has been designed to run at a negative potential which enhances the ionisation of particles and also produces more ozone which is helpful in reducing cooking odours.



The above diagram shows, in a basic visual, how an electrostatic precipitator works. As air passes into the combined ioniser / collector cell, the particulates in the air stream are polarised to a negative potential. As they continue through the ioniser and between the collector cell plates, the polarised particulates are repelled away from the negatively charged plates and attracted to the earthed plates where they stick and so are filtered out of the air flow.

Our ESP units fit in-line with the kitchen ducting and can be configured modularly to cope with all extract volume requirements.

1. Cooking particulates and odours
2. Canopy Grease Filter
3. ESP - Particulate Control Unit
4. Airflow

KEY FEATURES

- Eliminates up to 98% of oil, grease and smoke particles
- Filters particles down to sub-micron levels
- Produces Ozone to help reduce malodours
- Designed with an integral sump
- Modular in design
- Specifically designed for commercial kitchen application
- Energy efficient: - uses no more than 50W
- Greatly reduces grease build-up within the duct run

3 ESP Units Stacked in modular formation

4 ESP Units Stacked in modular formation with a double pass

Technical Specification

	ESP 1500E	ESP 3000E	ESP 4500E	ESP 6000E
Electrical Supply	220/240V 50Hz	220/240V 50Hz	220/240V 50Hz	220/240V 50Hz
Power Consumption	20 Watts	30 Watts	40 Watts	50 Watts
Max Air Volume	up to 0.7m³/sec	up to 1.4m³/sec	up to 2.1m³/sec	up to 2.8m³/sec
Dimensions W/H/D	450mm/630mm/ 640mm	900mm/630mm/ 640mm	1350mm/630mm/ 640mm	1800mm/630mm/ 640mm
Weight	55Kg	85Kg	118Kg	153Kg

purified air® since 1984

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UV-O Range

Unlike other UV-C systems, our UV-O units are located outside of the kitchen extract duct and are connected via a spigot and spiral ducting.

KEY FEATURES

- Easy to install
- Can be retro-fitted into existing duct
- Virtually no pressure loss
- No monthly maintenance needed

Our UV-O range includes:-

- **UV-O 500 which handles up to 1 m^3/sec of air flow**
- **UV-C 1000 which handles up to 2 m^3/sec of air flow**

The UV-O 500 has been designed for smaller capacity commercial kitchens.

The UV-O range uses UV-C technology to produce ozone and hydroxyl free radicals to oxidise cooking odours through a process of ozonolysis.

Unlike other UV-C systems, our UV-O units are located outside of the kitchen extract duct and are connected via a spigot and small diameter ducting.

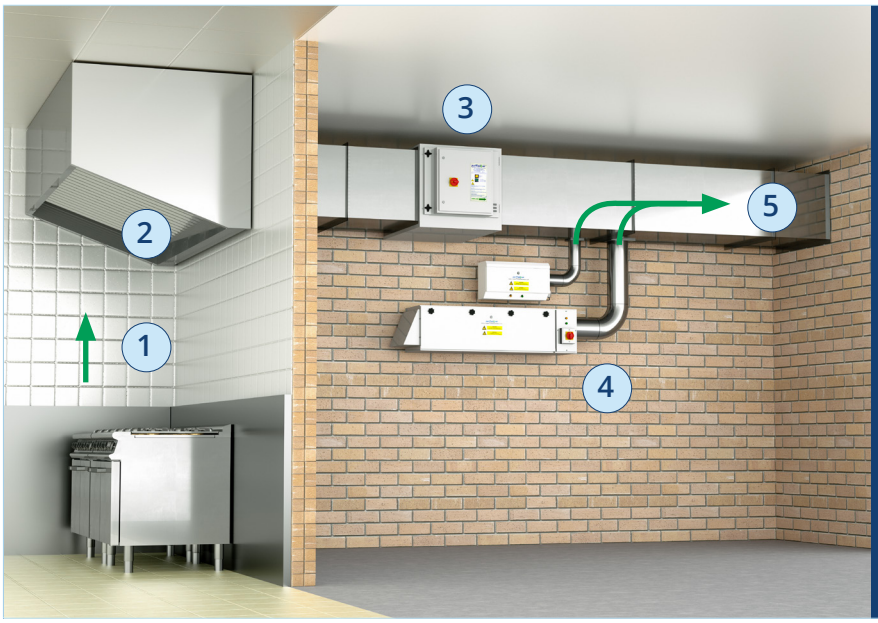
Although it is widely accepted that the best way to apply UV-C light is directly in-line with the air stream itself, performance will be impacted as the lamps get dirty.

With our UV-O units the air flow does not come from the exhaust duct but from the ambient air around the unit, which is filtered on entry. This means that it is able to provide a uniform supply of ozone and hydroxyl free radicals into the extract system with an extremely low pressure loss.

For optimum performance we would recommend between 2 & 6 seconds of dwell time to allow the ozone to work effectively upon the malodorous gasses within the duct.

UV-O 500 Unit

UV-O 1000 Unit



1. Cooking particulates and odours
2. Canopy Grease Filter
3. ESP - Particulate Control Unit
4. UV-O 500 (above)
   UV-O 1000 (below)
   Odour Control Units
5. Ozone joins airflow

Technical Specification

	UV-O 500	UV-O 1000
Electrical Supply	220/240V 50Hz	220/240V 50Hz
Power Consumption	120 Watts	700 Watts
Max Air Volume	up to 1m³/sec	up to 2m³/sec
Dimensions	W 605mm H 300mm D 200mm	W 1568mm H 350mm D 363mm
Weight	10.5Kg	50Kg

This unit's tried and tested UV-C technology allows for the siting of commercial kitchens in locations such as residential areas and shopping centres, where previously planning permission may not have been granted. After extensive research and development Purified Air are able to devise the best combination of lamps to provide the most effective odour control.

Safety

Ultra-Violet band C light is the most powerful of the three bands, it is a very strong oxidant and as such exposure to UV-C light is dangerous. To ensure safety the UV-C lamps are secured behind locked panels and the system has been engineered to shut down automatically when these panels are unlocked. However, since the lamps typically have a minimum life of twelve months and with the system able to operate at optimum efficiency even if one lamp fails it is unlikely that, apart from routine servicing by experienced engineers, that the system will ever need to be opened.

purified air® since 1984

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Item	Description	Model Number	Dimension WxHxD (mm)	Weight (KG)	Noise Level (dBA)	Duty	Electrical Data	Filters
EF1	Kitchen Extract Fan	MUB/T 100 630D4-K2-L	1020 x 1020 x 920	183	91	Max 5.2m³/s	400V/3ph/50Hz 5.0kW , 8.86A	
AHU1	Systemair Multibox Fan	MUB 062 630D4 Multibox	820 x 820 x 820	111	-	Max 4.246m³/s	400V/3ph/50Hz 4.5kW, 8.0A	
EHB1	Electric Heater Battery	N/A	N/A	N/A	N/A	18kw	18kW, 3PHS, 3STG	
EHB2	Electric Heater Battery	N/A	N/A	N/A	N/A	18kw	18kW, 3PHS, 3STG	
EF2	Systemair Circular Duct Fan	K 250 L	Ø336 (+40) x 145 Ø250 spigots	4.6	42.9 @ 3m	976m³/h	158W, 0.703A 230V/1ph/50Hz	
DC1	Thermoscreen Air Curtain C Range Exposed	C1000E NT	1137 x 198 x 275	18	N/A	4.5/9kW Output	400V/3ph/50Hz Loading: 13.7A per phase	
AC1	Toshiba Chassis SMMS-u Indoor Unit	MML-UP0241BH-E	1045 x 600 x 220	29	42	7.1kW Nominal Cooling	N/A	
AC2	Toshiba Chassis SMMS-u Indoor Unit	MML-UP0241BH-E	1045 x 600 x 220	29	42	7.1kW Nominal Cooling	N/A	
AC3	Toshiba Chassis SMMS-u Indoor Unit	MML-UP0241BH-E	1045 x 600 x 220	29	42	7.1kW Nominal Cooling	N/A	
AC4	Toshiba Chassis SMMS-u Indoor Unit	MML-UP0241BH-E	1045 x 600 x 220	29	42	7.1kW Nominal Cooling	N/A	
AC5	Toshiba Chassis SMMS-u Indoor Unit	MML-UP0241BH-E	1045 x 600 x 220	29	42	7.1kW Nominal Cooling	N/A	
CU1	Toshiba VRF SMMS-u Outdoor Condenser Unit	MMY-MUP1201HT8P-E	990 x 1690 x 780	228	58	33.5kW Nom. Cooling	380-415V3ph/50Hz Running Current: 16A	
UV1	Purified Air UV	UV-O 1000	1568 x 350 x 363	50	N/A	2.0m³/s	700W, 200-240V/1ph/50Hz	
UV2	Purified Air UV	UV-O 1000	1568 x 350 x 363	50	N/A	2.0m³/s	700W, 200-240V/1ph/50Hz	
CO1	CO Monitor	-	-	-	-	-	-	
CO2	CO² Monitor	-	-	-	-	-	-	

No.	Date	Rev. By	Revision Description
D	20/07/23	JJ	ESPs omitted
C	10/07/23	JJ	EBH updated
B	24/05/23	JJ	AC updated
A	18/05/23	JJ	Condensers updated

Client:

Blacklock

Project :

FREETRADE EXCHANGE,
27 PETER ST,
MANCHESTER,
M2 5GB

Drawing Title :

Equipment Schedule

Drawing No.:	Rev:
001-1056-ES	D

Scale: N/A

Drawn By: JJ	Checked By: -	Date: 17/03/23

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SafeContractor APPROVED

AC2 7kW AC Floor Unit
(Toshiba MML-UP0241BH-E)

AC1 7kW AC Floor Unit
(Toshiba MML-UP0241BH-E)

CO + CO² Monitors

Sirius Canopy 1

HVAC Control Panel

High Level Pipework To Ventilation Riser

2 No. Purified Air UV-1000 units

Gas Knock-off & Ansul Emergency Knock-off

Ansul fire suppression tanks

Dishwash Canopy 3

650x500 Supply air from roof above

700x400 Kitchen extract to roof above (Fire rated riser by others)

Sirius Canopy 2

7kW AC Floor Unit AC3
(Toshiba MML-UP0241BH-E)

Low Level Pipework Within Seating Area

18kW Electric Heater Battery EBH1

Ø250 Extract To Roof Above With Fan In Vertical (Systemair K 250 L Circular Duct Fan)

7kW AC Floor Unit AC4
(Toshiba MML-UP0241BH-E)

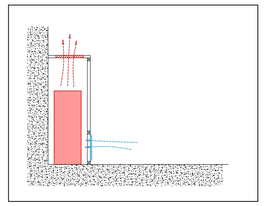
2 No. 600x100 Linear grills underside

Full length linear supply grills in bulkhead at high level

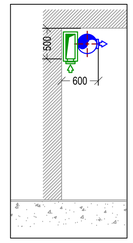
18kW Electric Heater Battery EBH2

7kW AC Floor Unit AC5
(Toshiba MML-UP0241BH-E)

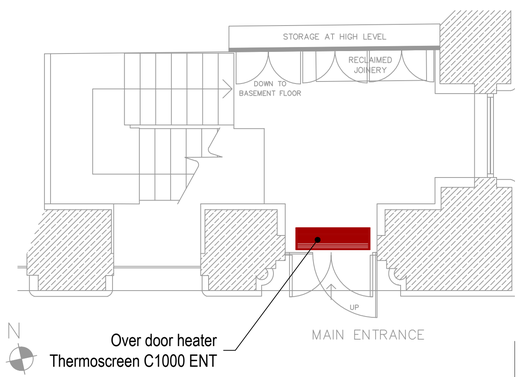
Over door heater
Thermoscreen C1000 ENT



NEW DUCTED CHASSIS TYPE AC UNIT WAITER STATION. LOW LEVEL FOR RETURN AIR TO BE 800 X 200.



A-A BAR AREA SECTION



0 1 2 3 4 5m

General notes:

1. Positions of all equipment, ductwork and fittings are indicative only.
2. Contractors shall confirm the sequence of installation works to ensure safe access is maintained.
3. Attention is drawn to health & Safety issues. Liaise with the main contractor to ensure that installation works are programmed to minimise H&S risks and optimise co-ordination.
4. All dimensions / duct sizes are in millimetres unless otherwise stated.
5. This drawing was produced using CAD and should not be amended by hand.
6. All dimensions shown are for reference and should be checked on site prior to commencement of work.

Specific notes:

1. This drawing should be read in conjunction with all architectural, structural and drawings from other services (incl. mechanical, catering, electrical, sprinklers), along with contract documentation and specification for the works.
2. Ensure all method statements, sign offs and approvals are in place before proceeding with any works.
3. All works to be carried out in accordance with the current British Standards, B.S. codes of practice and building regulations.
4. The HVAC services works shall be carried out in full accordance with the client specification and brief, together with any landlord technical guide and specification.
5. Ductwork shall be installed in accordance with all current industry standard guidelines / regulations.
6. Galvanised ductwork to be manufactured to DW144.
7. Ductwork sized in accordance with all current industry standard guidelines / regulations. Duct dimensions shown on drawing are clear internal dimensions (not including flanges and fixings).
8. Access doors required on kitchen extract duct every 1500mm for cleaning and before / after every change of direction & should be accessible at all locations via ceiling access panels or gridded ceiling etc. Access panels to be provided by main contractor in any solid ceilings where final requirements indicated by HVAC installation contractor.
9. Duct connections with fans and other equipment to be a manufactured canvas connection to prevent duct breakout noise and transmission of vibrations.
10. Volume control dampers shall be installed on all branch legs and diffuser / grille terminals to facilitate commissioning.
11. Supply and secondary fan coil unit ductwork to be fully insulated.
12. Fresh air intakes and exhausts locations are shown indicatively on these drawings. The exact positions shall be agreed with the client, architect and the main contractor and shall be shown accurately on the working / co-ordinated drawings.
13. Position of all grilles / air valves shown are in optimum positions for air flow. The grilles to be positioned as close as practicable to location shown and coordinated with other services and fabric constraints.
14. Fire dampers are to be shown on ductwork (excluding kitchen extract ducts) penetrating fire compartment divides and shall incorporate certified fire dampers to match the barrier rating, together with access panels. Reference to be made to architects' fire strategy drawing to establish locations. Fire dampers are shown indicatively on these drawings.
15. All transfer grilles and ductwork where fire rated, shall match the fire rating of the wall in which it is installed.
16. Attenuation and anti-vibration measures shall be incorporated on all plant and ductwork supports in full accordance with acoustic consultant's specification.
17. Access required to all plant equipment for maintenance and cleaning.
18. Refer to catering specialist layout to determine confirmed canopy sizes and location.
19. Condensate drain from AC condensers to be run to the nearest waste connection or to rooftop drain. Condensate drains from the FCU's to be run to the nearest drain (25mm), subject to manufacturer and their requirements. Both shall be the equivalent plastic or copper sizes.
20. Install all mechanical equipment in accordance with manufacturers guidelines.
21. Catering condensers are not CVL equipment. However, they are indicatively shown on CVL drawings to allow for provisioned space and access within the HVAC plant area.
22. Locations of all required floor, wall and roof openings shall be co-ordinated with all other trades involved.
23. No others load(s) (other services or man loading) shall be hung from ductwork supports.

No.	Date	Rev. By	Revision Description
G	13/07/23	JJ	AC locations updated.
F	10/07/23	JJ	Controls added. Notation updated.
E	30/06/23	PR	Revised GA layout.
D	15/06/23	JJ	Section added.
C	13/06/23	JJ	AC box moved, Ducts stacked.
B	08/06/23	JJ	GA updated
A	17/05/23	JJ	AC units updated

Client:

Blacklock

Project :

FREETRADE EXCHANGE,
27 PETER ST,
MANCHESTER,
M2 5GB

Drawing Title :

Proposed Lower Ground Floor HVAC Plan

Drawing No.:	Rev:
001-1056-01	G

Scale: 1:50 @ A1 1:100 @ A3

Drawn By: DPH	Checked By: -	Date: 18/03/23

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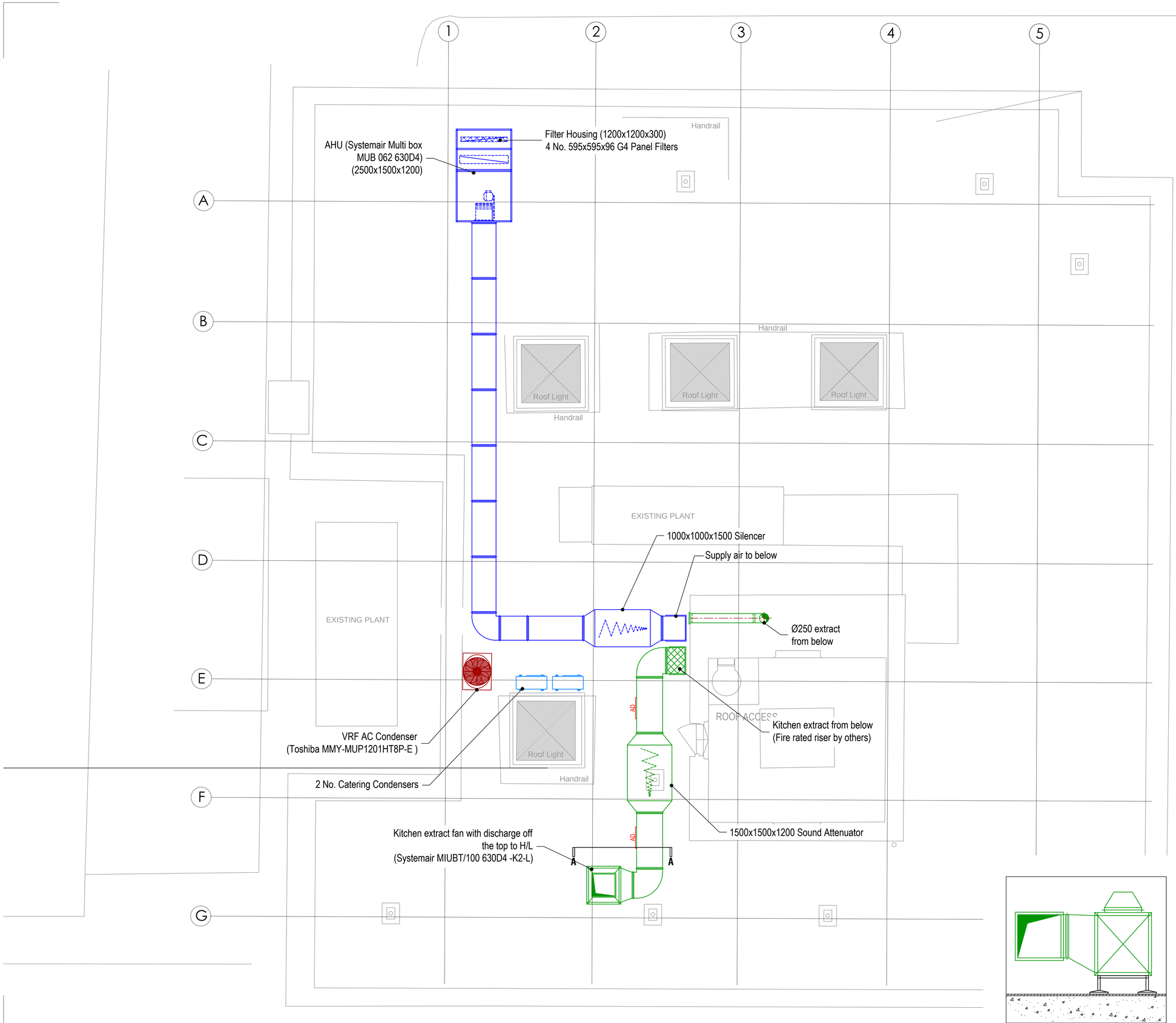

A-A Section

General notes:

1. Positions of all equipment, ductwork and fittings are indicative only.
2. Contractors shall confirm the sequence of installation works to ensure safe access is maintained.
3. Attention is drawn to health & Safety issues. Liaise with the main contractor to ensure that installation works are programmed to minimise H&S risks and optimise co-ordination.
4. All dimensions / duct sizes are in millimetres unless otherwise stated.
5. This drawing was produced using CAD and should not be amended by hand.
6. All dimensions shown are for reference and should be checked on site prior to commencement of work.

Specific notes:

1. This drawing should be read in conjunction with all architectural, structural and drawings from other services (incl. mechanical, catering, electrical, sprinklers), along with contract documentation and specification for the works.
2. Ensure all method statements, sign offs and approvals are in place before proceeding with any works.
3. All works to be carried out in accordance with the current British Standards, B.S. codes of practice and building regulations.
4. The HVAC services works shall be carried out in full accordance with the client specification and brief, together with any landlord technical guide and specification.
5. Ductwork shall be installed in accordance with all current industry standard guidelines / regulations.
6. Galvanised ductwork to be manufactured to DW/144.
7. Ductwork sized in accordance with all current industry standard guidelines / regulations. Duct dimensions shown on drawing are clear internal dimensions (not including flanges and fixings).
8. Access doors required on kitchen extract duct every 1500mm for cleaning and before / after every change of direction & should be accessible at all locations via ceiling access panels or gridded ceiling etc. Access panels to be provided by main contractor in any solid ceilings where final requirements indicated by HVAC installation contractor.
9. Duct connections with fans and other equipment to be a manufactured canvas connection to prevent duct breakout noise and transmission of vibrations.
10. Volume control dampers shall be installed on all branch legs and diffuser / grille terminals to facilitate commissioning.
11. Supply and secondary fan coil unit ductwork to be fully insulated.
12. Fresh air intakes and exhausts locations are shown indicatively on these drawings. The exact positions shall be agreed with the client, architect and the main contractor and shall be shown accurately on the working / co-ordinated drawings.
13. Position of all grilles / air valves shown are in optimum positions for air flow. The grilles to be positioned as close as practicable to location shown and coordinated with other services and fabric constraints.
14. Fire dampers are to be shown on ductwork (excluding kitchen extract ducts) penetrating fire compartment divides and shall incorporate certified fire dampers to match the barrier rating, together with access panels. Reference to be made to architects' fire strategy drawing to establish locations. Fire dampers are shown indicatively on these drawings.
15. All transfer grilles and ductwork where fire rated, shall match the fire rating of the wall in which it is installed.
16. Attenuation and anti-vibration measures shall be incorporated on all plant and ductwork supports in full accordance with acoustic consultant's specification.
17. Access required to all plant equipment for maintenance and cleaning.
18. Refer to catering specialist layout to determine confirmed canopy sizes and location.
19. Condensate drain from AC condensers to be run to the nearest waste connection or to rooftop drain. Condensate drains from the FCU's to be run to the nearest drain (25mm), subject to manufacturer and their requirements. Both shall be the equivalent plastic or copper sizes.
20. Install all mechanical equipment in accordance with manufacturers guidelines.
21. Catering condensers are not CVL equipment. However, they are indicatively shown on CVL drawings to allow for provisioned space and access within the HVAC plant area.
22. Locations of all required floor, wall and roof openings shall be co-ordinated with all other trades involved.
23. No others load(s) (other services or man loading) shall be hung from ductwork supports.

METERAGE

SUPPLY DUCTWORK	0.0m
WC EXTRACT DUCTWORK	0.0m
AC PIPEWORK	0.0m

Quantities are for this sheet only

No.	Date	Rev. By	Revision Description
E	20/07/23	JJ	ESPs omitted
D	14/07/23	JJ	Catering condensers added
C	10/07/23	JJ	Section added
B	15/06/23	JJ	Plant equipment relocated
A	18/05/23	JJ	Condensers updated

Client:

Blacklock

Project :

FREETRADE EXCHANGE,
27 PETER ST,
MANCHESTER,
M2 5GB

Drawing Title :

Proposed Roof HVAC Plan

Drawing No.:	Rev:
001-1056-02	E

Scale: 1:50 @ A1 1:100 @ A3

Drawn By: DPH	Checked By: -	Date: 18/03/23

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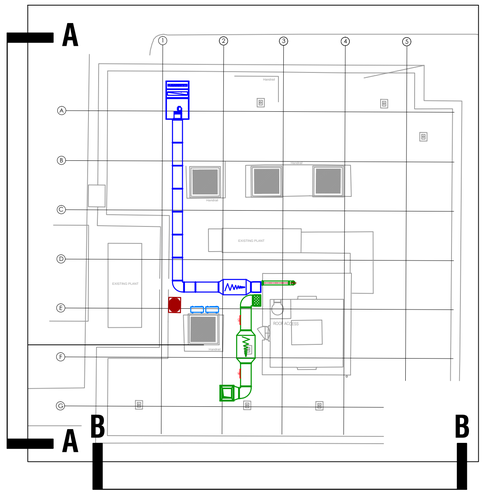

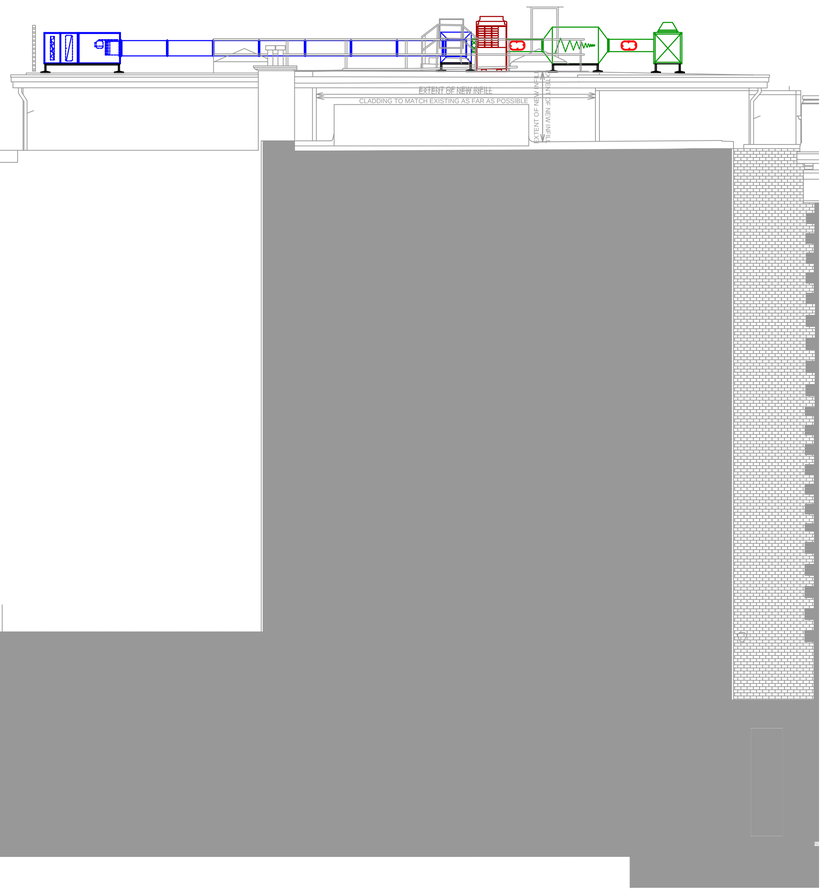

A-A ELEVATION

B-B ELEVATION

General notes:

1. Positions of all equipment, ductwork and fittings are indicative only.
2. Contractors shall confirm the sequence of installation works to ensure safe access is maintained.
3. Attention is drawn to health & Safety issues. Liaise with the main contractor to ensure that installation works are programmed to minimise H&S risks and optimise co-ordination.
4. All dimensions / duct sizes are in millimetres unless otherwise stated.
5. This drawing was produced using CAD and should not be amended by hand.
6. All dimensions shown are for reference and should be checked on site prior to commencement of work.

Specific notes:

1. This drawing should be read in conjunction with all architectural, structural and drawings from other services (incl. mechanical, catering, electrical, sprinklers), along with contract documentation and specification for the works.
2. Ensure all method statements, sign offs and approvals are in place before proceeding with any works.
3. All works to be carried out in accordance with the current British Standards, B.S. codes of practice and building regulations.
4. The HVAC services works shall be carried out in full accordance with the client specification and brief, together with any landlord technical guide and specification.
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6. Galvanised ductwork to be manufactured to DW/144.
7. Ductwork sized in accordance with all current industry standard guidelines / regulations. Duct dimensions shown on drawing are clear internal dimensions (not including flanges and fixings).
8. Access doors required on kitchen extract duct every 1500mm for cleaning and before / after every change of direction & should be accessible at all locations via ceiling access panels or gridded ceiling etc. Access panels to be provided by main contractor in any solid ceilings where final requirements indicated by HVAC installation contractor.
9. Duct connections with fans and other equipment to be a manufactured canvas connection to prevent duct breakout noise and transmission of vibrations.
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22. Locations of all required floor, wall and roof openings shall be co-ordinated with all other trades involved.
23. No others load(s) (other services or man loading) shall be hung from ductwork supports.

METERAGE

SUPPLY DUCTWORK	0.0m
WC EXTRACT DUCTWORK	0.0m
AC PIPEWORK	0.0m

Quantities are for this sheet only

No.	Date	Rev. By	Revision Description
A	20/07/23	JJ	ESPs omitted

Client:

Blacklock

Project :

FREETRADE EXCHANGE,
27 PETER ST,
MANCHESTER,
M2 5GB

Drawing Title :

Proposed Roof West & South Elevations

Drawing No.:	Rev:
001-1056-03	A

Scale: 1:50 @ A1 1:100 @ A3

Drawn By: JJ	Checked By: -	Date: 14/07/23

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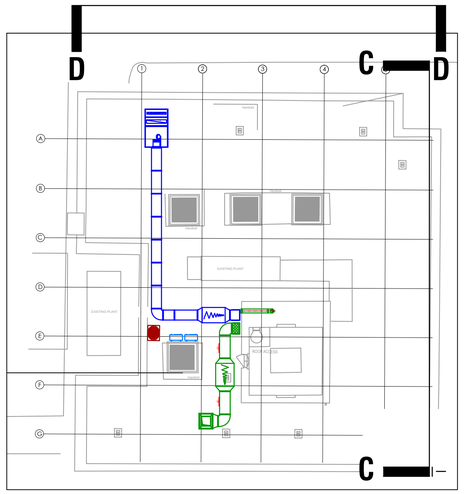

C-C ELEVATION

D-D ELEVATION

General notes:

1. Positions of all equipment, ductwork and fittings are indicative only.
2. Contractors shall confirm the sequence of installation works to ensure safe access is maintained.
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5. This drawing was produced using CAD and should not be amended by hand.
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METERAGE

SUPPLY DUCTWORK	0.0m
WC EXTRACT DUCTWORK	0.0m
AC PIPEWORK	0.0m

Quantities are for this sheet only

No.	Date	Rev. By	Revision Description
A	20/07/23	JJ	ESPs omitted

Client:

Blacklock

Project :

FREETRADE EXCHANGE,
27 PETER ST,
MANCHESTER,
M2 5GB

Drawing Title :

Proposed Roof East & North Elevations

Drawing No.:	Rev:
001-1056-04	A

Scale: 1:50 @ A1 1:100 @ A3

Drawn By: JJ	Checked By: -	Date: 17/07/23

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