

PROJECT	The Factory, Manchester	ISSUE DATE	09.06.2023
PROJECT NUMBER	P2008093	ISSUED BY	AM
REFERENCE	MF-BDP-XX-XX-DN-MX-11-0096	APPROVED BY	SM
REVISION	C02	PURPOSE OF ISSUE	S2

SUBJECT **DN96 – KITCHEN EXTRACT NOTES**

INTRODUCTION

The kitchen extract installation in arch 3 of Factory is subject to planning condition 12.

12	Should kitchens be installed, fumes, vapours and odours shall be extracted and discharged from the premises in accordance with a scheme to be submitted for each unit and approved in writing by the City Council as local planning authority before the use commences. Any works approved shall be implemented before the use commences and shall be retained thereafter. Mixed use schemes shall ensure provision for internal ducting in risers that terminate at roof level. Schemes that are outside the scope of such developments shall ensure that flues terminate at least 1m above the eave level and/or any openable windows/ventilation intakes of nearby properties.
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The kitchen has always been a proposition for the fit out so full details have not been previously available.

There is now a catering team on board and the fit out is progressing so the information that is required to discharge this planning condition is believed to be complete.

SITUATION

The kitchen is situated in arch 3 of Factory and as part of the base build the extract from the kitchen was routed internally up to the main roof in fire rated ductwork so as not to present a nuisance to the adjacent bonded warehouse.

The base build scheme also provided for ducted make-up air to the kitchen via the adjacent buffer storage in accordance with BESA design standard DW172.

Details of the ductwork and fan selection form part of the BDP and CHt scheduled and drawn information.

The food offering and internal planning of the kitchen, together with the treatment of the exhaust have been provided as part of the fit-out package.

Final development of the base build roof ducting has now taken place to locate the discharge of the kitchen extract in a westerly direction over the main warehouse roof.

The items below are pieces of information that have been drawn together to assist in the discussions with respect to the discharge of the kitchen extract ventilation planning condition.

The information is collected from various parties and requires to be supplemented by the service and maintenance details for the installation.

- MF-BDP-ZZ-ZZ-SH-M-68-0039 Kitchen extract fan schedule
- MF-CHT-WH-GF-DR-M-57-0000 Warehouse Ground Floor Ventilation Layout (Sheet 1 of 4)
- MF-CHT-WH-XX-DR-M-50-0202 Coordinated MEP Services Opera XL to Buffer Room Riser
- MF-CHT-WH-L3-DR-M-50-0700 Warehouse Third Floor Plantdeck Multi-Service Layout Sheet 1 of 2
- MF-CHT-WH-XX-DR-M-50-0201 Warehouse Tower Riser Mech 02 (Sheet 2 of 2)
- kitchen duct to roof (a collage of the information presented in the above CHT drawings)
- Kitchen exhaust at roof level 7.5 – Ventorex Ductwork drawing
- Purified Air Electrostatic Precipitator Filter unit Brochure
- Purified Air UV-O range of ultraviolet ozone injection modules
- Caice - Kitchen extract attenuator schedule (redacted to chosen selection)
- Kitchen extract schematic

We also understand that a typical food offering has been planned for the kitchen as below: -

- Foyer Food- Fac V1

And Factory international have provided the following statement on the service and maintenance: -

- Kitchen Extraction Maintenance Planning Condition Response 8Jun23

The above schedules, drawings, sketches and equipment details are appended to this note.

CONCLUSION

The kitchen extract system has been designed in accordance with DW 172 and CIBSE guide B and installed to ensure that fumes, vapours and odours are extracted and discharged from the premises in accordance with the requirements of the planning condition 12.

The ventilation system design is based on the installation of a high-quality specialist canopy to extract above the cooking equipment.

The canopy will be fitted with a fire suppression system and shall have integral baffle filters, the duct from the canopy shall have UV ozone injection modules installed within the kitchen space to provide odour suppression.

A 100% mechanical make-up air system is provided as part of the base build in compliance with DW 172.

The exhaust from the kitchen passes through the fire compartment line and in accordance with DW 172 approved document B the duct is fire rated from this point to the point where it passes out onto the roof of the building.

Access for cleaning is provided at each level and along the length of the duct as required in DW144 and DW 172.

The exhaust equipment on the roof comprises ESP units to control any carry over of fume and grease before the airflow enters the extract fan and is discharged to the roof. Noise attenuation is provided with silencers before and after the bifurcated kitchen extract fan.

Level Acoustics have reviewed the system and recommended the performance requirements of the silencers in order that this complies with the agreed external noise criteria and the internal noise level limits set for the kitchen.

Roof plant is accessible through the permanent stair ways, walkways and access equipment that is provided to the main roof and the tower roof.

P2008093 - Factory

Title Kitchen Extract Fan Schedule

Doc No: MF-BDP-ZZ-ZZ-SH-M-68-0039
Issue: Contract Issue
Rev: C06
Produced by: AM
Published Date: 05.12.2022



[illegible]

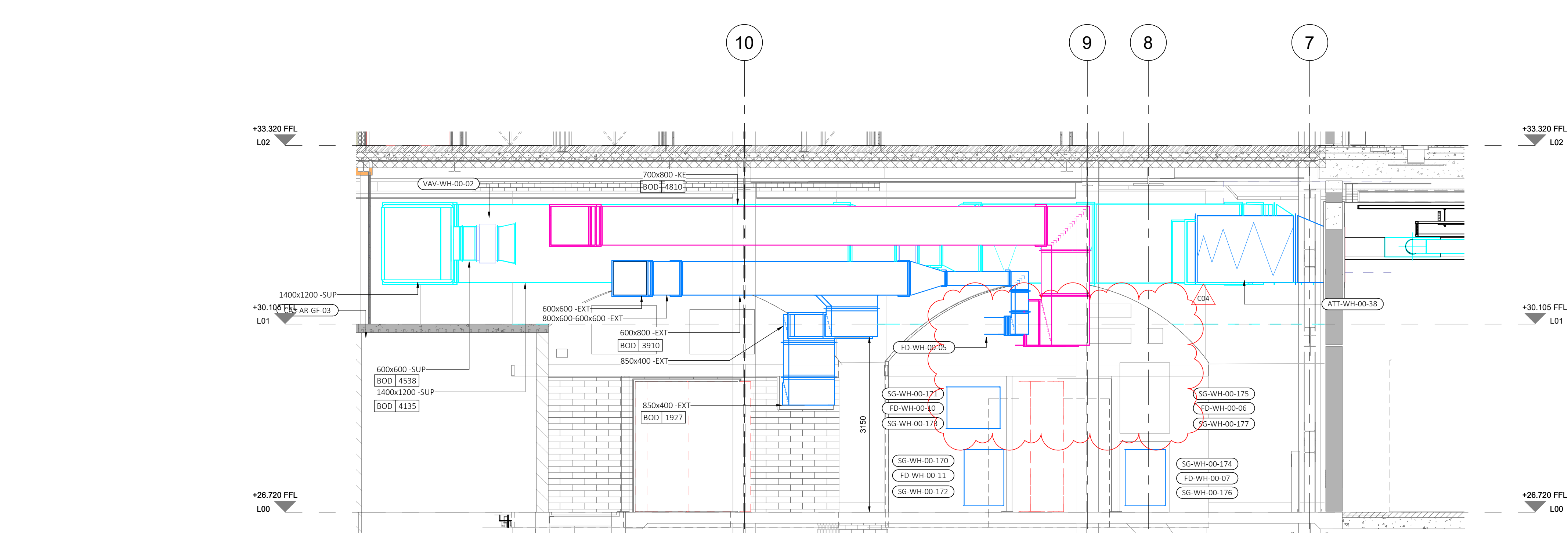
EQUIPMENT SCHEDULE

Project title	Factory	Schedule title	Kitchen Extract Fan Schedule	Date	05.12.2022
Project no	P2008093	Schedule ref	MF-BDP-ZZ-ZZ-SH-M-68-0039	Revision	C06

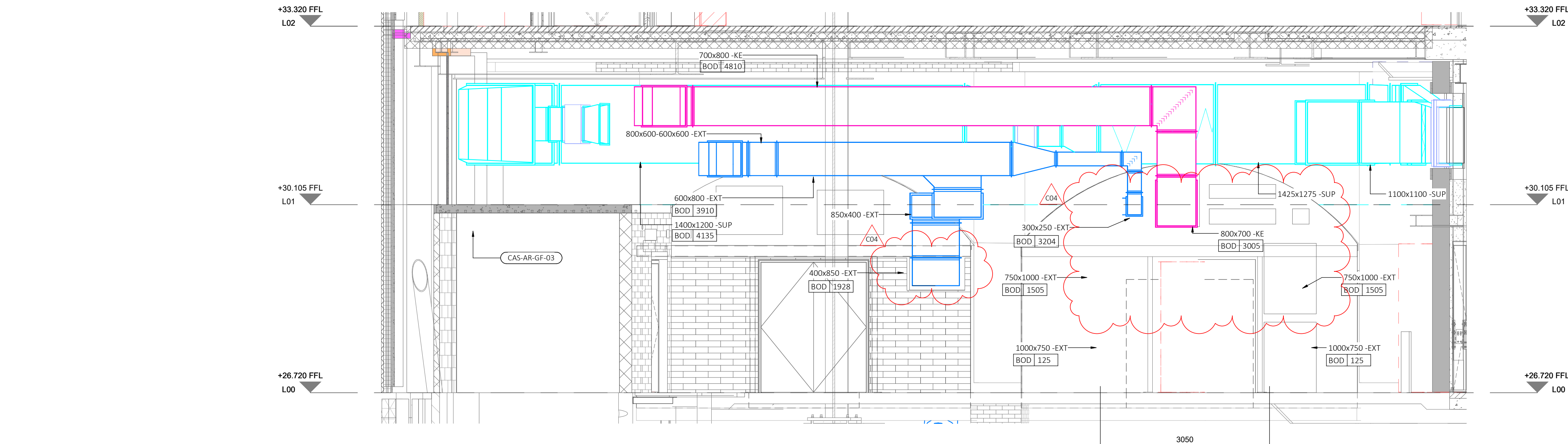
Equipment Details

Manufactured to meet the requirements of the performance data below based on Elta fans or equal:

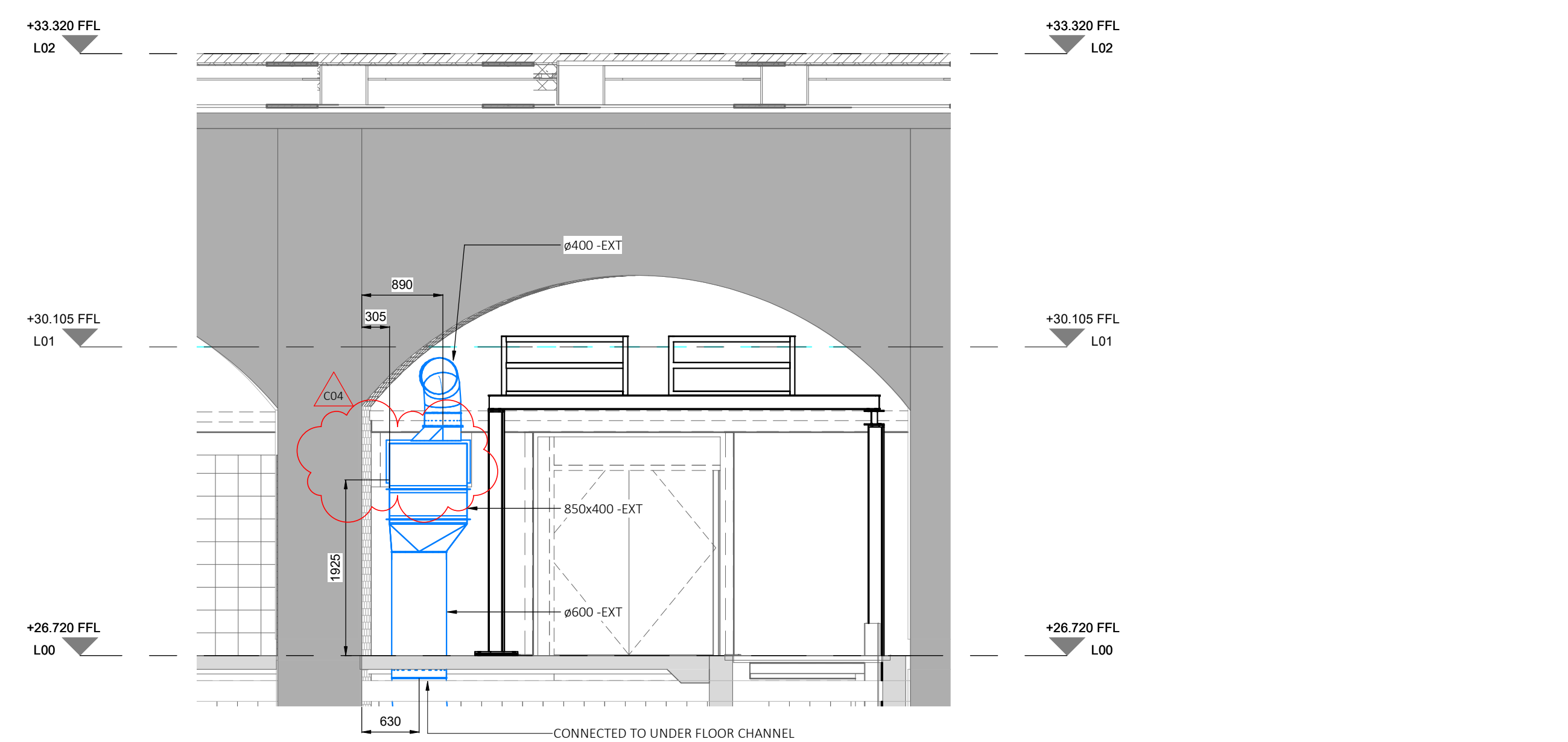
Fan Ref	KEF-WH-08-01	KEF-WH-03-02	Removed for Contract Issue	Removed for Contract Issue	Removed for Contract Issue
General Requirements					
Number off	1	1			
System	kitchen extract	Green room			
Model		SCC250-1EC			
Location	Level 1	Level 3			
Type	Axial - bifurcated	duct mounted centrifugal			
Drive Type	Direct	Direct			
Single or Twin	Single	Single			
Mounting Arrangement	Internal	External			
Special Requirements					
Fluid	N/A	N/A			
Temperature Rating	N/A	60 deg C			
ATEX	N/A	N/A			
Components and Construction					
Fan Casing	Galv mild steel	corrosion protected mild steel			
Finish	Painted	Powder coated polyester epoxy paint			
Impellers	Cast Aluminium	dynamically balanced to ISO 14694 Grade G6.3			
Shafts					
Performance					
Standards	BS 848	BS EN 10142			
Operating Temperature	-10 to +100	-10 to + 60			
Design Flow Rate (m³/s)	4 (to be confirmed by catering specialist)	0.12			
Design Differential Pressure (Pa)	300 (Provisional)	200			
Speed					
Specific Fan Power (w/l/s)	N/A	0.66			
Noise Level (inlet) (dBA @ 3m)	Manufacturer to confirm	44			
Noise Level (outlet) (dBA @ 3m)	N/A	44			
Motors					
Type	TEFC 3 Ph squirrel cage induction motor	EC motor			
Protection	IP55	IP54C			
Mounting Arrangement	External	External			
Efficiency Class	IE3	IE3			
Bearings	Maintenance free	Maintenance free			
Motor finish	Epoxy coated	Epoxy coated			
Electrical Supply	400v/3Ph	230v/1Ph			
No of speeds	Variable	Variable			
Method of start	Frequency Inverter	soft start			
Method of control	Variable Speed	electronic speed control			
Motor rating (kW)	TBC	0.17			
Full load current/Starting Current (A)	TBC	1.5/-			
Thermistors	No	No			
Accessories					
Mounting Feet	Yes	Yes			
Anti-Vibration Mounts	Yes	Yes			
Flexible connections	Yes	Yes			
Fan / Drive Guard	Yes	Yes			
Inlet Cone					
Terminal Box	Yes	Yes			
Anti-Stall Sensor					
Silencers	Not Required	Required			
Speed Controller	Inverter Drive	speed selector			
Other					



WH L00-57 Mech Vent Section A
1 : 50



WH L00-57 Mech Vent Section B
1 : 50



WH L00-57 Mech Vent Section C
1 : 50

BOP SERVICE LAYOUTS USED

MF-BOP-WH-GF-DR-E-70-0001	Warehouse Ground Floor Electricity Distribution and Transmission Systems_Ver1.1	C08
MF-BOP-WH-GF-DR-E-70-0001	Warehouse Ground Floor Small Power Systems_Ver1.2	C07
MF-BOP-WH-GF-DR-M-60-0001	Warehouse Ground Floor Heating and Refrigerant Systems_Ver6	C03
MF-BOP-WH-GF-DR-M-65-0001	Warehouse Ground Floor Ventilation and Air Conditioning Systems_Ver15	C07
MF-BOP-WH-GF-DR-MX-40-4001	Warehouse Ground Floor BWC_Ver8	C03
MF-BOP-WH-GF-DR-P-50-0001	Warehouse Ground Floor Disposal Systems_Ver8	C04
MF-BOP-WH-GF-DR-P-50-0002	Warehouse Ground Floor Sprinkler Drainage_Ver3	C03
MF-BOP-WH-GF-DR-P-55-0001	Warehouse Ground Floor Piped Supply Systems_Ver9	C04

BOP SCHEMATIC DRAWINGS USED

MF-BOP-WH-XX-DR-M-60-0101	Warehouse Schematic Cooling Systems	C09
MF-BOP-WH-XX-DR-M-60-0101	Theatre Schematic Cooling Systems	C16
MF-BOP-WH-XX-DR-M-65-0101	Warehouse Schematic Heating Systems_1 of 3	C13
MF-BOP-WH-XX-DR-M-60-0103	Warehouse Schematic Heating Systems_2 of 2	C13
MF-BOP-WH-XX-DR-M-65-0101	Warehouse Schematic Ventilation and Air Conditioning Systems	C15
MF-BOP-WH-XX-DR-M-65-0102	Warehouse Schematic Ventilation and Air Conditioning Systems	C13
MF-BOP-WH-XX-DR-M-65-0103	Warehouse Schematic Ventilation and Air Conditioning Systems	C13
MF-BOP-WH-XX-DR-MX-41-0101	Theatre and Warehouse Schematic Energy Metering Strategy	T02
MF-BOP-22-XX-DR-M-65-0101	Theatre & Warehouse Smoke Extract Schematic sheet 1 of 2	C11
MF-BOP-22-XX-DR-M-65-0102	Theatre & Warehouse Smoke Extract Schematic sheet 2 of 2	C10

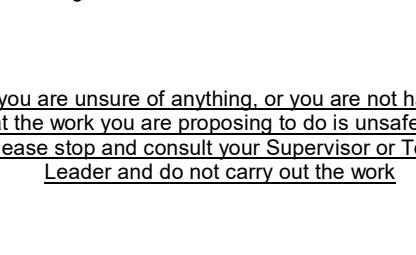
DYNAMIC RISK ASSESSMENT

Is it Fit for purpose, appropriate for task, in good condition

HOUSEKEEPING
Before you start in your area? Clean and tidy, free from trip hazards, with all waste in appropriate bins, has a safe route for 110V trailing leads. Before you finish ensure your area has no hazards for the next shift

TOOLS & EQUIPMENT
Are they? In good working order, PAT tested, correct for task

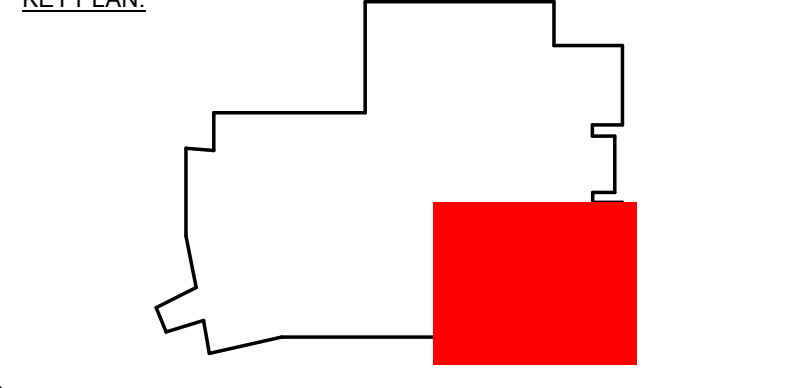
WORK
Do you? Understand your scope of works, have the required skills to carry out tasks, have a Method Statement and Risk Assessment to cover tasks, need to require a Permit to Work, have any abnormal lifts at the work you are proposing to do is unsafe then, Release tips and control your Supervisors or Team Leader and do not carry out the work



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CONSULTANT ARCHITECTURE : MF-BOP-XX-XX-M3-MK-00-0001 MF-RYD-XX-XX-M3-A-00-0001 MF-BHE-XX-XX-M3-S-00-0002

KEY PLAN:

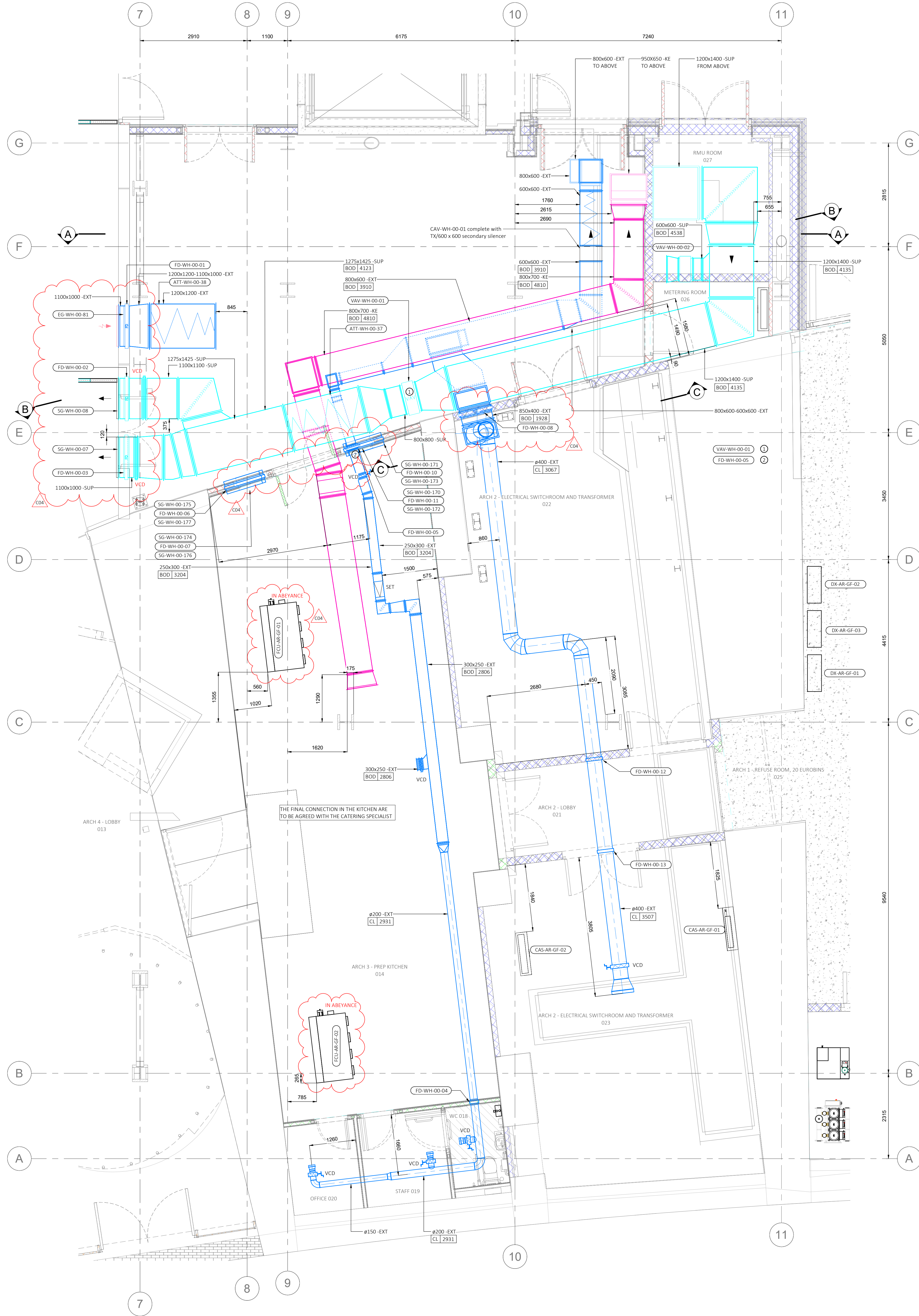


LEGEND

SE S TS FS DE FE TE MAKE UP AIR COMMON EX EXHAUST F08 F09 F01 F02 F03 F04 F05 F06 F07 F08 F09 F01 F02 F03 F04 F05 F06 F07	SMOKE EXTRACT GENERAL EXTRACT GENERAL SUPPLY TOILET SUPPLY FRESH AIR DIRTY EXTRACT FUME EXTRACT TOILET EXTRACT MAKE UP AIR COMMON EXHAUST EXHAUST DUCT ELEVATION BELOW SOFFIT DUCT ELEVATION ABOVE FFL BOTTOM OF DUCT CENTER LINE OF DUCT TO ABOVE TO BELOW FROM ABOVE FROM BELOW	EO SD DEG VCD PSD CVD AP FD F08 F09 F01 F02 F03 F04 F05 F06 F07	-EXTRACT GRILLE SUPPLY DIFFUSER DIRTY EXTRACT GRILLE VOLUME CONTROL DAMPER SINGLE BLADE DAMPER FIRE SMOKE DAMPER CONSTANT VOLUME DAMPER ACCESS PANEL FIRE DAMPER -FLAT ON BACK -FLAT ON FRONT -FLAT ON LEFT -FLAT ON RIGHT	30 MINUTES FIRE RATED WALL 60 MINUTES FIRE RATED WALL 90 MINUTES FIRE RATED WALL 120 MINUTES FIRE RATED WALL
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NOTES

- ALL DIMENSIONS SHALL BE CHECKED ON SITE.
- DO NOT SCALE FROM THIS DRAWING.
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH MECHANICAL EQUIPMENT (ATTENUATOR, DAMPER, VAV/AV, FLOW EXHAUST AIR TERMINAL) SCHEDULES, VENTILATION SCHEMATICS, LAYOUTS AND MECHANICAL SPECIFICATION.
- FOR THE SPECIFICATION OF ACOUSTIC TREATMENT IN RELATION TO THE VENTILATION SYSTEM, PLEASE SEE LEVEL ACOUSTICS REPORT: MF-LEV-XX-XX-RP-XA-01-016.
- ALL BELLMOUTHS FOR VENTILATION PURPOSES REQUIRE 800MM MIN NO COARSER THAN 12MM, AS INDICATED WITHIN THE MECHANICAL SPECIFICATION.
- FIRE COLLARS SHALL BE FITTED ON ALL PIPEWORK & FLUE PENETRATIONS THROUGH FLOORS AND FIRE COMPARTMENT WALLS.
- DUCTWORK TO BE THERMALLY INSULATED AS INDICATED WITHIN THE MECHANICAL SPECIFICATION.
- VOLUME CONTROL DAMPERS SHALL BE PROVIDED ON ALL MAIN BRANCHES AND ALL FINAL CONNECTIONS TO GRILLES.
- SMOKE AND/OR FIRE DAMPERS TO BE PROVIDED WHERE DUCTS PASS THROUGH CAVITY BARRIERS FIRE COMPARTMENTATION AS INDICATED ON SCHEMATICS AND LAYOUTS.
- THESE COORDINATED WORKING DRAWINGS ARE PRODUCED ON THE BASIS OF FINAL SETTING-OUT OF THE GRILLES WHICH SHALL BE PRESENTED ON THE ARCHITECT'S REFLECTED CEILING PLAN.
- ALL FINAL FLEXIBLE CONNECTIONS TO GRILLES TO BE NO MORE THAN 300mm LONG.



S4 FOR CONSTRUCTION APPROVAL

THE FACTORY MANCHESTER MANCHESTER CITY COUNCIL

Warehouse Ground Floor Ventilation Layout (Sheet 1 of 4)

Project: N3844
Original Drawing Size: A0

Coordinated: GR
Detailed: GR
Checked: DAC
Approved: JB
Date: 22/05/20

Drawing Number: MF-CHT-WH-GF-DR-M-57-0000

Rev: C04

Client: Heer Botelweg 149, 3032 AD Rotterdam, Netherlands

Consulting Engineer: BDP

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Architect: OMA

11 Ducie Street, M1 2JB Manchester, T: +44 (0) 161 628 2200

DYNAMIC RISK ASSESSMENT

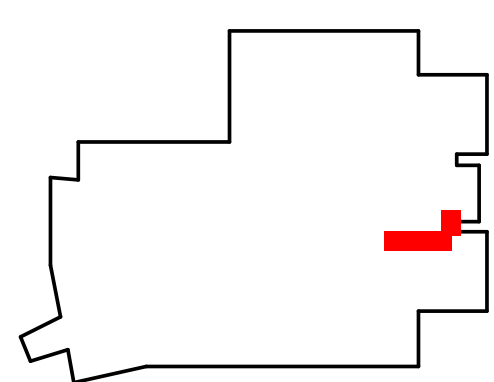
PPE
Is it PPE for purpose, appropriate for task, in good condition

HOUSEKEEPING
Before you start in your area? Clean and tidy, free from trip hazards, with all waste in appropriate bins, has a safe route for 110V trailing leads.
Before you finish ensure your area has no hazards for the next shift

TOOLS & EQUIPMENT
Are they? In good working order, PAT tested, correct for task

WORK
Do you? Understand your scope of works, have the required skills to carry out tasks, have a Method Statement and Risk Assessment to cover tasks, need to work at height - if so - you will require a Permit to Work, have any abnormal lifts or movements - if so - is there a Lifting Plan.
If you are unsure of anything, or you are not happy that the work you are proposing to do is unsafe then please stop and consult your Supervisor or Team Leader and do not carry out the work.

Site Plan



CONSULTANT : MF-BDP-XX-XX-M3-MX-00-0001
ARCHITECTURE : MF-RYD-XX-XX-M3-A-00-0001
STRUCTURAL : MF-BHE-XX-XX-M3-S-00-0002

LEGEND

- [+99] -DUCT ELEVATION BELOW SOFFIT
[-99] -DUCT ELEVATION ABOVE FFL
- BOD -BOTTOM OF DUCT
CL -CL OF DUCT
TA -TO ABOVE
TB -TO BELOW
FA -FROM ABOVE
FB -FROM BELOW
- EG -EXTRACT GRILLE
SD -SUPPLY DIFFUSER
DEG -DIRTY EXTRACT GRILLE
VCD -VOLUME CONTROL DAMPER
SBD -SINGLE BLADE DAMPER
FSD -FIRE SMOKE DAMPER
CVD -CONSTANT VOLUME DAMPER
AP -ACCESS PANEL

NOTES

- ALL DIMENSIONS SHOULD BE CHECKED ON SITE.
- DO NOT SCALE FROM THIS DRAWING.
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH MECHANICAL EQUIPMENT (ATTENUATOR, DAMPER, VAV/CAV, FCU, DX UNITS, AIR TERMINAL) SCHEDULES, VENTILATION SCHEMATICS, LAYOUTS AND MECHANICAL SPECIFICATION.
- FOR THE SPECIFICATION OF ACOUSTIC TREATMENT IN RELATION TO THE VENTILATION SYSTEM, PLEASE SEE LEVEL ACOUSTICS REPORT: MF-LEV-XX-XX-RP-VA-01-016.
- ALL BELLMOUTHS FOR VENTILATION PURPOSES REQUIRE BIRD MESH NO COARSER THAN 12MM, AS INDICATED WITHIN THE MECHANICAL SPECIFICATION.
- FIRE COLLARS SHALL BE FITTED ON ALL PIPEWORK & FLUE PENETRATIONS THROUGH FLOORS AND FIRE COMPARTMENT WALLS.
- DUCTWORK TO BE THERMALLY INSULATED AS INDICATED WITHIN THE MECHANICAL SPECIFICATION.
- VOLUME CONTROL DAMPERS SHALL BE PROVIDED ON ALL MAIN BRANCHES AND ALL FINAL CONNECTIONS TO GRILLES.
- SMOKE AND/OR FIRE DAMPERS TO BE PROVIDED WHERE DUCTS PASS THROUGH CAVITY BARRIERS/ FIRE COMPARTMENTATION AS INDICATED ON SCHEMATICS AND LAYOUTS.
- THESE COORDINATED WORKING DRAWINGS ARE PRODUCED ON THE BASIS OF FINAL SETTING-OUT OF THE GRILLES WHICH SHALL BE PRESENTED ON THE ARCHITECTS' SELECTED CEILING PLAN.
- ALL FINAL FLEXIBLE CONNECTIONS TO GRILLES TO BE NO MORE THAN 500mm LONG.
- ALL DUCTWORK IS TO BE DESIGNED TO DN144 AND TO DN172 FOR THE KITCHEN SYSTEMS.
- ALLOW FOR ALL FIRE DAMPERS IN FLOOR SLABS AND FIRE-RATED WALLS. SEE SCHEMATIC FOR DAMPERS ETC.

C01	17/08/22	ISSUED FOR CONSTRUCTION	DAC	RJD
P01	06/07/22	ISSUED FOR EXTERNAL APPROVAL	DAC	RJD
Rev	Date	Revision	CHK	Drm

Status

S4 FOR CONSTRUCTION APPROVAL

Project

THE FACTORY

Drawing Title

MANCHESTER

**Coordinated MEP Services
Opera XL to Buffer Room Riser**



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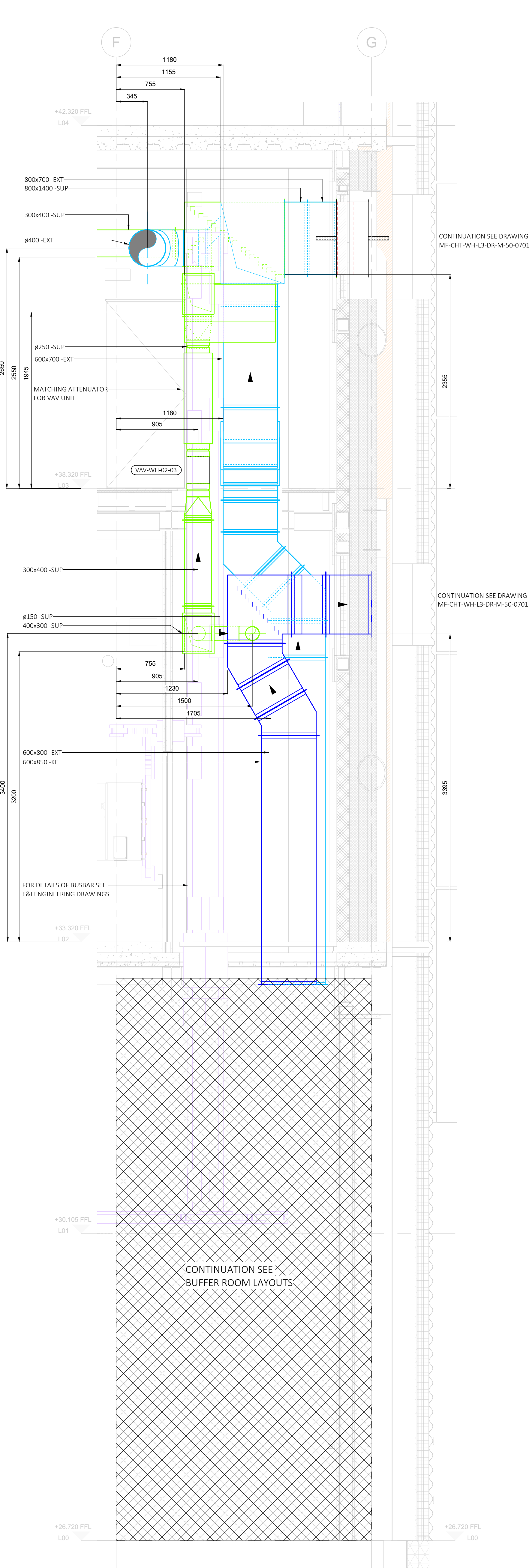
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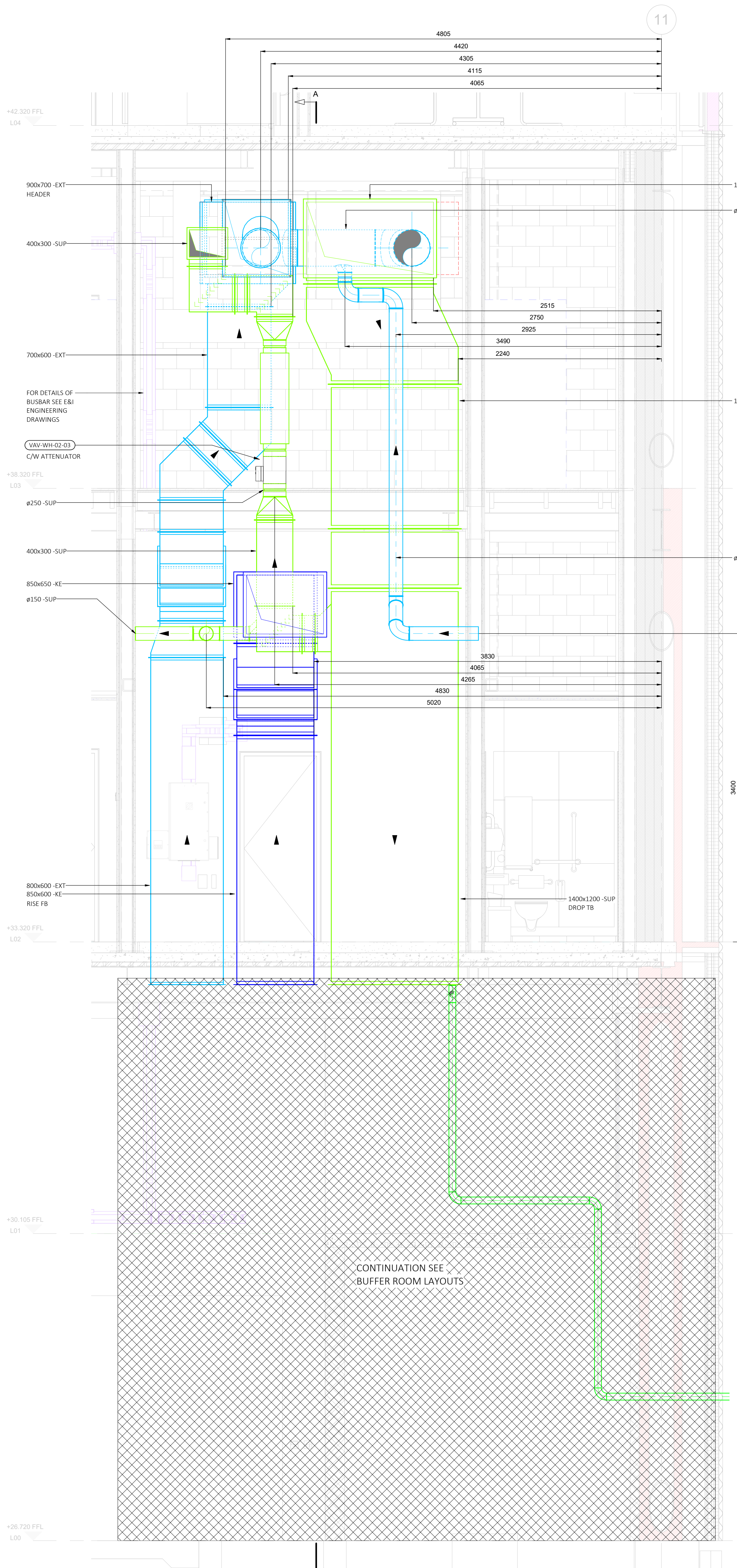
LANG GROUP

Project:	N3844	Coordinated:	RJD
Scale:	1: 25	Detailed:	RJD
Original Drawing Size:	A0	Checked:	DAC
		Approved:	JBF
		Date:	06/07/22

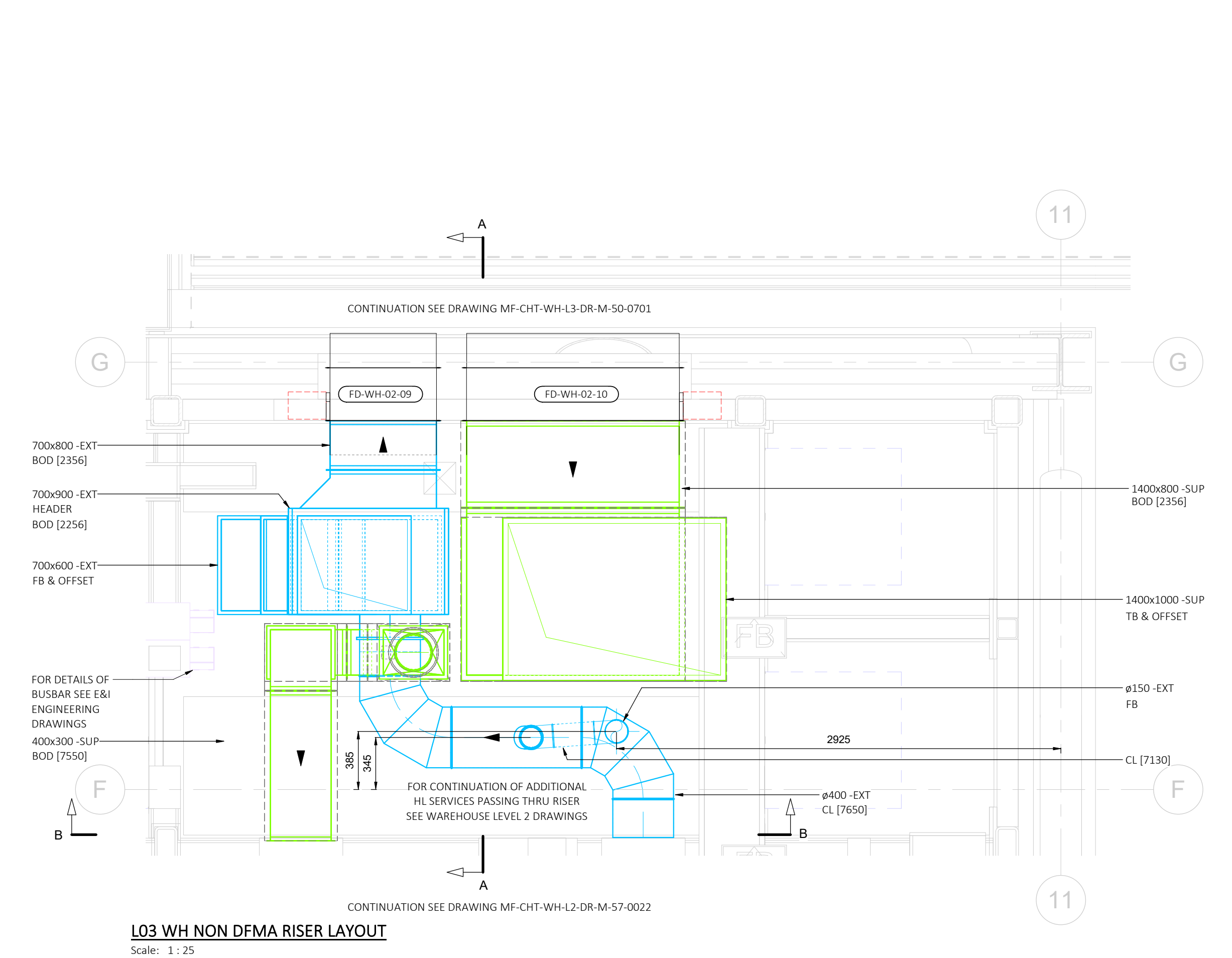
Drawing Number:	Rev:
MF-CHT-WH-XX-DR-M-50-0202	C01



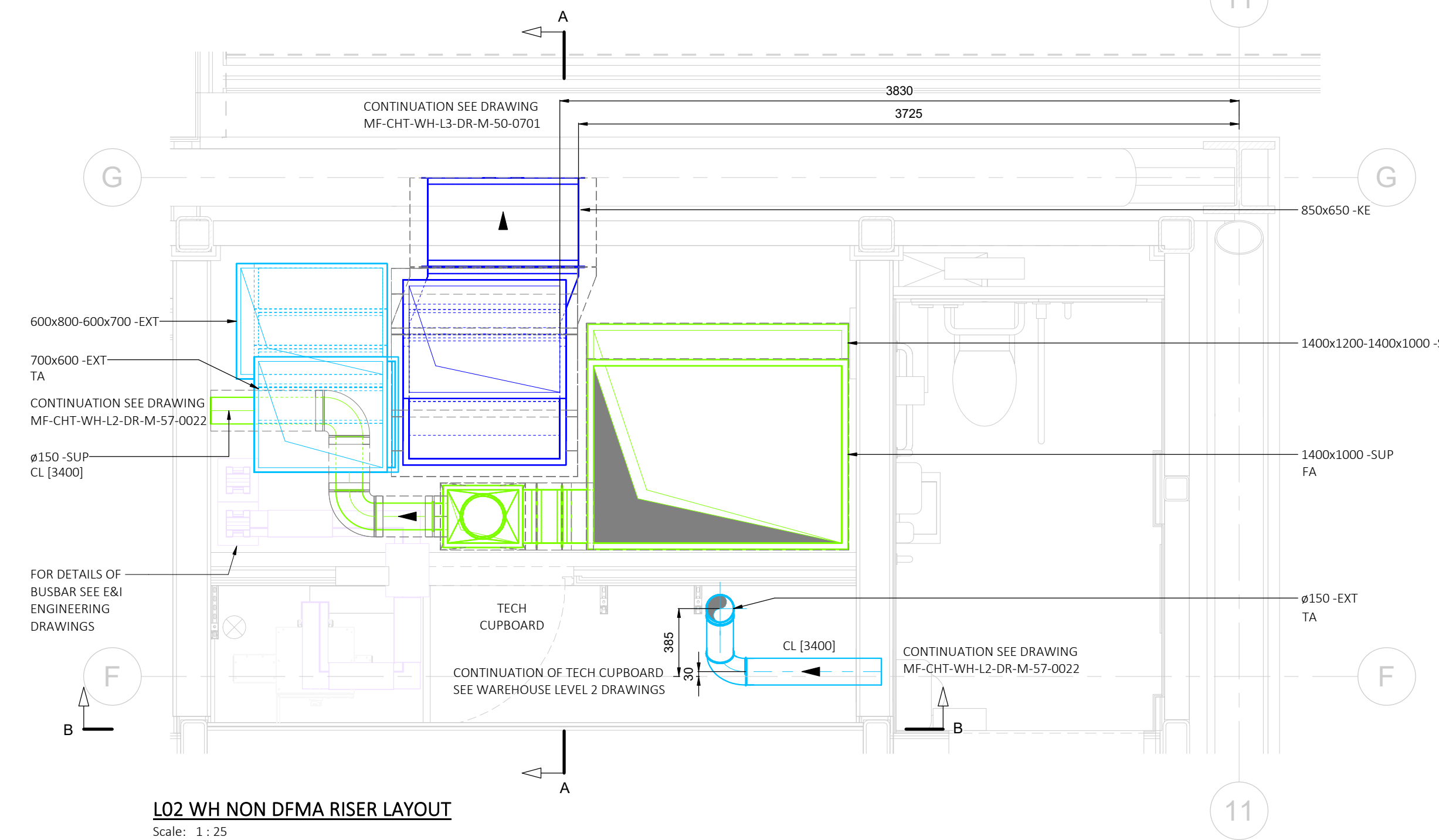
NON DFMA RISER SECTION A-A
Scale: 1: 25



NON DFMA RISER SECTION B-B
Scale: 1: 25

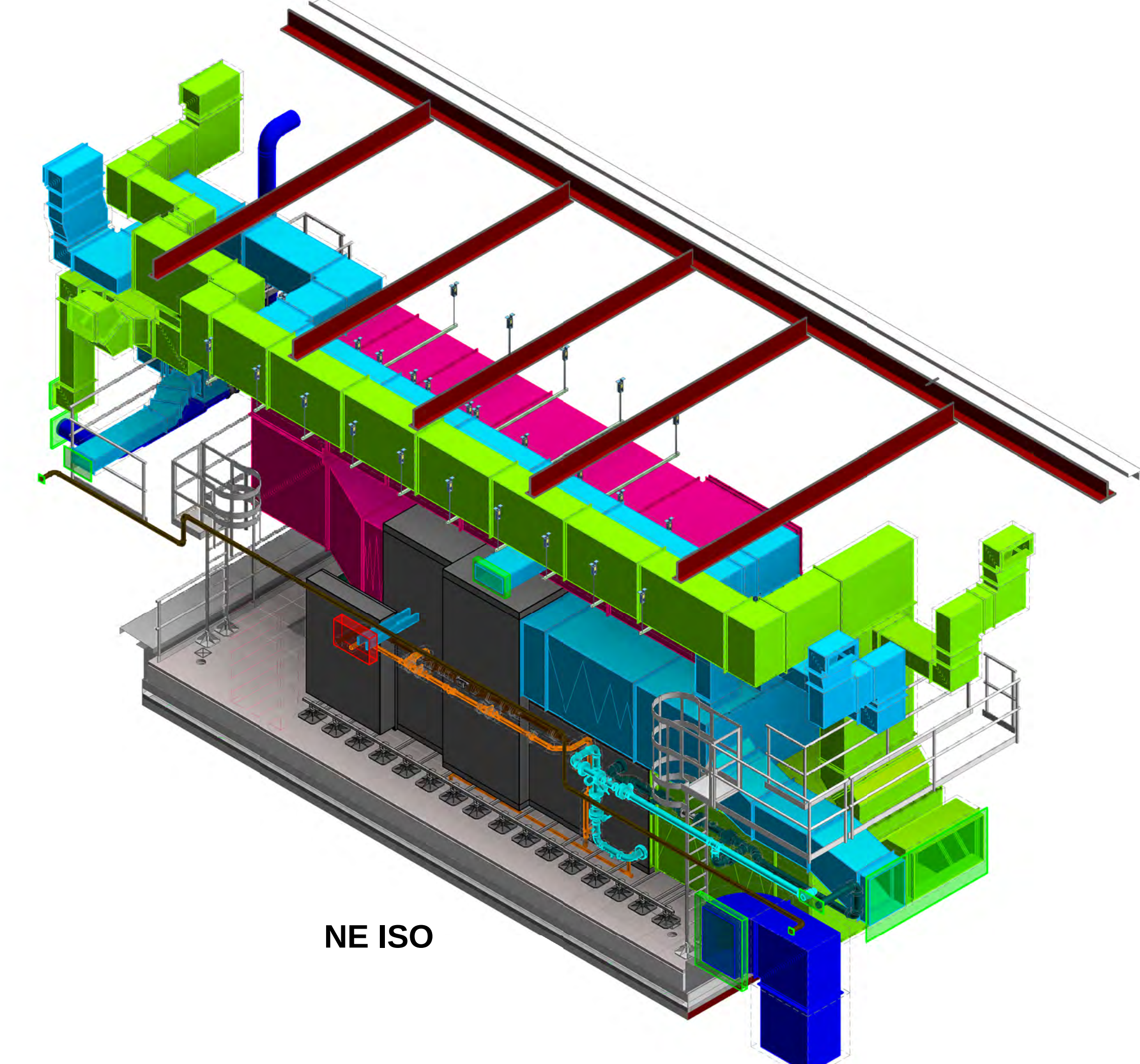


L03 WH NON DFMA RISER LAYOUT
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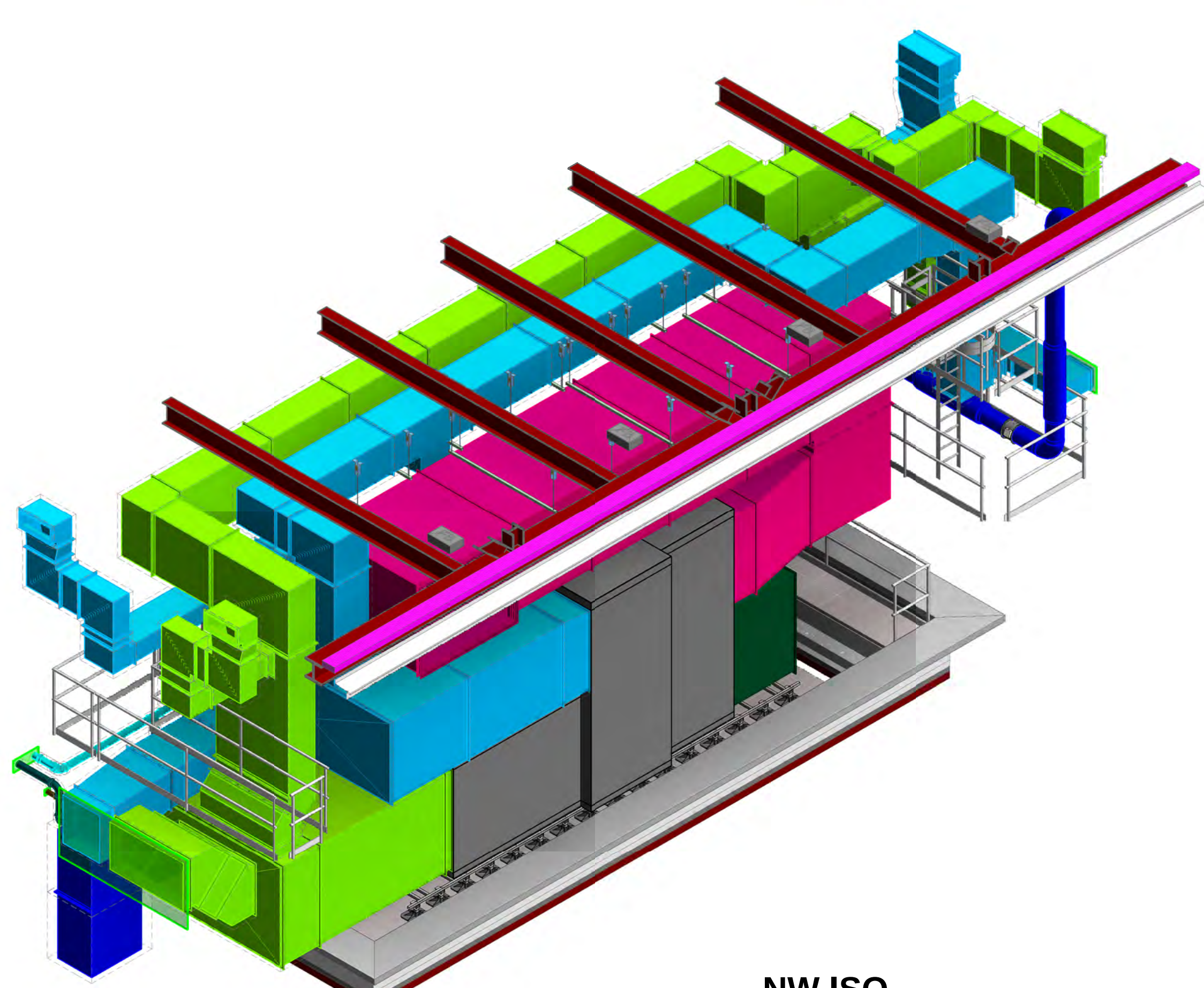


L02 WH NON DFMA RISER LAYOUT
Scale: 1: 25

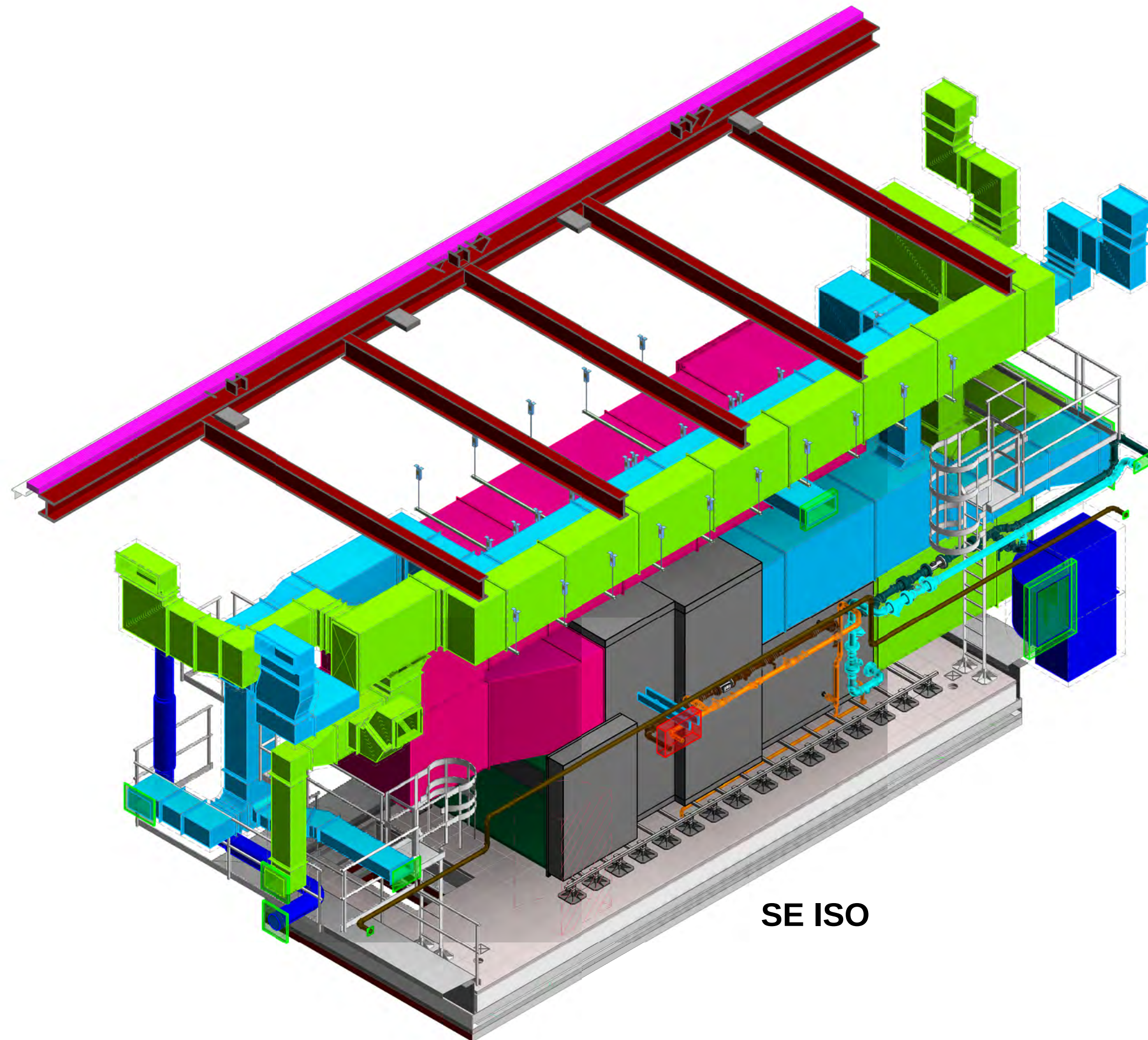




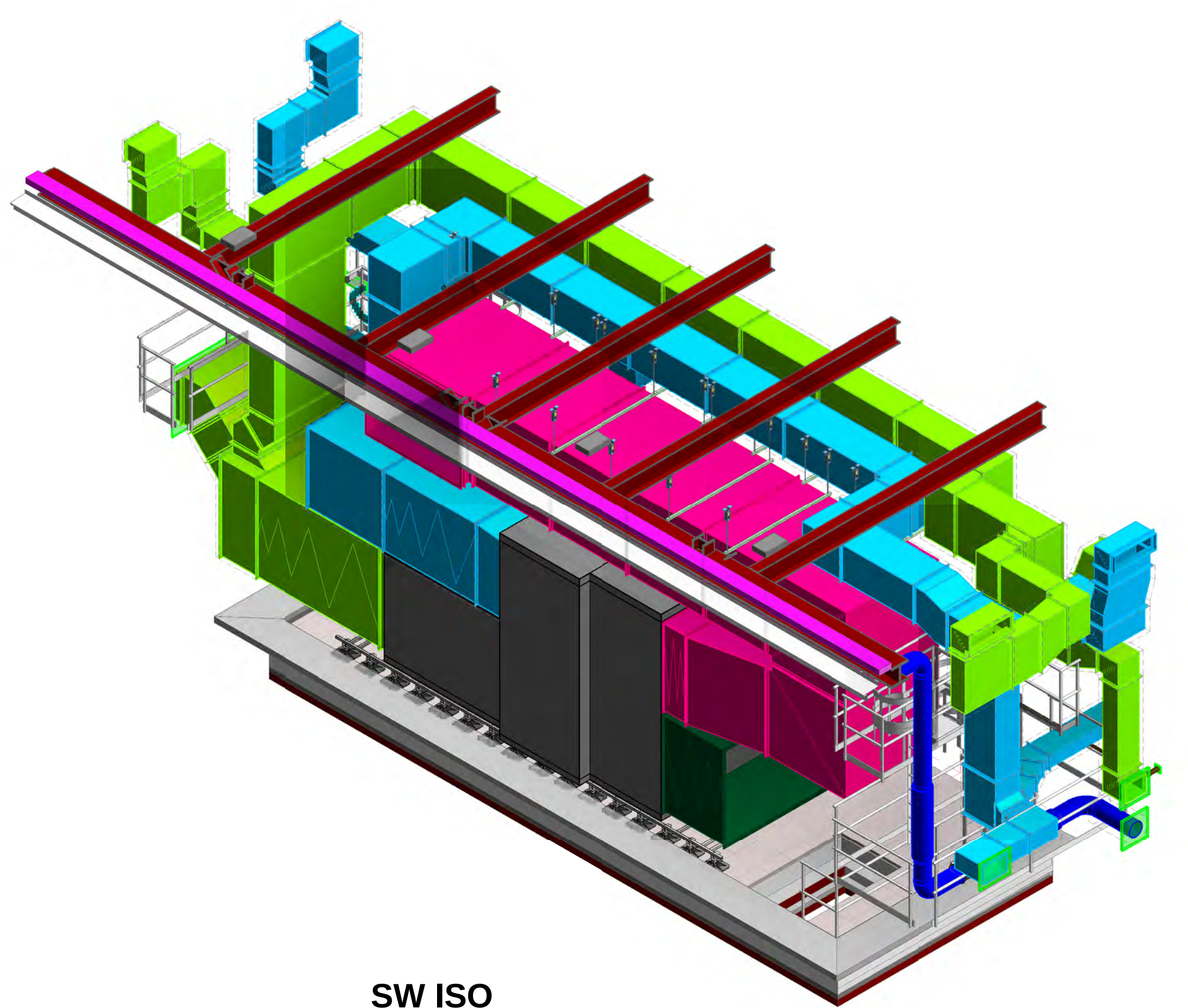
NE ISO



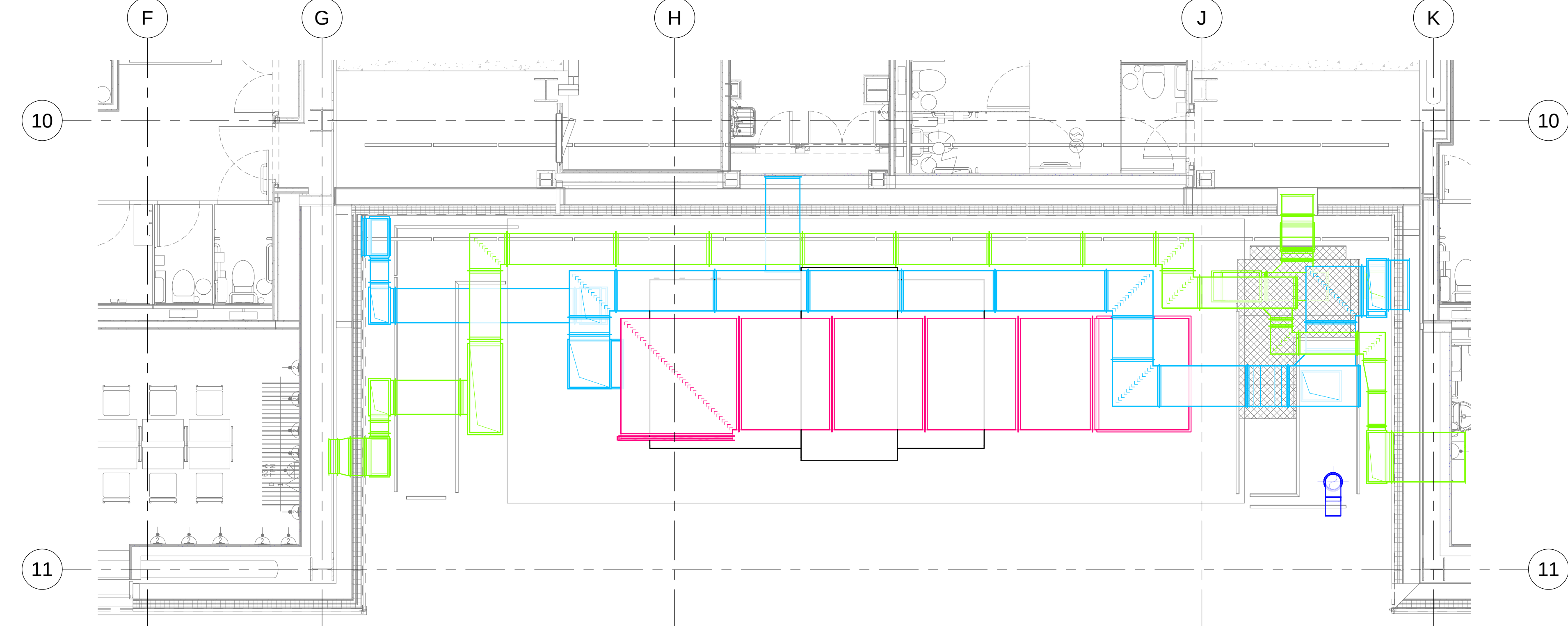
NW ISO



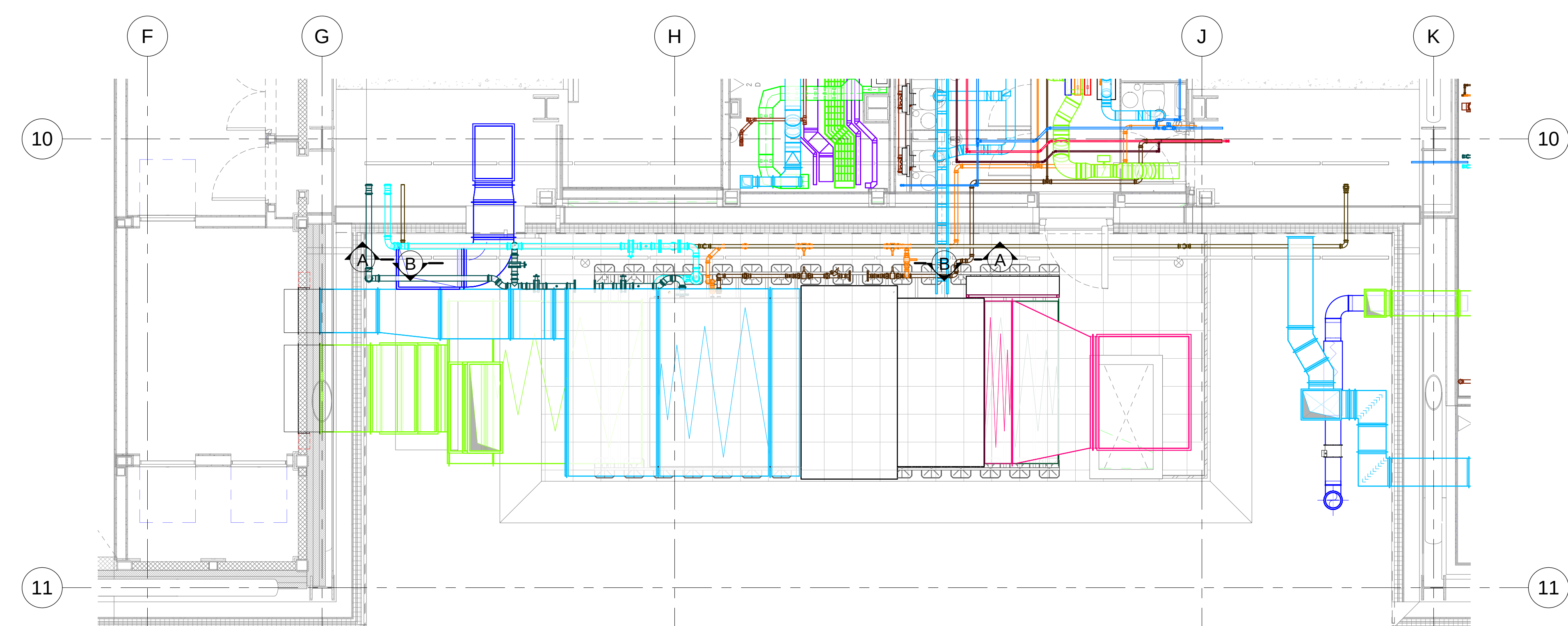
SE ISO



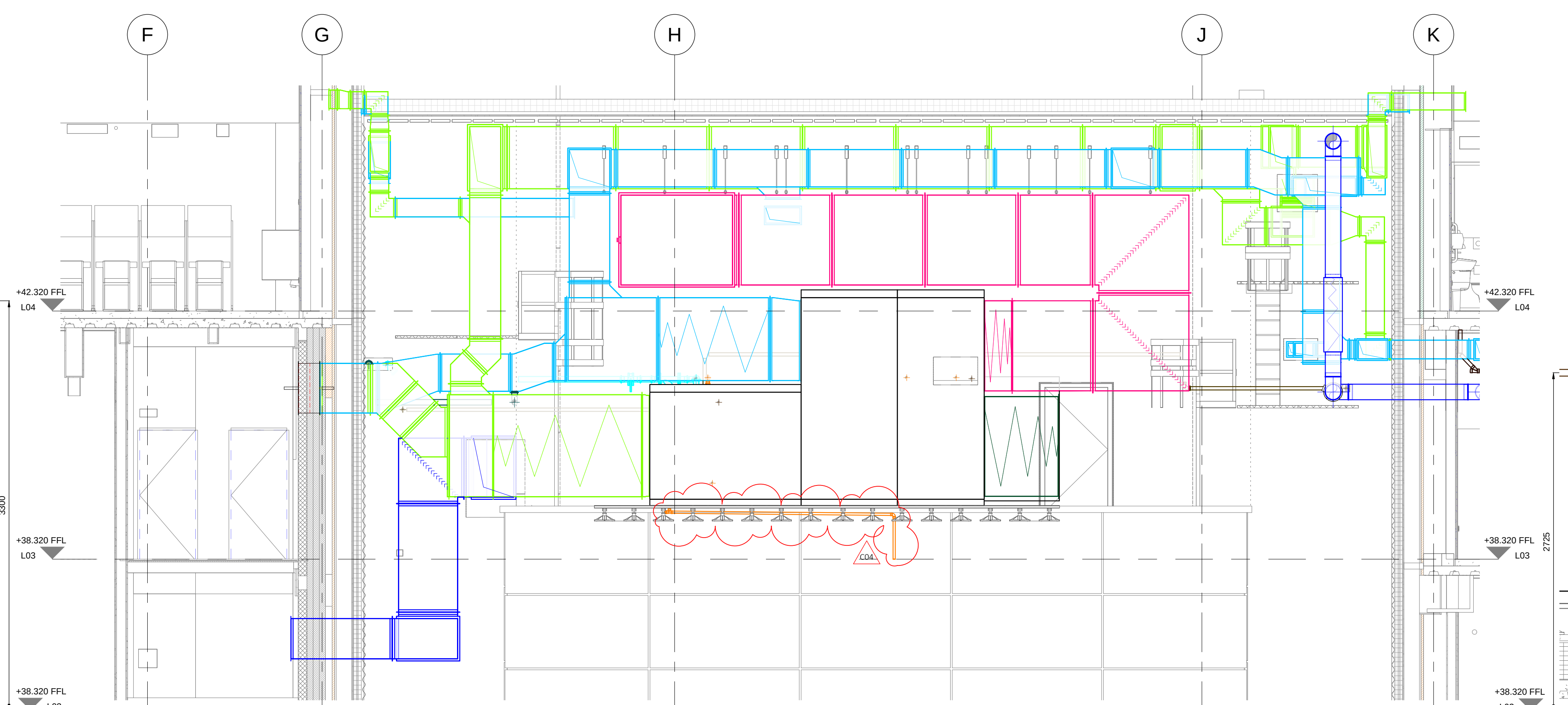
SW ISO



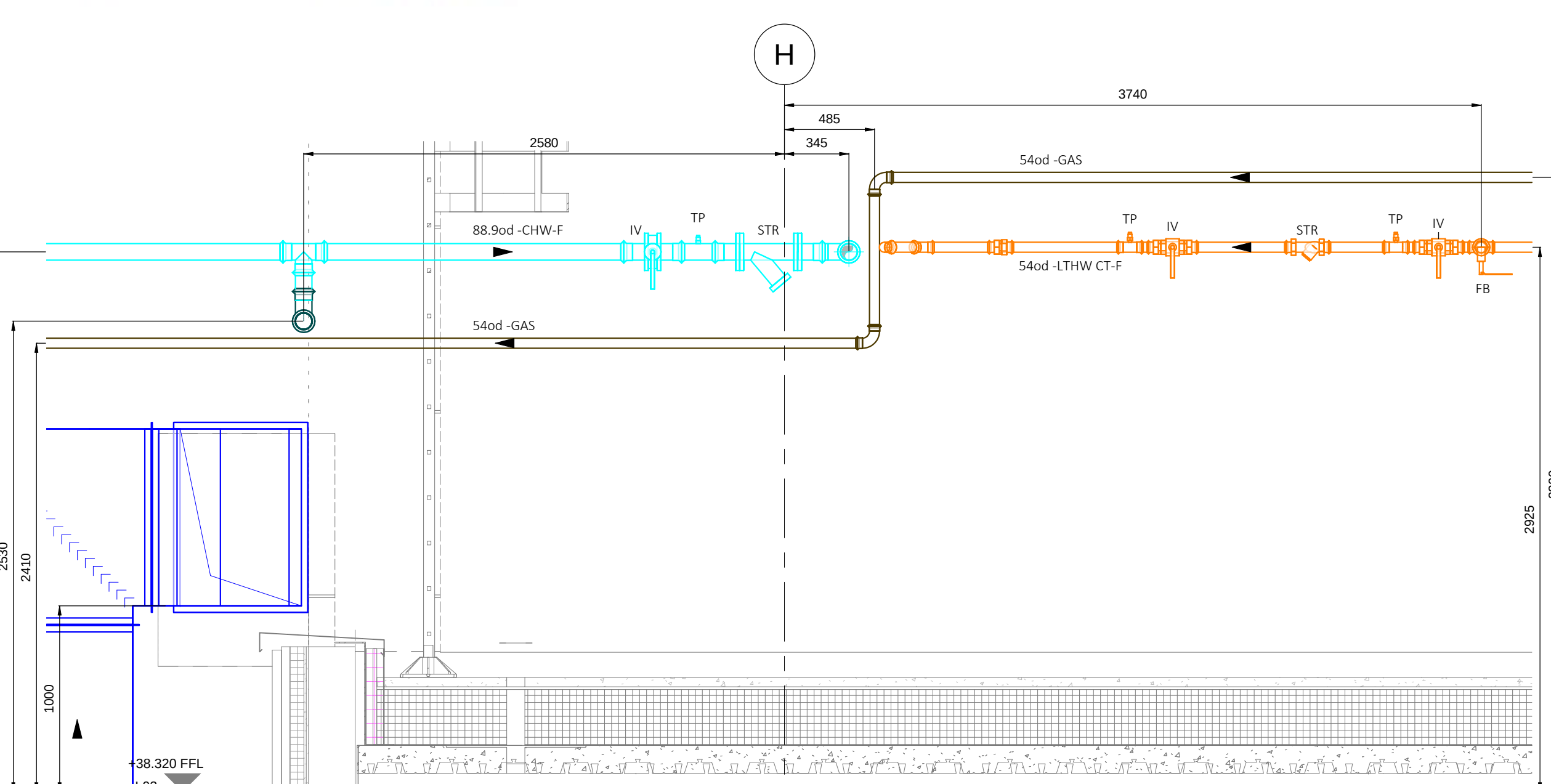
L04 to Soffit Plan Layout
1 : 50



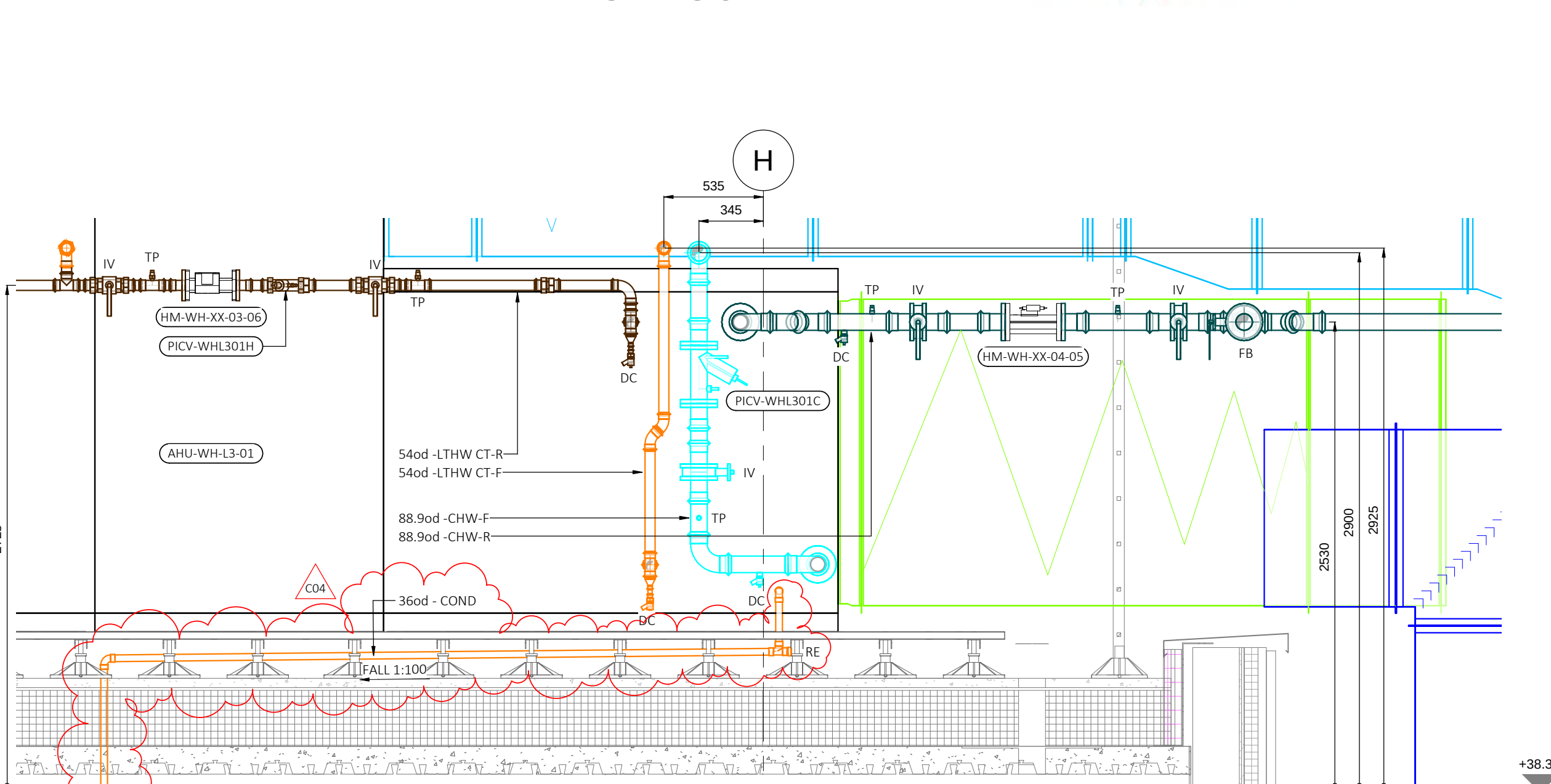
L03 to L04 Plan Layout
1 : 50



Elevation
1 : 50



AHU 6 Valve Arrangement Elevation A
1 : 25



AHU 6 Valve Arrangement Elevation B
1 : 25

DYNAMIC RISK ASSESSMENT
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CONSULTANT:
ARCHITECTURE : MF-BDP-XX-XX-M3-MK-00-0001
STRUCTURAL : MF-OMA-XX-XX-M3-A-00-0001
MF-RYD-XX-XX-M3-A-00-0001
MF-BHE-XX-XX-M3-S-00-0002

KEY PLAN:

LEGEND

SEE DRAWING No: MF-CHT-WH-L3-DR-M-50-00701 FOR SERVICES DETAILS

STEELWORK

STEELWORK ASSEMBLY IS A NOTIONAL SOLUTION ONLY
STEELWORK DESIGN BY OTHERS

ALL LEVELS REFERENCED FROM L03 FFL

C04	16/08/22	Condensate from AHU added.	DAC	RJD
C03	08/04/22	AHU valve sets modified to latest Tech Subs and due to Ryder steelwork development. New elevations added.	DAC	RJD
C02	22/11/21	Ductwork modified due to Ryder Opera XL amendments.	DAC	RJD
C01	11/11/21	BDP Comments incorporated. Amendments to ductwork into Opera XL based on BDP Design Note.	DAC	RJD
P01	16/08/21	Issued for External Approval	DAC	AR
Rev	Date	Revision	Chk	Dm

Client: **MANCHESTER CITY COUNCIL**

Status:
S4 FOR CONSTRUCTION APPROVAL

Project:
FACTORY
MANCHESTER
MANCHESTER CITY COUNCIL

Drawing Title:
Warehouse Third Floor
Plantdeck Multi-Service Layout
Sheet 1 of 2

Architect:
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Fax: +44 (0)1777 356076
www.crownhouse.com

Crown House

LAING OROURKE

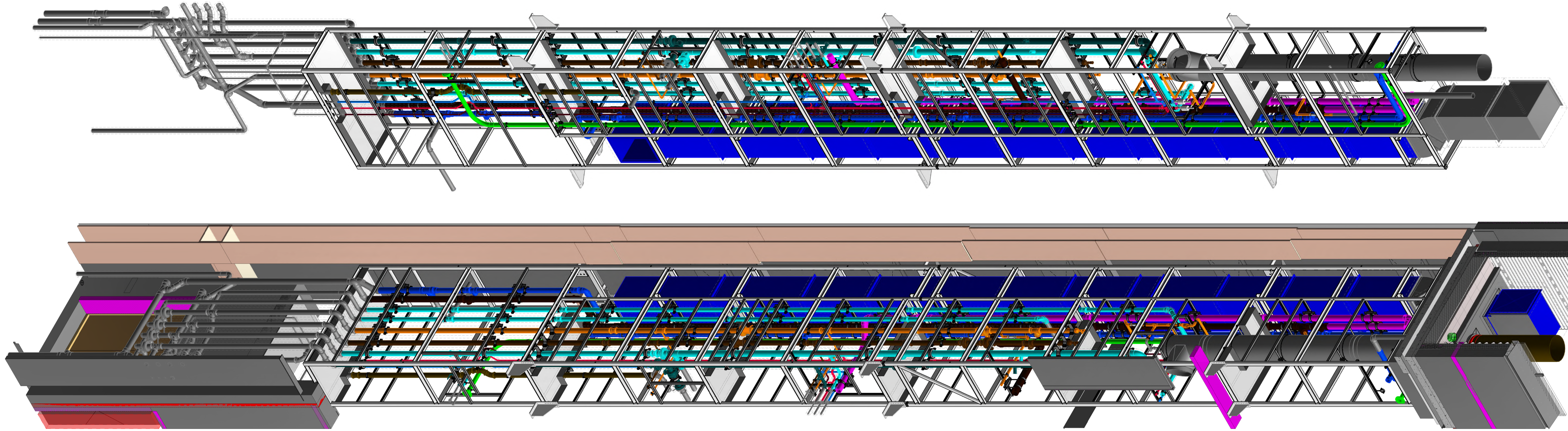
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Scale: As indicated
Original Drawing Size: A0

Coordinated: MY
Detailed: MY
Checked: DAC
Approved: 38
Date: 08/04/20

Drawing Number: MF-CHT-WH-L3-DR-M-50-0700
Rev: C04

WH S MECH RISER - ISO NW

WH S MECH RISER - ISO NE



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This drawing must not be scaled. All dimensions to be checked on site.

DYNAMIC RISK ASSESSMENT

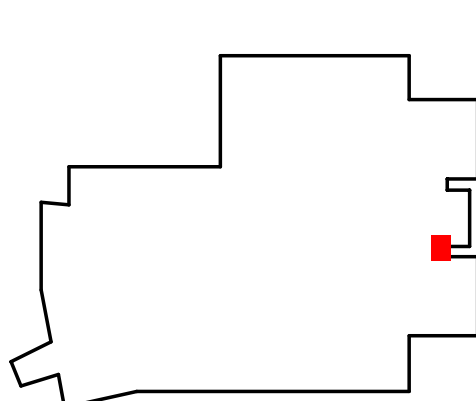
PPE
Is it PPE for purpose, appropriate for task, in good condition

HOUSEKEEPING
Before you start is your area? Clean and tidy, free from trip hazards, with all waste in appropriate bins, has a safe route for 110V trailing leads.
Before you finish ensure your area has no hazards for the next shift

TOOLS & EQUIPMENT
Are they? In good working order, PAT tested, correct for task

WORKS
Do you? Understand your scope of works, have the required skills to carry out tasks, have a Method Statement and Risk Assessment to cover tasks, need to work at height - if so - you will require a Permit to Work, have any abnormal lifts or movements - if so - is there a Lifting Plan.
If you are unsure of anything or you are not happy that the work you are proposing is to be done then please stop and consult your Supervisor or Team Leader and do not carry out the work

Site Plan



CONSULTANT : MF-BDP-XX-XX-M3-MX-00-0001

ARCHITECTURE : MF-RVD-XX-XX-M3-A-00-0001

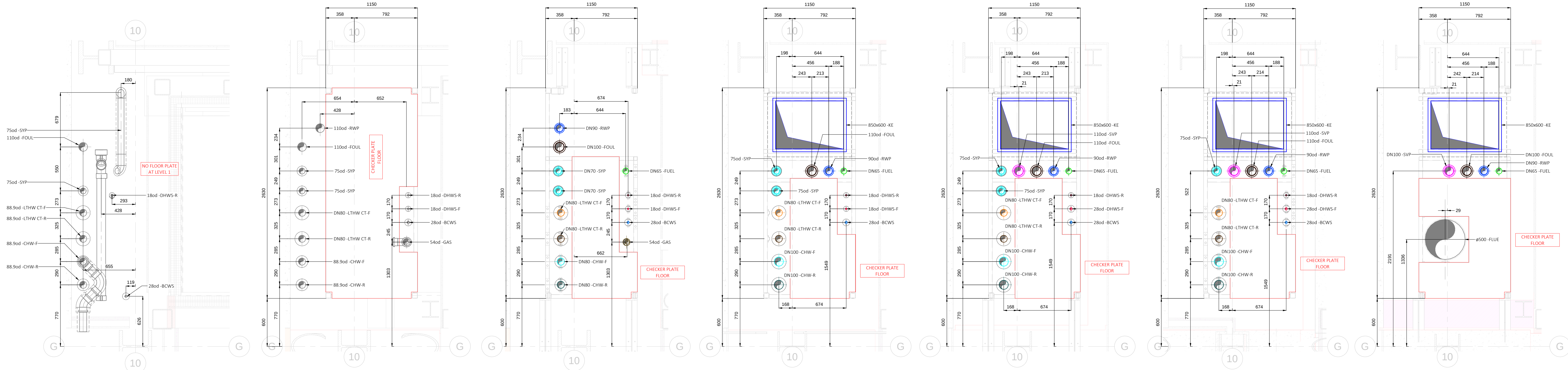
STRUCTURAL : MF-OMA-XX-XX-M3-A-00-0001

MF-BHE-XX-XX-M3-S-00-0002

LEGEND

IV - ISOLATION VALVE
GV - GAS ISOLATION VALVE
SV - SOLENOID VALVE
PRV - PRESSURE REDUCING VALVE
DPV - DIFFERENTIAL PRESSURE CONTROL VALVE
DRV - DOUBLE REGULATING VALVE
TMV - THERMAL MIXING VALVE
NRV - NON RETURN VALVE
CV - CIRCULATION VALVE
CS - COMMISSIONING STATION
CCBV - COMBO CONTROL, BALANCING VALVE (PVCV)
AVV - AUTOMATIC AIR VALVE
STR - STRAINER
MS - METER STATION
TP - TEST POINT
WM - WATER METER
DC - DRAIN COCK
WC - TOILET
WHB - WASH HAND BASIN
FD - FIRE DAMPER
SD - SMOKE DAMPER
AP - ACCESS PANEL
RE - ROOFING EYE

GRAVED OUT SERVICES ARE NOT INSTALLED / PROVIDED AS PART OF THE MODULE AND ARE TO BE SUPPLIED AND INSTALLED BY THE MECHANICAL / ELECTRICAL CONTRACTOR.



L01 WH S MECH RISER - FLOOR PLATE

Scale: 1:20

L02 WH S MECH RISER - FLOOR PLATE

Scale: 1:20

L03 WH S MECH RISER - FLOOR PLATE

Scale: 1:20

L04 WH S MECH RISER - FLOOR PLATE

Scale: 1:20

L05 WH S MECH RISER - FLOOR PLATE

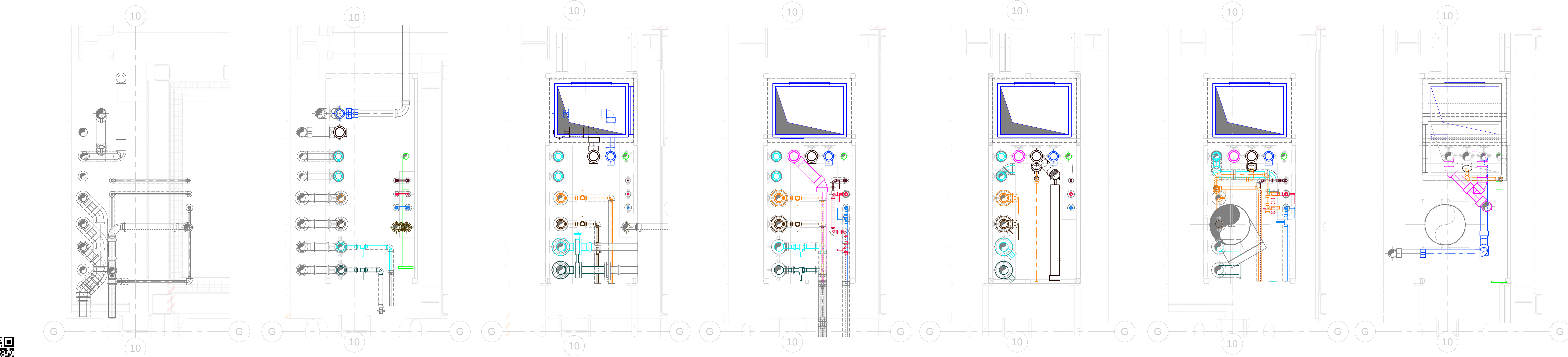
Scale: 1:20

L06 WH S MECH RISER - FLOOR PLATE

Scale: 1:20

L07 WH S MECH RISER - FLOOR PLATE

Scale: 1:20



L01 WH S MECH RISER COORDINATED LAYOUT

Scale: 1:20

L02 WH S MECH RISER COORDINATED LAYOUT

Scale: 1:20

L03 WH S MECH RISER COORDINATED LAYOUT

Scale: 1:20

L04 WH S MECH RISER COORDINATED LAYOUT

Scale: 1:20

L05 WH S MECH RISER COORDINATED LAYOUT

Scale: 1:20

L06 WH S MECH RISER COORDINATED LAYOUT

Scale: 1:20

L07 WH S MECH RISER COORDINATED LAYOUT

Scale: 1:20

C05	26/04/21	Issued for Construction. LTHW size change to 80/9 from DN100 as per schematic C09	DAC	MDY
C04	12/04/21	Issued for Construction. OMA architecture replaced by Rydler architecture. branches coordinated to avoid Rydler steel fire cladding, inline trap added under boiler flue. KE entry point raised to suit plantdeck height.	DAC	MDY
C03	17/11/20	Issued for Construction. Frame width (dimension 2030 increased was 3021) to suit increase in vertical box section to 705q (was 50)	DAC	MDY
C02	20/10/20	Issued for Construction. CHW branches added at L2. Boiler flue removed from profile. KE disc size changed and joints added. Surge arrestors added. Top of riser bypass removed, inline traps / handholes added. Brackets and anchors finalised. Frame strengthened (I.B.C.)	DAC	MDY
C01	14/07/20	Issued for Construction	DAC	MDY
P01	19/03/20	Issued for External Approval	DAC	MY
Rev	Date	Revision	DAC	CHK

Status:

S4 FOR CONSTRUCTION APPROVAL

Project:

THE FACTORY

Drawing Title:

MANCHESTER

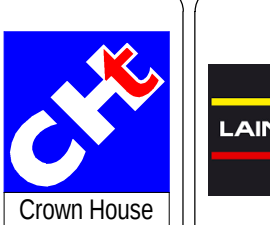
Warehouse Tower Riser Mech ISO NW

WAREHOUSE TOWER RISER MECH ISO NE

(Sheet 2 of 2)



MANCHESTER CITY COUNCIL
Albert Square, Town Hall,
M2 5DB, Manchester
United Kingdom
T +44 (0) 161 234 5004



Project:

N3844

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Date:

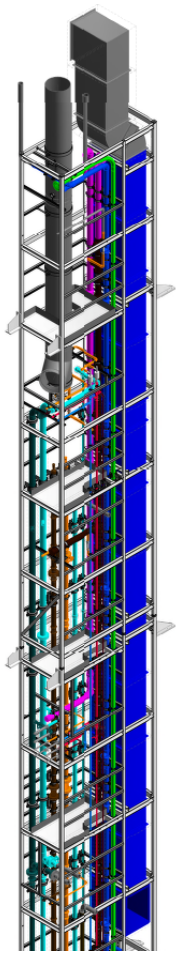
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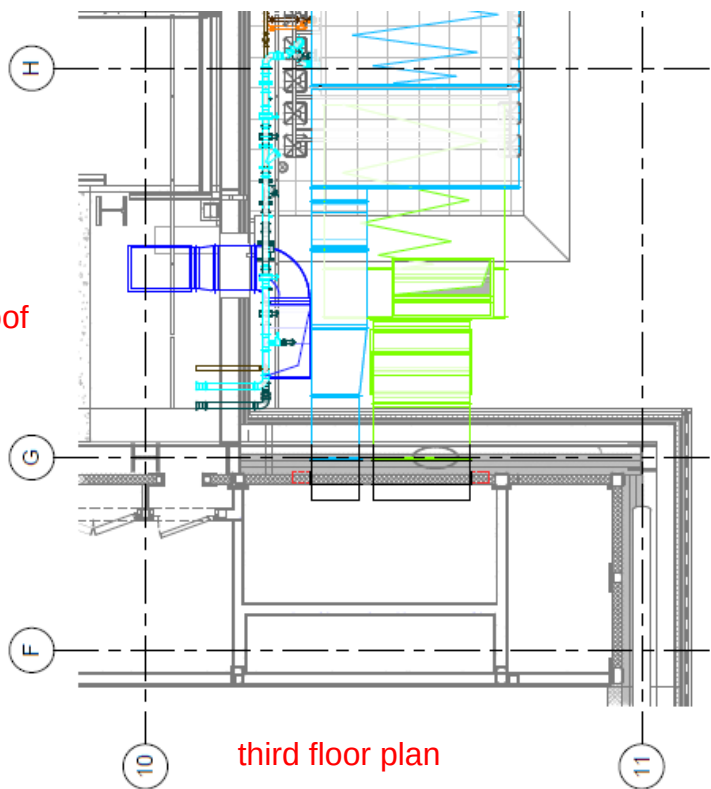
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Rev:

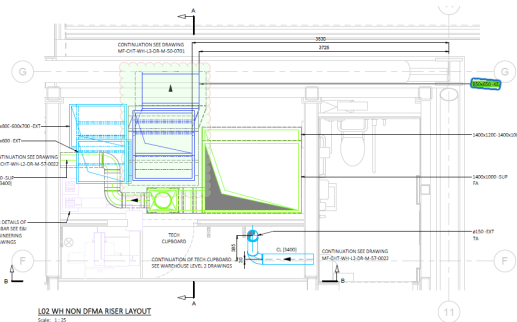
C05



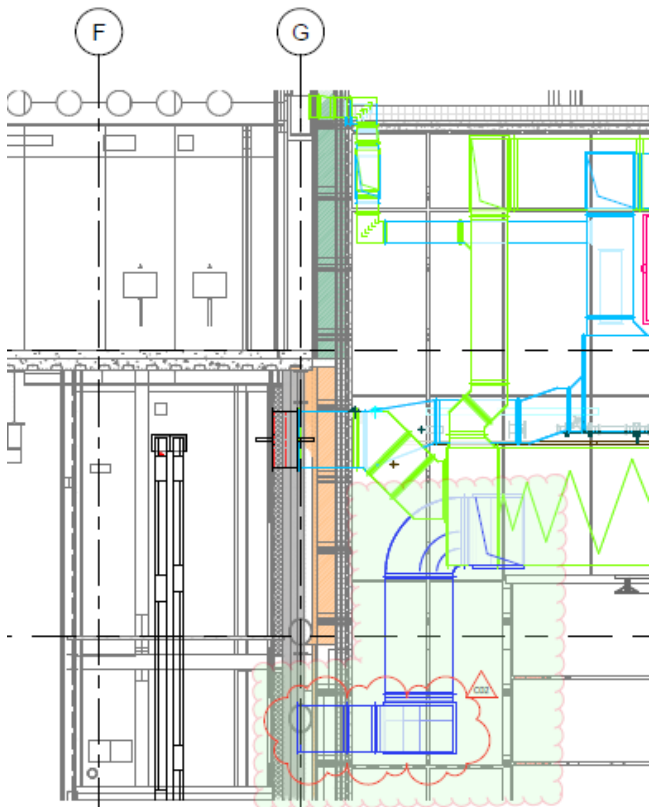
main riser 3rd floor to roof



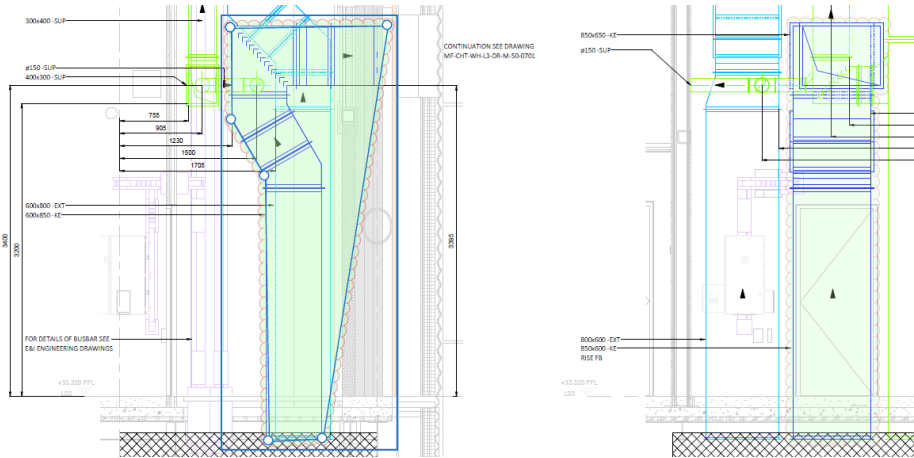
third floor plan



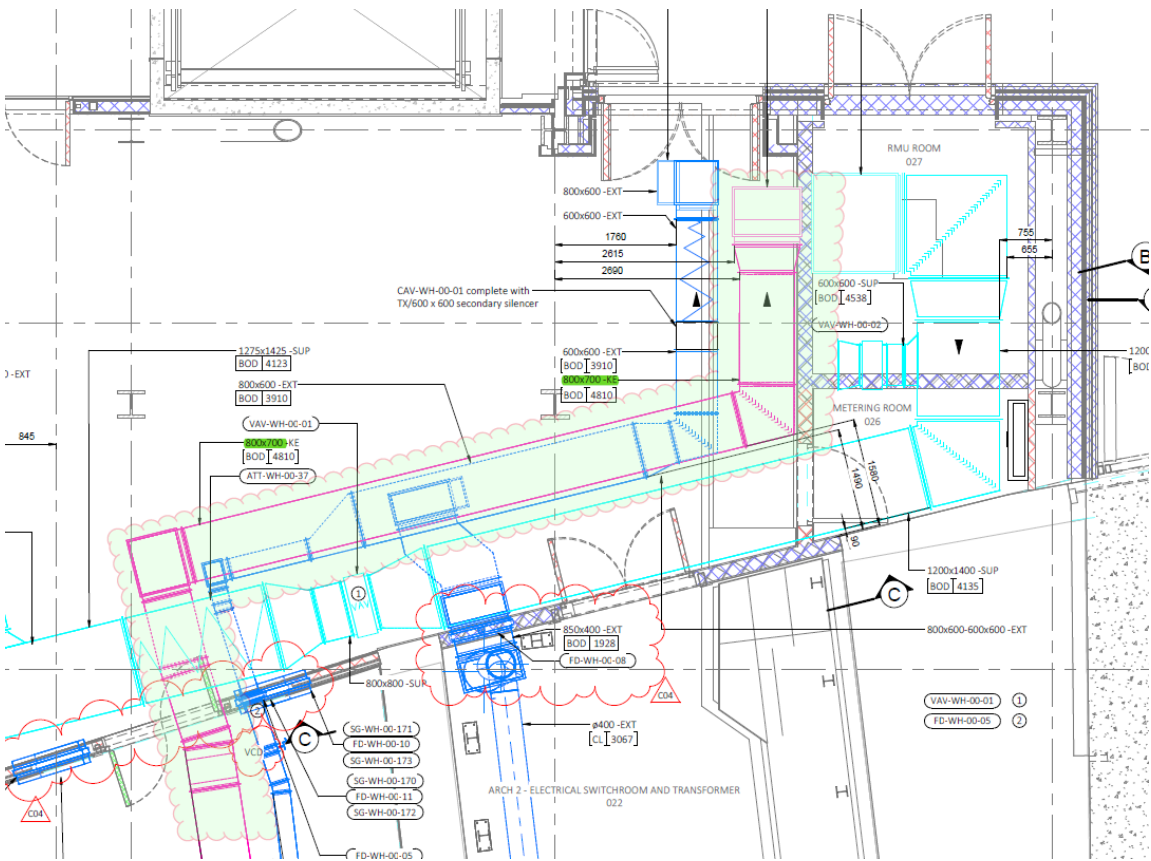
second floor plan



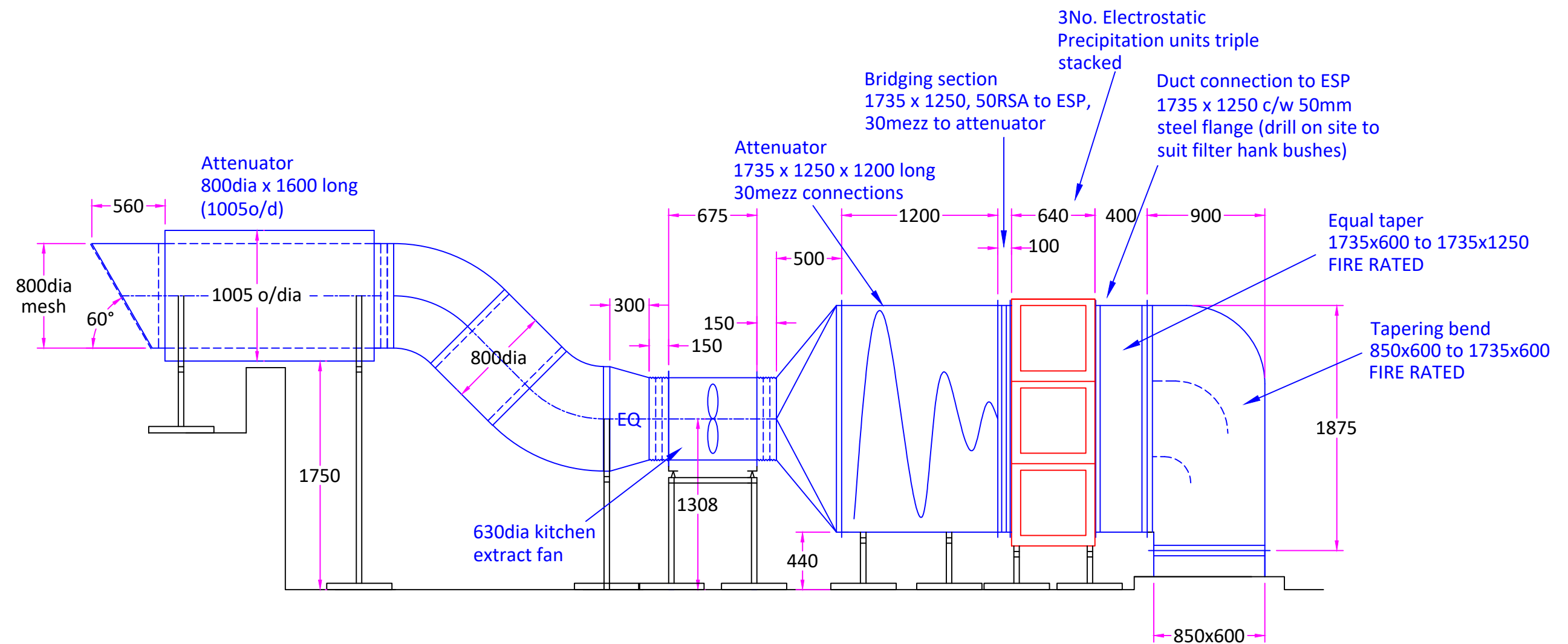
elevation 2nd floor to 3rd floor roof deck and into main riser



riser ground to 2nd floor



ground floor plan



PROPOSED KITCHEN EXHAUST SYSTEM LEVEL 7.5

Electrostatic Precipitation (ESP) Filter Unit



Technical and Operations Manual

For Models: ESP 1500EI
ESP 3000EI
ESP 4500EI
ESP 6000EI

Using this Manual

This manual is intended to be used as a work of reference for professional, well trained and authorised users to assist them to safely install, use, maintain and repair the Unit mentioned on the cover of this document.

Please note that it is strongly recommended training be given by Purified Air Limited prior to operatives attempting to carry out maintenance or repair work on these Units.

Copyright Statement

All rights reserved

No part of this publication may be copied or published by means of printing, photocopying, microfilm or otherwise without prior written consent of the manufacturer. This restriction also applies to the corresponding drawings and diagrams.

The information given in this manual has been collected for the general convenience of our clients. It has been based on general data pertaining to construction material properties and working methods known to us at the time of issue of the document and is therefore subject at any time to change or amendment and the right to change or amend is hereby expressly reserved. The instructions in this publication only serve as a guideline for installation, use, maintenance and repair of the models mentioned on the cover page of this document.

This manual is to be used for the standard models of the Unit of the types given on the cover page. Thus the manufacturer cannot be held responsible for any damage resulting from the application of this manual to the version actually delivered to you.

This manual has been written with great care. However, the manufacturer cannot be held responsible, either for any errors occurring in this manual or their consequences.

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1. Safety

1.1 Introduction

Everyone working on or with the Unit must be familiar with the contents of this manual and must strictly observe the instructions herein.

The Management should instruct personnel in accordance with this manual and observe all instructions and directions given herein.

Note: Always follow the steps for any instructions in this manual in the order given.

Always keep this manual with the Unit.

The user of the Unit is always fully responsible for observing all applicable local safety instructions and regulations.

Specific working conditions or selected accessories may require additional safety instructions. Contact your supplier immediately if you detect a potential danger when using the Unit.

1.2 Safety Warnings and Instructions

The following symbols and notifications are used in this manual:



WARNING!

Used to warn of a risk of injury or death.



WARNING! - DANGER OF ELECTRIC SHOCK!

Used to warn of a risk of injury or death from electric shock.



CAUTION

Used to caution of a risk of damage to equipment.



INFORMATION

Important information or useful hints about usage.



RECYCLING

Recycling information.



WEEE REGULATIONS

Ensure that waste electrical equipment is disposed of correctly.

1.3 Pictograms, Warnings and Instructions Displayed on the Unit

The pictograms, warning and instructions attached to the Unit are part of the safety features.

They must not be covered or removed and must be present and legible during the entire life of the Unit.

- Immediately replace or repair damaged or illegible pictograms, warnings and instructions.

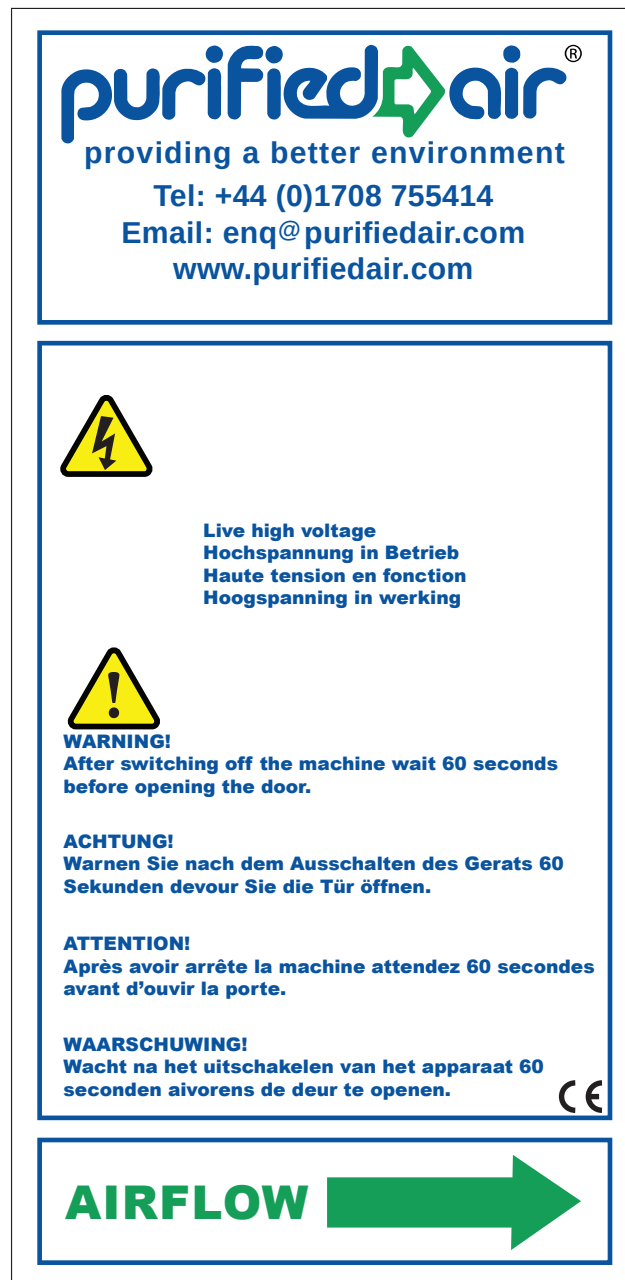


Figure 1 - Unit Label

1.4 Safety Features

An Interlock in the Unit's Door Assembly interrupts the mains power if the main filter compartment is opened before the mains power has been isolated.



CAUTION

All safety features must be correctly installed and can only be removed for maintenance and repair tasks by skilled and authorised service engineers.

The Unit must not be used if the safety features are not fully present or defective.

The safety features should be regularly checked to ensure that they are functioning correctly and, if defective, should be repaired immediately.

1.5 Safety Warnings and Cautions



WARNING! RISK OF EXPLOSION!

The Unit is not explosion-proof rated. It can cause sparks and should therefore not be used in areas with an explosion risk.



WARNING! Fire Hazard!

Never use the Unit for extracting and/or filtering inflammable, glowing or burning particles or solids or liquids.

Never use the Unit for extracting and/or filtering of aggressive fumes (such as hydrochloric acid) or sharp particles.



WARNING!

Ozone (O₃) is produced by the Unit. Ozone can be poisonous at low concentrations.



Inhalation of ozone causes dryness of the mouth, coughing and irritates the nose, throat, and chest.

It may cause difficulty in breathing, headaches and fatigue, and could aggravate existing bronchial conditions including asthma. The characteristic sharp, irritating odour is readily detectable at low concentrations (0.01 to 0.05 ppm).

The Unit must not be operated without the kitchen's extractor fan(s) running.



WARNING! - DANGER OF ELECTRIC SHOCK!

To avoid electric shock:

Do not operate Unit without a proper electrical ground/earth.

Always disconnect power to the Unit and isolate the Unit, before performing any service or maintenance.

Do not operate the Unit if its power cables are damaged or if any other damage to the Unit is visible or suspected.

The supplied utility/mains power must match the power requirements listed on the Unit's rating label.



CAUTION

Regularly inspect the Unit and check it for damage.

Verify the correct functioning of all of the safety features.

Read and save all notices, warnings and safety instructions received with this Unit.

Do not alter the construction or design of this Unit.

Do not remove safety labels or devices.

Do not use this equipment for other than its intended purpose, as described in this manual.

Only use original spare parts.



CAUTION

Make sure the room is always sufficiently ventilated, particularly in smaller, confined areas.

Do not use the Unit at a relative humidity exceeding 75%.

Do not use the Unit at temperatures below -10°C or above 60°C.

Keep the operating controls free from dirt and grease.

Check the working environment. Do not allow unauthorised persons to enter the working environment.

Use common sense. Stay alert and pay attention to your work. Do not use the Unit when you are tired or under the influence of drugs, alcohol or medicine.

1.6 Modifications

Modification of the Unit is not permitted.

1.7 Users

Installation or maintenance of the Unit is exclusively reserved for authorised, trained and qualified users.

Temporary personnel and trainees should only access the Unit under the supervision and responsibility of the authorised, trained and qualified users.

1.8 Technical Specifications

There are currently four models in the range:

- ESP 1500EI, which contains a single ESP Collector Cell.
- ESP 3000EI, which contains two ESP Collector Cells.
- ESP 4500EI, which contains three ESP Collector Cells.
- ESP 6000EI, which contains four ESP Collector Cells.

The specification of each model is detailed below:

	ESP 1500EI	ESP 3000EI	ESP 4500EI	ESP 6000EI
Power consumption	20 Watts	30 Watts	40 Watts	50 Watts
Maximum air handling capacity	Up to 0.7m ³ /sec	Up to 1.4m ³ /sec	Up to 2.1m ³ /sec	Up to 2.8m ³ /sec
Dimensions	W 450mm H 630mm D 640mm	W 900mm H 630mm D 640mm	W 1350mm H 630mm D 640mm	W 1800mm H 630mm D 640mm
Weight	55kg	85kg	118kg	153kg
Power supply	220/240V 50Hz 1ph	220/240V 50Hz 1ph	220/240V 50Hz 1ph	220/240V 50Hz 1ph
Filter efficiency	Up to 98%	Up to 98%	Up to 98%	Up to 98%
Housing	Epoxy-coated galvanised steel	Epoxy-coated galvanised steel	Epoxy-coated galvanised steel	Epoxy-coated galvanised steel

1.8.1 Rating Plates



Figure 2 - Rating Plates for Each Model

2. Product Overview

2.1 Intended Use

The Electrostatic Precipitator (ESP) models covered by this manual have been designed primarily for filtering the extract air from commercial kitchens and have various specific features to suit that purpose.

Note: Though they can also be used for air filtration in other commercial and industrial applications where a high degree of filtration is needed, before considering alternative uses, please check with the manufacturer to confirm that your Unit will be suitable for its intended use.



CAUTION

No liability is accepted for damage or injury which results from any alternative use which has not been verified in writing by the manufacturer.

Using the Unit for alternative uses not approved in writing by the manufacturer is considered contrary to its intended use.

The Unit has been built in accordance with state-of-the-art standards and recognised safety regulations.

Individual Units can be mounted together in various combinations to satisfy the requirements of a particular installation.



CAUTION

Only use the Unit:

If it is not damaged in any way.

After following the instructions laid down in this manual.



Figure 3 - ESP Filter Unit (Model ESP 4500EI)

2.2 Features

The following features are applicable to all four models covered by this manual:

- They can be installed outside without an additional weather housing.
The Unit's casings is fully weatherproofed, with the Main Door components having an IP Rating of 64 and the Door Assemblies themselves being tightly sealed to the main chassis.
- The ionisation voltage runs at a negative potential which enhances both the ionisation of particles and their consequent precipitation and the production of ozone which helps eliminate odours in a kitchen environment.
- A high degree of efficiency, with power consumption between 20 Watts and 50 Watts, depending on the model.
- The Unit can be linked to a Building Management System (BMS) via a suitable relay mounted on the DIN rail (See: *Connecting the Unit to a Building Management System on page 21*).
- All internal components are designed for easy removal.
- The Mesh Filters (Pre and Post) are designed to drain independently and the Collector Cell is designed to be efficient, robust and effective.
- The Collector Cells and Filter Carriers can be easily removed for cleaning.
- The Collector Cells can be fitted with ionisation wires or with stainless steel spiked ioniser blades.
- All internal surfaces are as smooth and as free from screw and rivet heads as practically possible to allow for ease of cleaning.
- Fully welded sumps prevent leakage of collected grease. The inward sloping edges of the sumps encourage the flow of grease away from both the ducting and either side of the Unit.
- The Door Assemblies are designed to allow the Unit to be quickly reconfigured for different airflow directions.

2.3 Operating Principles

Commercial kitchen exhaust pollution is composed of two distinct phases:

- The particulate phase; oil, smoke and grease particles.
- The gaseous or odour phase.

2.3.1 Oil, Smoke and Grease Filtration

The primary function of Purified Air's range of Electrostatic Precipitators (ESPs) is to effectively filter the particulate phase (oil, smoke and grease) of extracted kitchen fumes.

The Unit covered by this manual utilises an ionisation process to filter particulates in the exhaust down to a sub-micron level, with an efficiency of up to 98% when fitted correctly.

The ESP Filters have been exclusively designed for filtering extracted kitchen fumes and have integral sumps built in to collect the oil and grease particles. This not only simplifies servicing but eradicates potentially dangerous spillage from the bottom of the Unit.

The entire range fits in-line with the kitchen's ducting and the modular layout allows additional Units to be easily added to cope with all kitchen fume extraction requirements.

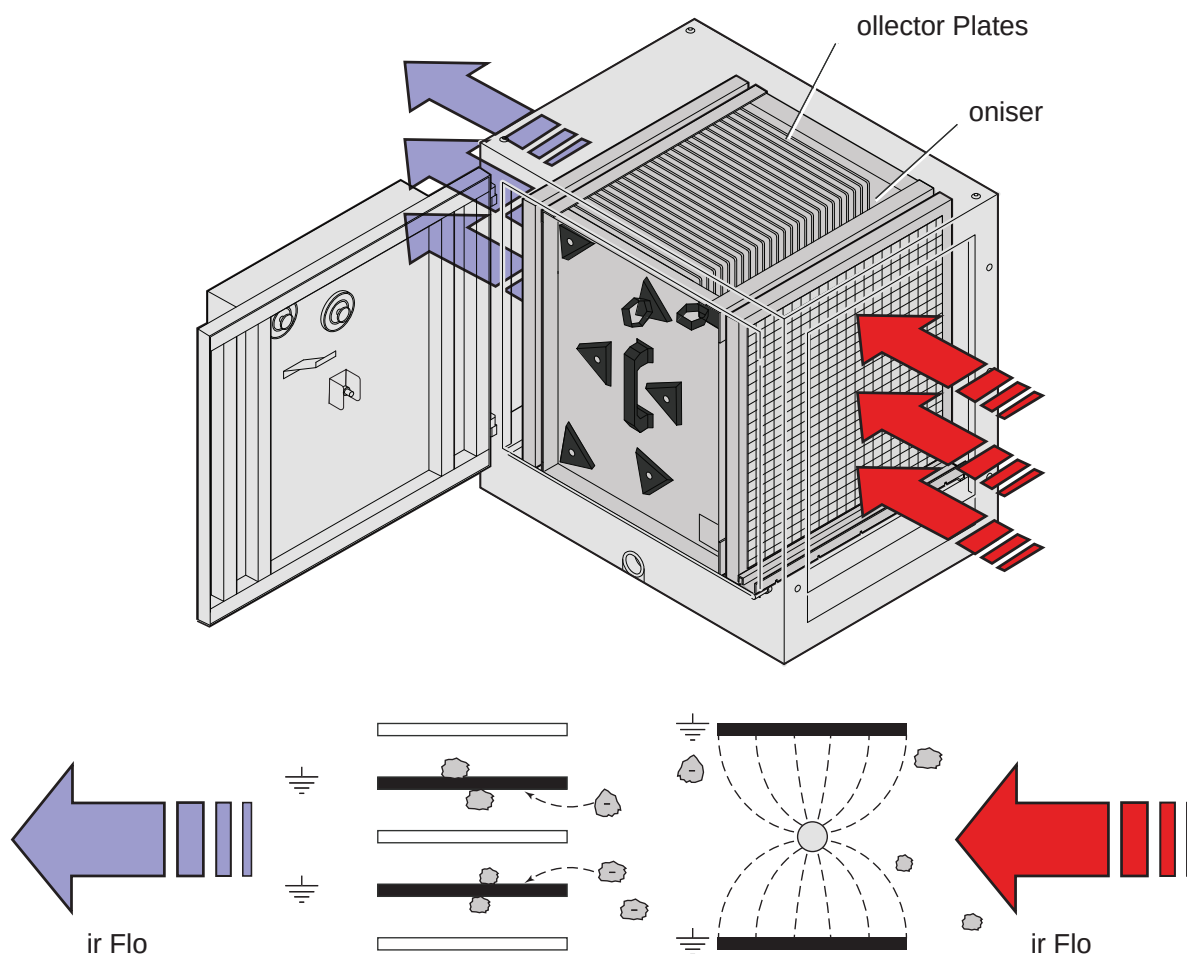


Figure 4 - Electrostatic Precipitator (ESP) - Operating Principles

Figure 4 (above) shows, in simple terms, how an electrostatic precipitator functions and this is summarised below:

1. The air first passes through a pre-filter.
2. The air then passes into the combined Collector Cell/Ioniser section where the particulates in the air stream are charged to a negative potential.
3. The negatively ionised air then passes between the Collector Cell's plates, which are alternatively negatively charged or earthed.
4. The negatively charged particulates passing through the plates are then simultaneously repelled away from the negatively charged plates and attracted to the earthed plates, where they stick, effectively filtering them from the airflow.
5. The particulates remain on the plates or drain down in to the sump (hence the need for regular cleaning).
6. The cleaned air exits through a post filter.

2.3.2 Odour Control

Ozone is produced as a function of the charging of the Collector Cell's plates in Purified Air's range of Electrostatic Precipitators. This helps to combat the gaseous or odour phase of kitchen exhaust pollution.

However, for total control of the gaseous phase, Purified Air also manufactures and distributes a range of Ultra Violet equipment and Ozone Generators as well as our Odour Neutraliser, the ON100.

Note: We also supply a full range of passive filtration equipment, including Activated Carbon, Baffle, Mesh, HEPA, Bag and Panel filters.

2.4 Electrostatic Precipitator Unit - Components

All models of Electrostatic Precipitator Unit comprise a Main Chassis with a number of removable components, a Main Door and an Electrical Housing Door.

2.4.1 Main Chassis

The Main Chassis contains the removable Collector Cell, Filter Carrier, Pre and Post Mesh Filters and non-removable, fully welded, Sump with Drain Plug.

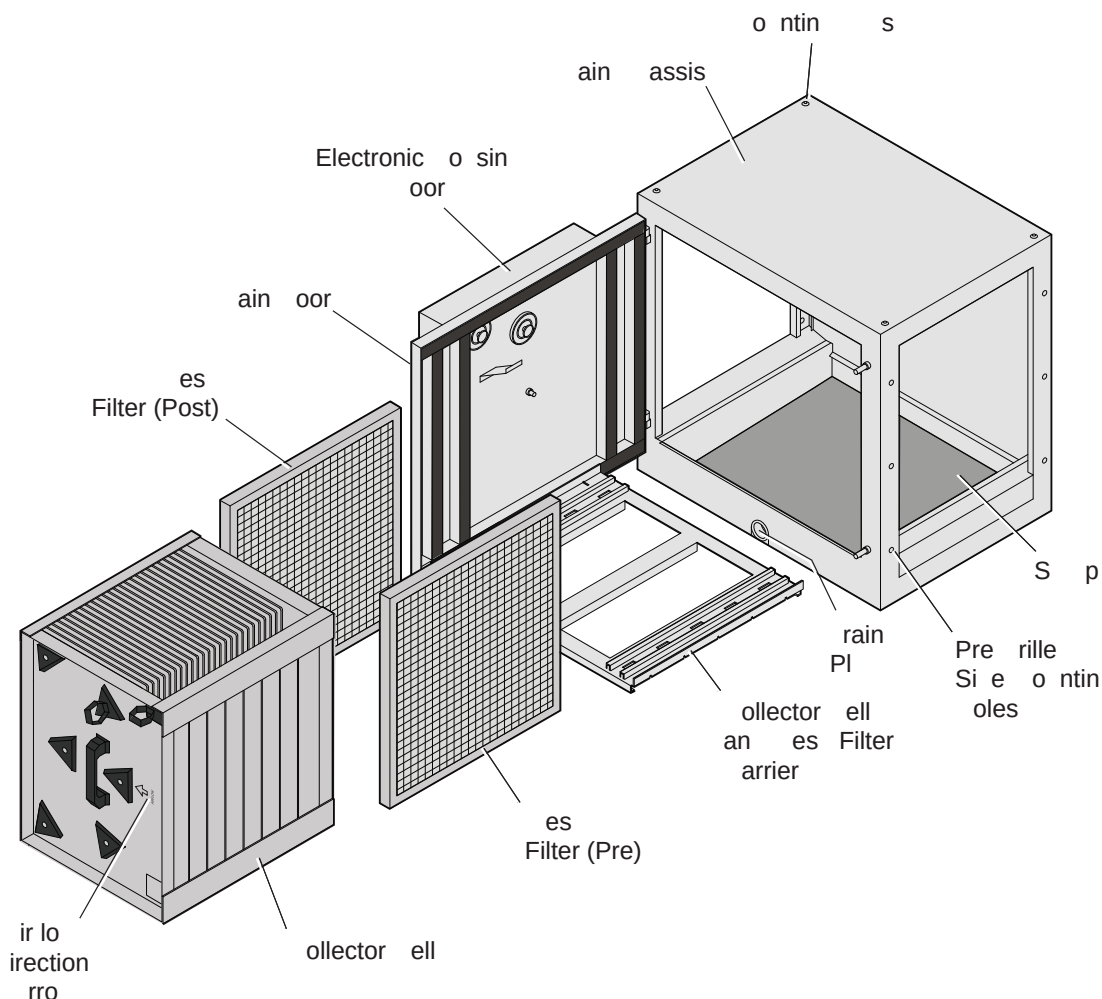


Figure 5 - Electrostatic Precipitator Unit - Main Chassis Components

2.4.2 Main and Electrical Housing Door Assemblies

The Main Door has an Electrical Housing Door which contains the High Voltage Power Supply (HVPS) and control elements. On the front of the Electrical Housing Door are mounted the Rotary Mains Isolator Switch and green Run Light Indicator.

The Main Door can be hung either way up to allow the Unit to be handed for different airflow directions.

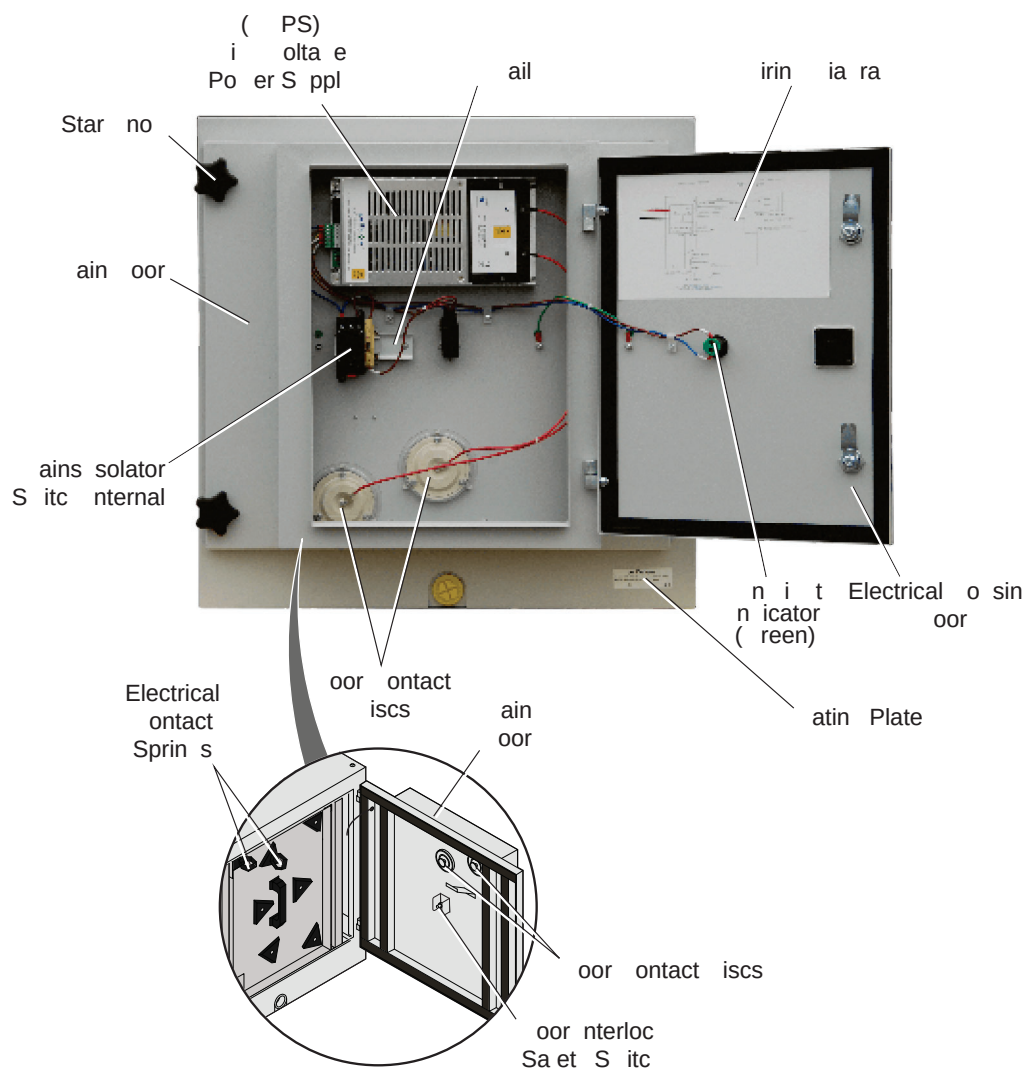


Figure 6 - Door Assemblies

3. Storage, Unpacking and Handling

3.1 Storage

Prior to installation, each ESP Filtration Unit must be stored in its original packaging in dry conditions.

3.2 Shipping List

Each Unit is shipped with the following:

- ESP Filter components - Mesh Filters and Collector Cells.
- This Technical and Operations Manual.

3.3 Unpacking and Handling

Before installing:

1. Strip away all packaging, wrapping and strapping (this must only be done by trained, professional installers).
2. Open the Unit and carefully remove all Mesh Filters and Collector Cells and place in a safe and secure position, away from the installation area.

This operation will greatly reduce the weight of the Unit and allow much easier installation.

3. Once the Unit have been successfully installed, carefully replace the Mesh filters and Collector Cells, ready for commissioning.



WARNING!

The Unit is heavy and the appropriate lifting and handling practices must be observed, for both unpacking and installation, to avoid personal injury or damage to the equipment.

See the Technical Specifications for Unit weights.

4. Installation Guidance

4.1 Overview

Installation should be carried out by a trained professional installer.

As installations vary widely depending on the specific site requirements, this section only provides general guidance for the installer.

If in any doubt, contact Purified Air Limited.

4.2 Model Dimensions

The dimensions, and the necessary service space required at the front of the Unit, are detailed opposite for each model.

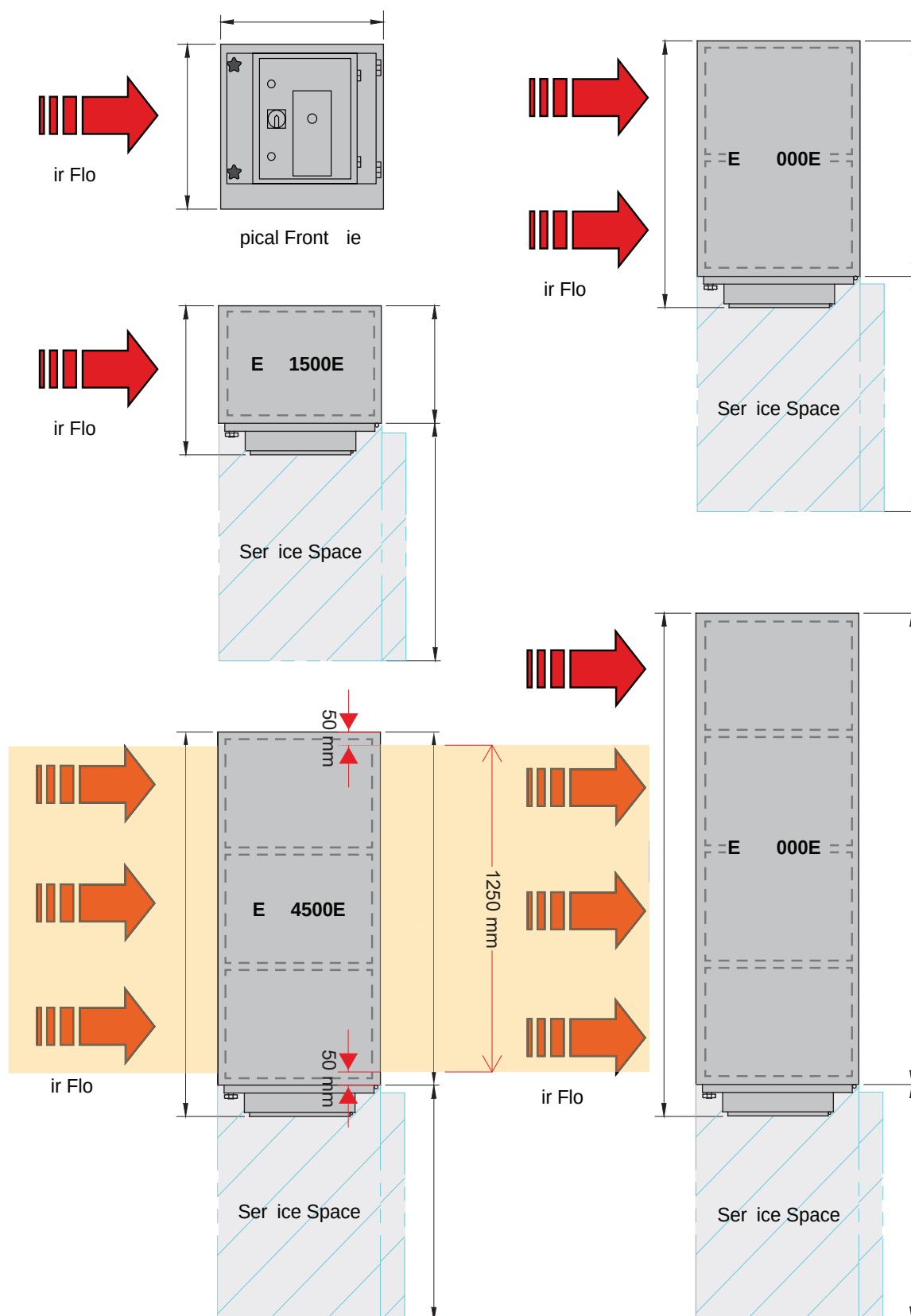


Figure 7 - Model Dimensions - ESP 1500EI, ESP 3000EI, ESP 4500EI and ESP 6000EI
(All Dimensions in Millimetres)

4.3 Pressure Loss Graphs

Any equipment added to a duct system will cause a drop in air pressure in the duct system, downstream of the added equipment.

To ensure that the duct system performs as expected, please note the Pressure Loss Graphs for each of the models:

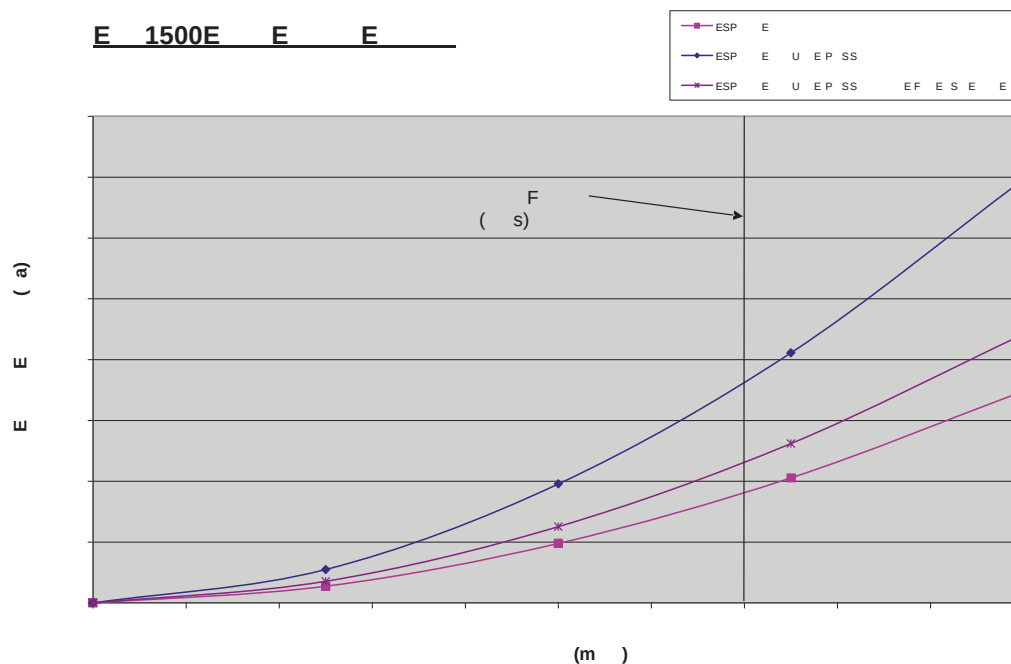


Figure 8 - Graph of ESP 1500EI Pressure Drop

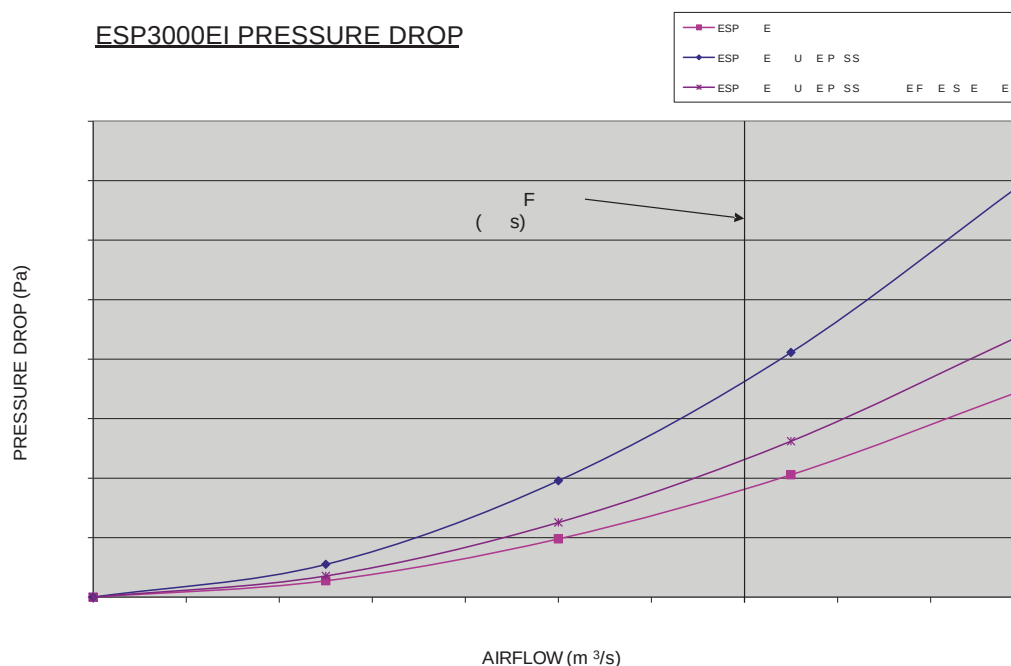


Figure 9 - Graph of ESP 3000EI Pressure Drop

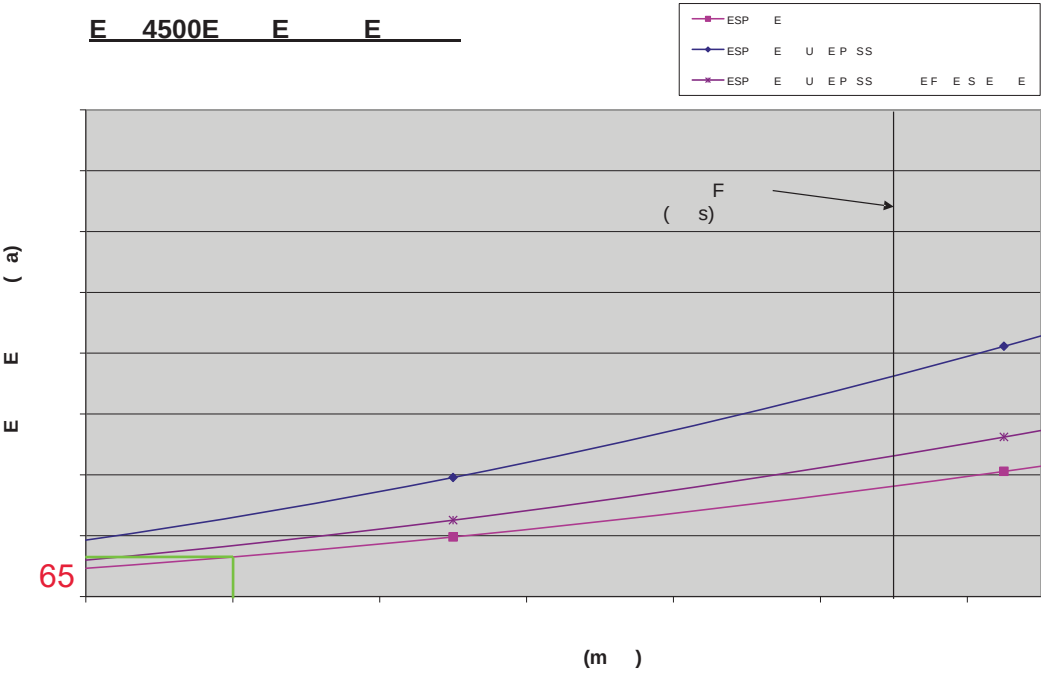


Figure 10 - Graph of ESP 4500EI Pressure Drop

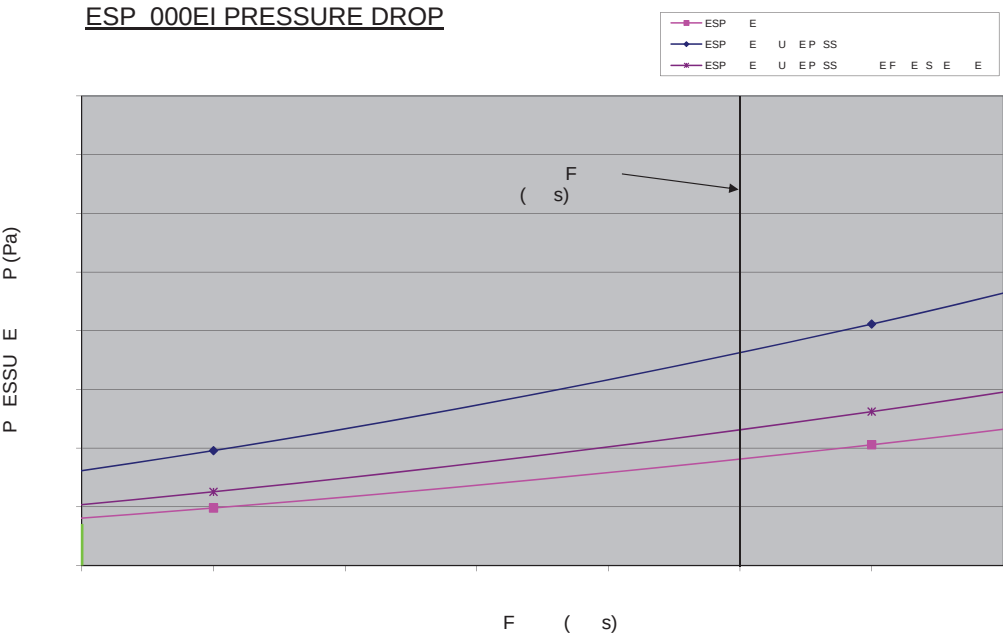


Figure 11 - Graph of ESP 6000EI Pressure Drop

4.4 Installing Single Units

When installing a single Unit, please note the following:

- The Unit should be positioned as close to the cooking source as possible, but please ensure that the fume temperature will never exceed the maximum operational temperature of the Unit, i.e. 60°C.
- Ensure that there is adequate service space around the Unit to enable the removal of the Unit's components.
- Ensure that there is adequate and safe access for servicing and maintaining the Unit.
- Check that the supporting structure is adequate for the weight of the Unit prior to installation. See Technical Specifications for Unit weights.
- The Unit should be mounted in the ducting system.
- The Unit can either be supported by a suspension bracket or suspended by screw rods attached to the top of the Unit. Suspension by screw rods will necessitate drilling holes in the top of the Unit's housing for this purpose.
- The Unit can also be placed on the ground, providing a suitable frame is placed in between the Unit and the floor to allow the system to be drained properly.

We suggest that this frame has a minimum height of 150mm and that you use suitable rubber or neoprene insulation between the Unit and the frame.

- The ducting should be fabricated to ensure as straight and even an airflow as possible, prior to entry into the Unit.
Turbulent air or air directed to one side of the Unit will make the Unit less efficient.

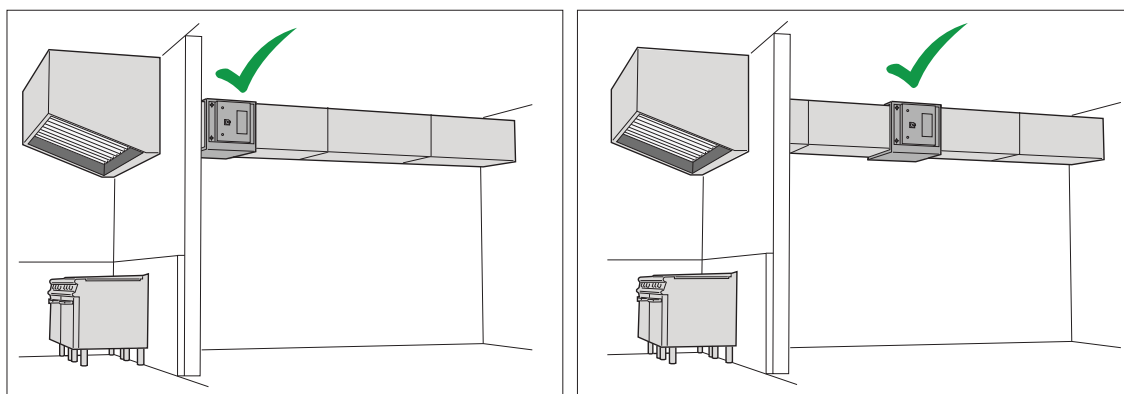


Figure 12 - Preferred Mounting of Filter Unit

Please consult the Wiring Diagram, mounted on the inside of the Door Assembly and shown on page 33 of this manual, when connecting the Unit to the mains. Beware of possible differences in the mains power supply.



INFORMATION

The ESP filter must be interfaced with the extraction fan so that they run in conjunction.

4.5 Installing Multiple Units

Multiple Units can be mounted in series, both vertically or horizontally or in parallel with each other.

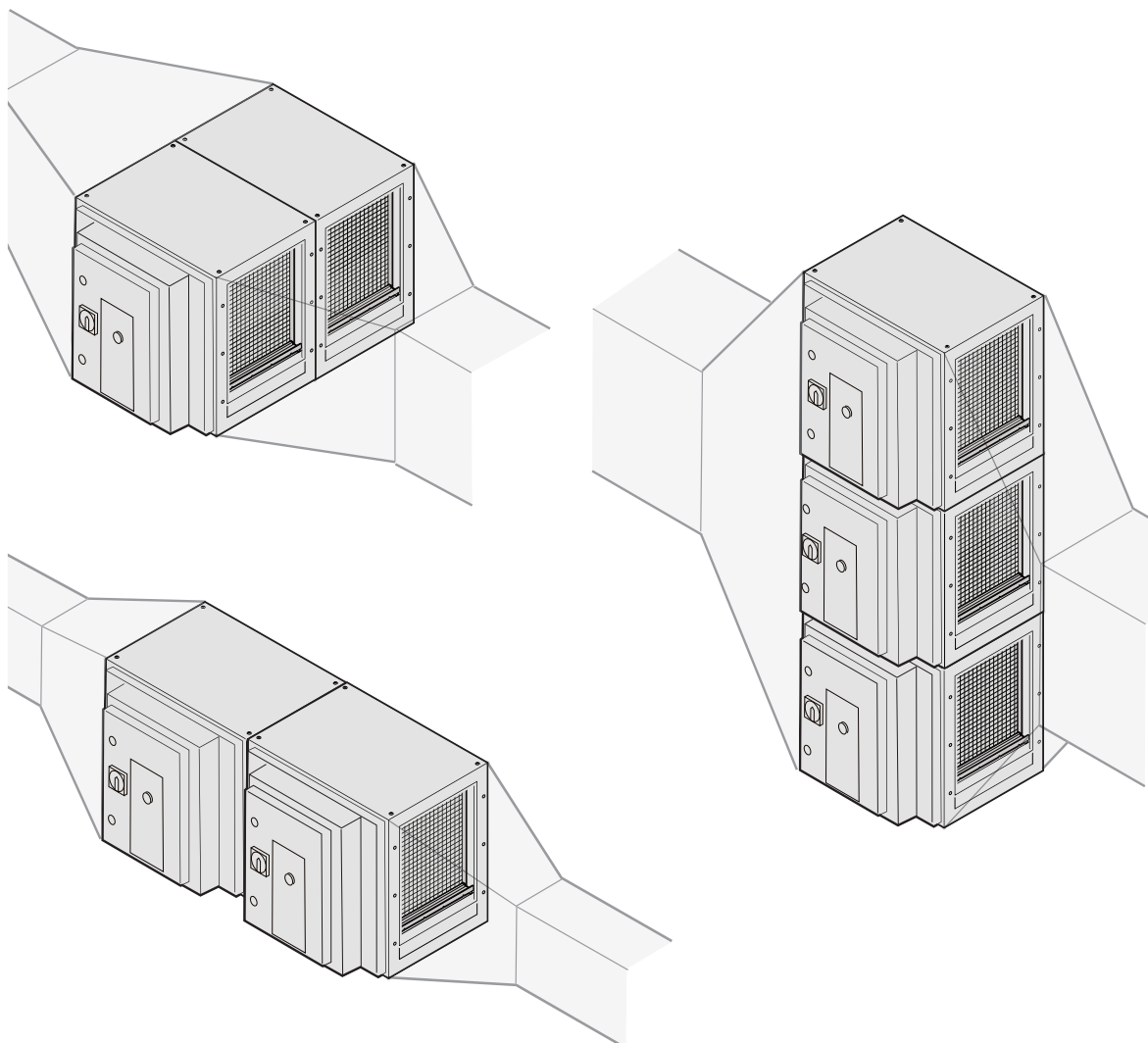


Figure 13 - Multiple Unit Installation Examples

When mounting multiple Units, please note the guidance for installing a single Unit and also note the following:

- The side flanges are pre-drilled to allow combinations of Units to be easily aligned and connected together.
- Locating lugs are also provided on the top of the Units to allow the vertical stacking and connection of combinations of Units. Up to four Units can be stacked on top of each other.



INFORMATION

Never install Units in front of entrances and exits which may be used by the emergency services.

4.6 Changing Airflow Direction / Re-Handling Unit

The ESP can be configured to allow airflow in either direction, i.e. air entering the Unit from the left or right hand side to take account of space constraints or the existing infrastructure.

The following tools will be required to change the airflow's direction:

- 7mm spanner or socket.
- Small adjustable spanner.
- 14 or 13mm socket depending on model.
- Cross head screwdriver.
- Pair of pliers.
- Optionally, a portable electric drill with a socket attachment.

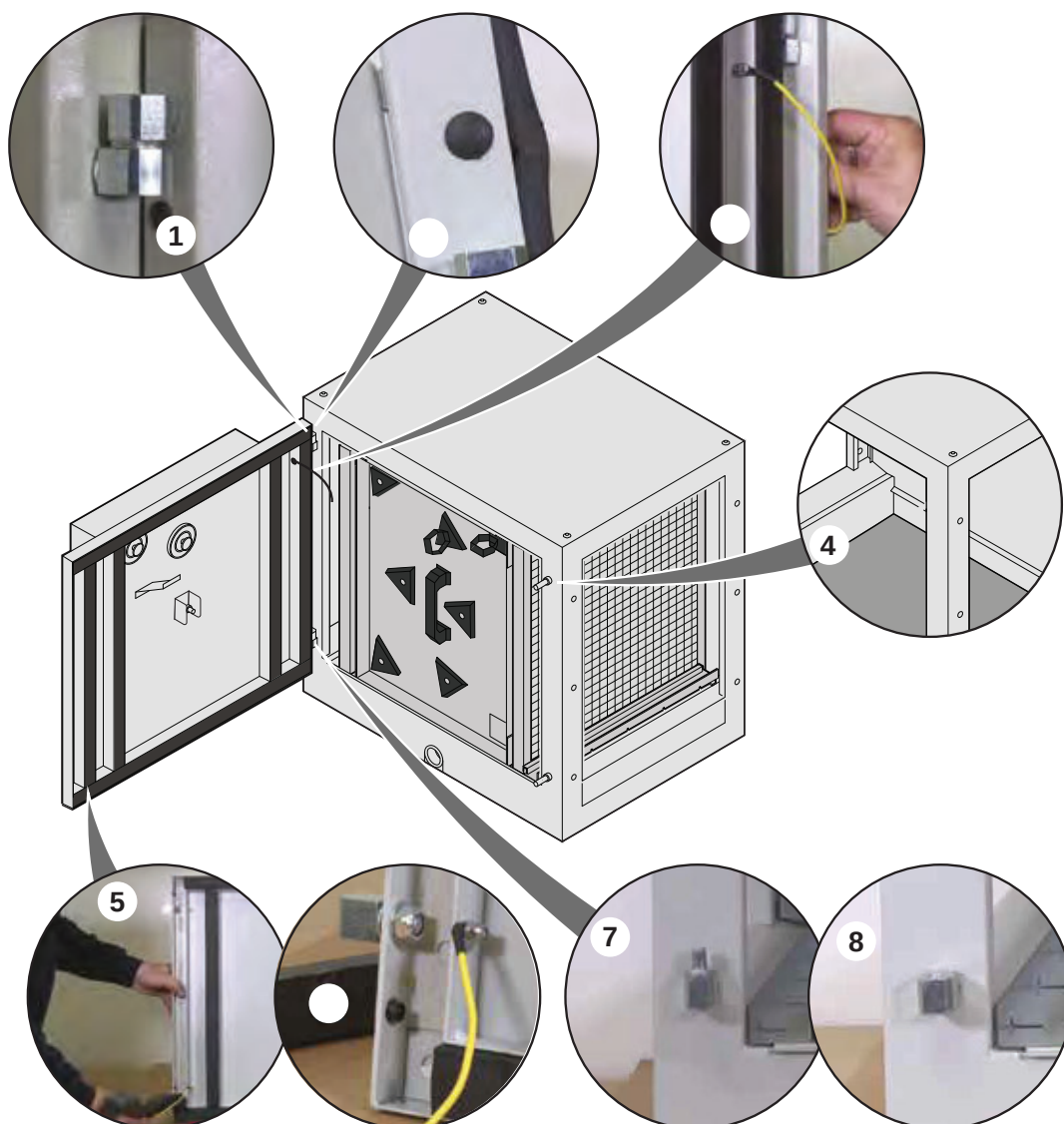


Figure 14 - Re-Handling Process Components

To change the airflow direction:

1. Fully undo the two Star Knobs ❹ (anti-clockwise) and open the Main Door.
2. Remove the Mesh Filters (pre and post), followed by the Collector Cell.
3. Remove the Earth Connection ❸ from the Main Chassis using a 7mm spanner.
4. Lift the Door Assembly off the Two Part Hinge ❶, taking care not to drop the hinge pins ❷ and washers.
5. Remove the hinge pins and washers and put somewhere safe.
6. Put the Door Assembly in a safe place.
7. Undo the Hinge Blocks ❸ using a combination of a 13/14mm socket and adjustable spanner and remove from the Main Chassis.
8. Remove the Threaded Rods ❹ that the Star Knobs were attached to, from the other side of the door aperture, using a deep 13/14mm socket or portable drill with the same attached.



INFORMATION

Note that the two sets of holes on either side of the door aperture are identical.

9. Install the Threaded Rods ❹ and Hinge Blocks ❸ on the opposite sides of the door aperture to their original locations, ensuring that the hinge pin location holes on the hinge blocks face upwards.
10. Turn the Door Assembly through 180° i.e. turn upside down.
11. Remove the Door Assembly Sealing Strip/Rubber Seal ❺.
12. Remove the Grommets ❷ from the holes near the Hinge Blocks ❸.
13. Remove the Hinge Blocks ❸ using a combination of an adjustable spanner and pliers.
14. Replace the Hinge Blocks ❸ into the holes previously occupied by the Grommets ❷, making sure that the hinge pin location holes on both hinge blocks point downwards.
15. Refit the Grommets ❷ into the holes left by the hinge blocks.
16. Relocate the Earth Connections ❸ to the top of the door's frame using either a screwdriver or pliers depending on the model.
17. Replace the Sealing Strip/Rubber Seal ❺.
18. Locate the Hinge Pins ❷ into the hinge pin location holes in the Hinge Blocks ❸ on the main body of the Unit.
19. Rehang the Door Assembly.
20. Re-attach the Earth Connection ❸ to the main body of the Unit.
21. Turn the Collector Cell through 180° (i.e. turn upside down to match the new orientation of the door) and replace in the Unit followed by the Mesh Filters (pre and post).
22. Ensure that the Collector Cell's spring electrical contacts line up with the electrical contact discs on the Door Assembly.

23. Remove the label from the door and replace with a new one in the correct orientation having first cleaned the door's surface.
It will be easier to adjust the new label's location if the door's surface is first wiped over with a slightly wet cloth before the label is attached. Once the water has dried, the correctly located label can be smoothed down.
24. Re-orientate the Rotary Mains Isolator Switch by removing the centre fixing screw and the red cover. Turn the red cover through 180°, replace it on the square centre shaft and secure with the fixing screw.
25. Follow the instructions listed in Operation and Control on page 22 to test the correct functioning of the Unit.



INFORMATION

For additional information, please see the video showing how to change the airflow's direction on the Purified Air website:

www.purifiedair.com

4.7 Connecting the Unit to a Building Management System

The Unit can be connected to a Building Management System (BMS).

- In order to complete this connection, a BMS Connection Kit must be purchased as a separate item.
- Connect the BMS to the Unit using the relay provided on the DIN rail in the Door Assembly.
- Refer to the Wiring Diagram on page 33 for details on how to connect the Unit to a BMS.



INFORMATION

Note that the BMS connection will only provide a Run or Fault signal.

5. Operation and Control

5.1 Control Panel

The Control Panel is part of the Electrical Housing Door and contains the Unit's Rotary Mains Isolator Switch and Run Light Indicator.

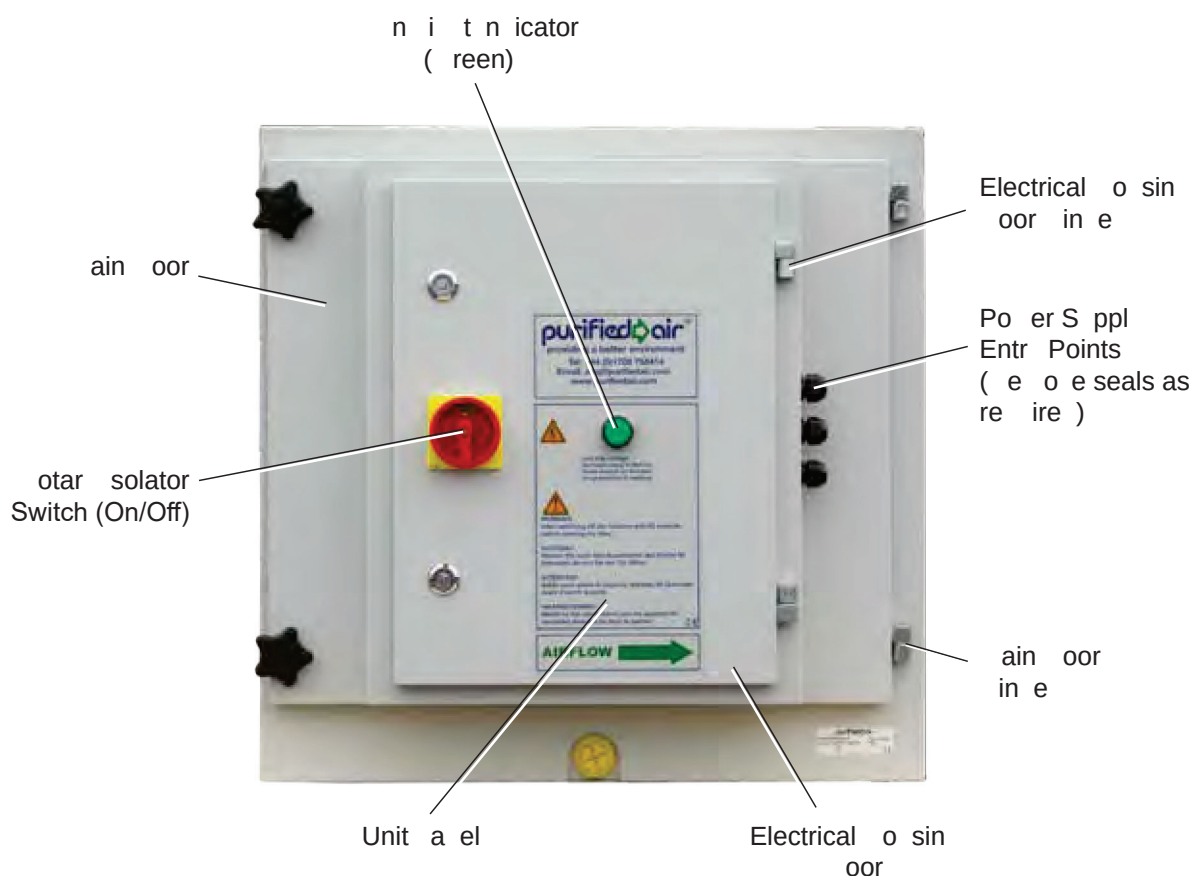


Figure 15 - Control Panel Components

5.2 Before Use

Before use, ensure that all safety precautions have been taken and that environmental conditions are suitable for operation of the Unit (see 1.5 Safety Warnings and Cautions on page 3).

5.3 Switching On

To start the Unit from the Control Panel on the Electrical Housing Door:

1. Turn the Rotary Mains Isolator Switch to the 'On' position.

Note: The green Run Light Indicator will illuminate during normal operation.

Regularly check that the green Run Indicator Lamp is illuminated when using the Unit as it indicates that the electrostatic filter is properly charged.



WARNING

Please contact your service agent if the green Run Light Indicator doesn't illuminate when the Rotary Main Isolator Switch is in the 'On' position.

2. Check that the interfaced extractor fan is also running. Turn off the Unit if this is not the case and investigate further.

5.4 Arcing and Auto-Shutdown

Some arcing within the Unit during operation is normal.

If the problem persists, due to excess debris, the Unit will automatically cycle on and off until the problem clears or until a service visit is carried out.

Note: If excessive arcing occurs, the Unit will automatically shutdown and then restart after a short time.

5.5 Switching Off

To stop the Unit, turn the Rotary Mains Isolator Switch to the 'Off' position.



CAUTION!

After switching off the Unit, wait 60 seconds before opening the door to allow the static electricity charge to dissipate.

6. Fitting Stainless Steel Ioniser Blades

6.1 Fitting Stainless Steel Ioniser Blades to a Collector Cell

Some specifications require solid stainless steel spiked ioniser blades to be fitted, replacing the standard Ioniser Wires.



Figure 16 - Stainless Steel Ioniser Blade

The stainless steel spiked blades are made out of 0.7mm sheet stainless steel with a pressed ridge or spine down the centre.



WARNING!

The Ioniser Blade has sharp points so care should be taken when handling.

This modification can be made in the factory or, alternatively, an engineer can perform the replacement on site.

6.1.1 Replacing Ioniser Wires with Stainless Steel Ioniser Blades on Site

To replace the Ionisers Wires with Stainless Steel Ioniser Blades on site, please see the instructions below:

1. Turn the Rotary Mains Isolator Switch to the 'Off' position and wait for 60 seconds to allow the accumulated static electricity charge to dissipate.
2. Fully undo the two Star Knobs (anti-clockwise) and open the Main Door.
3. Slide out the Pre and Post Filters and, after making a note of the airflow direction arrow, slide out the Collector Cell.
4. Remove the existing Ioniser Wires by unhooking them from the Upper and Lower Ioniser Bars, pulling the unsprung end of each Ioniser Wire against the spring's tension.
Once the Ioniser Wires have been removed from the Collector Cell, there will be eight locating holes in each of the Upper and Lower Ioniser Bars.
5. Take the first Stainless Steel Ioniser Blade and locate its protruding lugs into both the Upper and Lower Ioniser Bars location holes.
6. Once in place, using a pair of long nosed pliers, carefully bend the lug down to secure the top of the Ioniser Blade into position on the Upper Ioniser Bar (see Figure 17 - Fitting Stainless Steel Ioniser Blades on page 25).

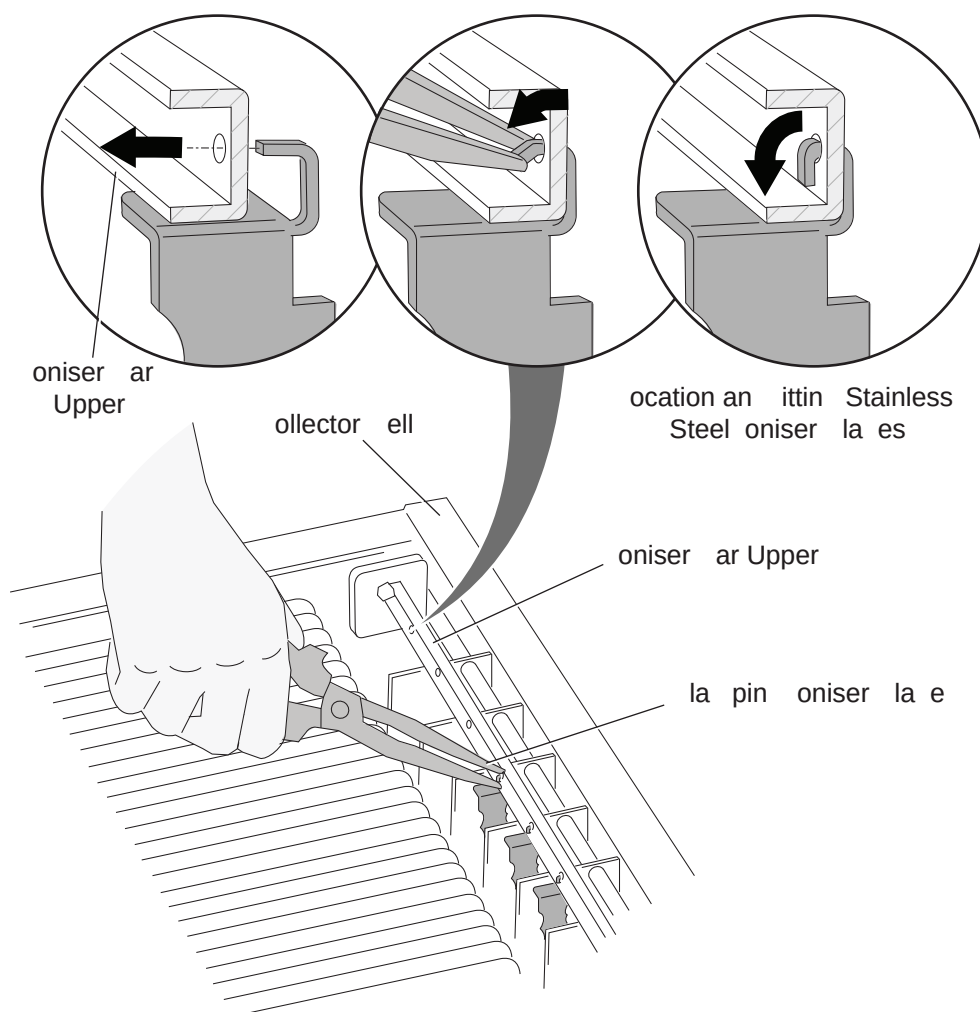


Figure 17 - Fitting Stainless Steel Ioniser Blades

7. Turn the Collector Cell upside down, being careful to keep the Ioniser Blade's lower protruding lug located in the Lower Ioniser Bar's location hole, and carefully bend the lug down to secure the bottom lug of the Ioniser Blade. The blade should now be securely attached to the Collector Cell's Upper and Lower Ioniser Bars.
8. Turn the Collector Cell back upright and repeat the steps 5, 6 and 7 above for each Ioniser Blade until all eight have been securely fitted.

The Collector Cell is now ready to be placed back into the Main Chassis:

1. Replace the Pre and Post Mesh Filters and replace the Collector Cell back into the Main Chassis.
Note: Make sure that the air flow direction arrow, noted in step 3 on page 24, is pointing in the correct direction.
2. Close the Main Door and replace and tighten the two Star Knobs making sure that the Main Door is tightly closed.
3. Turn the Rotary Mains Isolator Switch to the 'On' position.

7. Maintenance and Cleaning

7.1 Introduction

If you carry out the simple cleaning and maintenance described below, at the prescribed intervals, paying attention to the associated Warnings and Cautions, then any problems will mostly be detected and corrected before they result in a total breakdown of the Unit.

The indicated maintenance intervals can vary depending on specific working and local environmental conditions. It is therefore recommended that the Unit is thoroughly inspected annually in addition to the indicated periodic maintenance. Please contact your service agent to arrange this.



WARNING!

Overdue maintenance can lead to fire.

Always switch OFF the Unit and isolate the electric supply before carrying out the activities below.

Do not carry out any service, maintenance or repairs to the Unit before it has been protected against unintended starting by switching off and isolating the electrical supply.

7.2 Maintenance and Cleaning Schedule

Basic maintenance activities can be carried out by the user. Please see the table below for the optimum frequency for such activities.

Note: Other activities are strictly reserved for qualified personnel.

Basic Maintenance Activities	Frequency
Clean the outside of the Unit with mild detergent	Every 6 months
Check the door sealing material (see 7.3.2 on page 27)	Every 12 months
Clean the inside of the Unit and remove dust/ grease from the filter compartment (see 7.3.2 on page 27)	From once a week to once every 3 months depending on the degree of pollution.
Clean the Mesh Pre-filter, ESP Collector Cell and the Mesh Post-filter and check for damage (see 7.3.3 on page 28 and 7.3.4 on page 28)	From once a week to once every 3 months depending on the degree of pollution.

7.3 Cleaning and Maintenance Tasks

Clean or replace the Mesh Filters and Collector Cell and clean the Main Chassis at the prescribed intervals mentioned in Maintenance and Cleaning Schedule on page 26 or:

- If the Mesh Filters and/or Collector Cell are damaged.
- When the Collector Cell starts to make a crackling sound (arcing).
- When the filtering and extraction performance of the Unit starts to decline.

It is a matter of experience to determine when the Unit needs to be cleaned, since the nature and the degree of pollution depends strongly on factors such as the particular location, humidity, and intensity of use etc. Nevertheless, the filters and Main Chassis should be cleaned regularly at intervals ranging from once a week to once every 3 months using the procedures outlined in the sections below:

7.3.1 Removing the Mesh Filters and Collector Cell

Start the cleaning procedure by removing the Mesh Filters and Collector Cell from the Main Chassis:

1. Isolate the Unit from the mains power supply by turning the Rotary Mains Isolator Switch to the 'Off' position.
2. Allow at least 60 seconds for any static electrical charge to dissipate.
3. Double check that the mains power supply has been isolated.
4. Unscrew the top and bottom Star Knobs on the main Door Assembly anti-clockwise and open it.
5. Remove the Mesh Pre-Filter, Collector Cell and the Mesh Post-Filter in this order.
6. Remove the Filter Carrier.

7.3.2 Cleaning the Main Chassis

Having removed the Mesh Filters (pre and post) and the Collector Cell:

1. Remove any accumulated grease from the sump; depending on its viscosity, either via the Drain Plug (see Figure 5 - Electrostatic Precipitator Unit - Main Chassis Components on page 10) or by scooping and scraping it out.
2. Spray the sump with a high quality degreaser and wipe over the sump's surfaces with a suitable cloth or paper towels.
3. Clean the electrical contact points on the inside of the Door Assembly, using a high quality degreaser and a suitable cloth or paper towels, ensuring that they are free of contaminants/grease.
4. Ensure that the rubber door seal is undamaged and free from contaminants/grease, cleaning with warm soapy water if necessary.
5. Clean the Filter Carrier and Backplate, using a high quality degreaser and a cloth, and replace in the Unit.

7.3.3 Cleaning the Mesh Filters (pre and post)

Clean the Mesh Filters as follows:

1. Clean the Mesh Filters (pre and post) in hot water (at approx. 60°C) to which a detergent solution has been added. This treatment can be repeated several times. A pressure washer can also be used to clean the filters.
2. Allow the Mesh Filters to dry completely after cleaning before re-inserting into the Unit.

7.3.4 Cleaning the Collector Cell

Clean the Collector Cell as follows:

1. Clean the Collector Cell in hot water (approx. 60°C) to which a detergent solution has been added.



WARNING

Although the Collector Cell can be cleaned using a pressure washer, extreme care must be exercised to avoid damaging or distorting the plates.

2. Check the Ioniser during washing for broken Ionisation Wires.

Note: If fitted, broken ionisation wires can simply be replaced by hooking the sprung end of the new wire over the support post, pulling the wire against the spring's tension and attaching the other end of the wire to the opposite post, having first removed the broken wire.

3. Whilst washing the Collector Cell, check to see if any of the Collector Cell's plates have been bent.

Note: If a bent plate is found, it can normally be straightened by either carefully applying pressure with a screwdriver or by using a pair of long nosed pliers.

If the Collector Cell is beyond repair, please contact Purified Air to purchase a new one.

4. Allow the Collector Cell to dry completely after cleaning before re-inserting into the Unit.

7.3.5 Replacing the Collector Cell and Pre and Post Mesh Filters

Replace the Collector Cell and pre and post Mesh Filters as follows:

1. Replace the Collector Cell.

Note: If the Unit has more than one Collector Cell, ensure that the electrical connections between them are making contact.

2. Slide the Mesh Filters (pre and post) into their previous positions in the Collector Cell and Filter Carrier.

**INFORMATION**

Ensure that the Collector Cell is correctly orientated with the extraction duct's airflow, as indicated by the arrow engraved on the Collector Cell.

Pay due attention to the position of the contact pin and contact spring on the Collector Cell which should connect with the contact discs on the door when it is closed.

3. Close the Main Door and refit the top and bottom Star Knobs.
4. Tighten the Star Knobs clockwise sufficiently to ensure a good seal between the Main Door and the Main Chassis of the Unit.

Note: It may be necessary to push the Main Door inwards, against the seal, onto the Main Chassis of the Unit whilst tightening the Star Knobs to enable them to be tightened sufficiently to ensure an adequate seal.

5. Switch the Unit On as normal. The green Run Light Indicator should illuminate.

**INFORMATION**

After the Unit is turned on, you may briefly hear a clicking or arcing as the plates in the Collector Cell build up a charge. This is perfectly normal.

**WARNING**

Should the clicking or arcing persist or the green Run Light Indicator go out, the Unit has a fault.

In this case, switch off the Unit and consult a qualified service technician.

7.4 Servicing

Purified Air or their designated distributor will be happy to carry out regular servicing of the Unit and offer Preventative Maintenance Contracts for all installations of their equipment.

Please contact their Head Office for full details:

service@purifiedair.com

Freephone: 0800 018 4000

8. Troubleshooting

If the Unit does not function correctly, consult the checklist below to see if you can correct the error yourself.



INFORMATION

A number of problems in the checklist below can also be caused by defects in other equipment connected to the Unit. This manual only deals with problems and solutions directly related to the Unit itself.

Problem	Possible Cause	Solution
Insufficient Extraction Capacity	Mesh Filters clogged or saturated.	Clean the filters.
	A breach/hole in the ducting.	Check and replace sealing material/repair hole.
Dust or smoke from the extraction outlet and/or green Run Light Indicator is not illuminated.	Collector Cell is saturated or mounted incorrectly causing short-circuiting.	Clean the Collector Cell and mount correctly.
	Poor/dirty electrical contacts in the Collector Cell.	Check and clean/repair.
	Short-circuit in the Collector Cell (caused by bent plates).	Check and repair.
Unit makes a cracking sound (= short circuit).	Collector Cell incorrectly mounted.	Mount correctly.
	Collector Cell heavily polluted.	Clean Collector Cell.
	Collector Cell not totally dry.	Allow thorough drying after cleaning.
	Bent Collector Cell plates.	Repair.
	Bent or broken ionisation wires (see 6. Fitting Stainless Steel Ioniser Blades on page 24).	Replace.
	Metal particles in Collector Cell.	Clean Collector Cell.
Unit switches off or will not start when clean collectors are installed during service.	The collector cell could appear dry but could have traces of water behind the insulators or secreted within the collector.	Run the extract system for one hour with the ESP switched off. This should allow any excess water to evaporate. After this period, try to restart the unit. If it still fails to start contact the supplier.



CAUTION

Should it not be possible to correct the error, consult a qualified service engineer.

9. Spare Parts List and Components Illustration

Item Number	Item Description	Part Number
	Collector	
1	Collector Cell Unit	ESP-1601-CC
2	Mesh Filter Element	ESP-1501-MF
	Collector Cell	
3	Ioniser Wire with springs (8 per pack) (Not Shown)	ESP-1602-IW
4	Push Button Brass HV contact	ESP-1603-BB
5	HV Spring contact	ESP-1604-SC
6	Insulator HV Black Thermoset Square	ESP-1605-IS
8	Stainless Steel Spiked Ioniser Blades (8 per pack) (Not Shown) (see 6 - Fitting Stainless Steel Ioniser Blades on page 24)	ESP-1607-SI
	Door	
9	Complete ESP Door & Electronics	ESP-1701-CD
10	High Voltage Power Supply (HVPS) including HV cable (2 parts) + wiring loom for post 2014 models.	ESP-1750-HV
11	Door Hinge (15mm) (main door & electrical door)	ESP-1702-DH
12	Door safety interlock switch	ESP-1703-DS
13	Rotary Mains Isolator Switch	ESP-1704-MS
14	HV Output Terminal Contact Disc on door (ceramic)	ESP-1705-OT
15	Clear PVC dome covers for HV output terminals.	ESP-1706-DC
16	HV Cable (2 pcs per set) (Not Shown)	ESP-1707-HC
17	LED Run Lamp (green 230V)	ESP-1708-LG
18	Door Star Knobs	ESP-1709-SK
19	Drain Plug	ESP-1710-DP
20	Rubber Door Seals (set of 6)	
21	Pictograms, Warning and Instruction Labels	
	Upgrades	
	HVPS (PWM200) replaces components in older models such as HF Driver, HV Transformer & HV short circuit protector.	These older parts are all now superseded
	HVPS Conversion kit for pre-2008 and pre-2014 Models.	ESP-HVPSCONV1
	HVPS Conversion kit for post-2014 Models. (ESP ____ EI)	ESP-HVPSCONV2
	BMS Kit fitted prior to leaving factory	ESP-1801-BMS
	BMS Kit fitted on site	ESP-1802-BMS

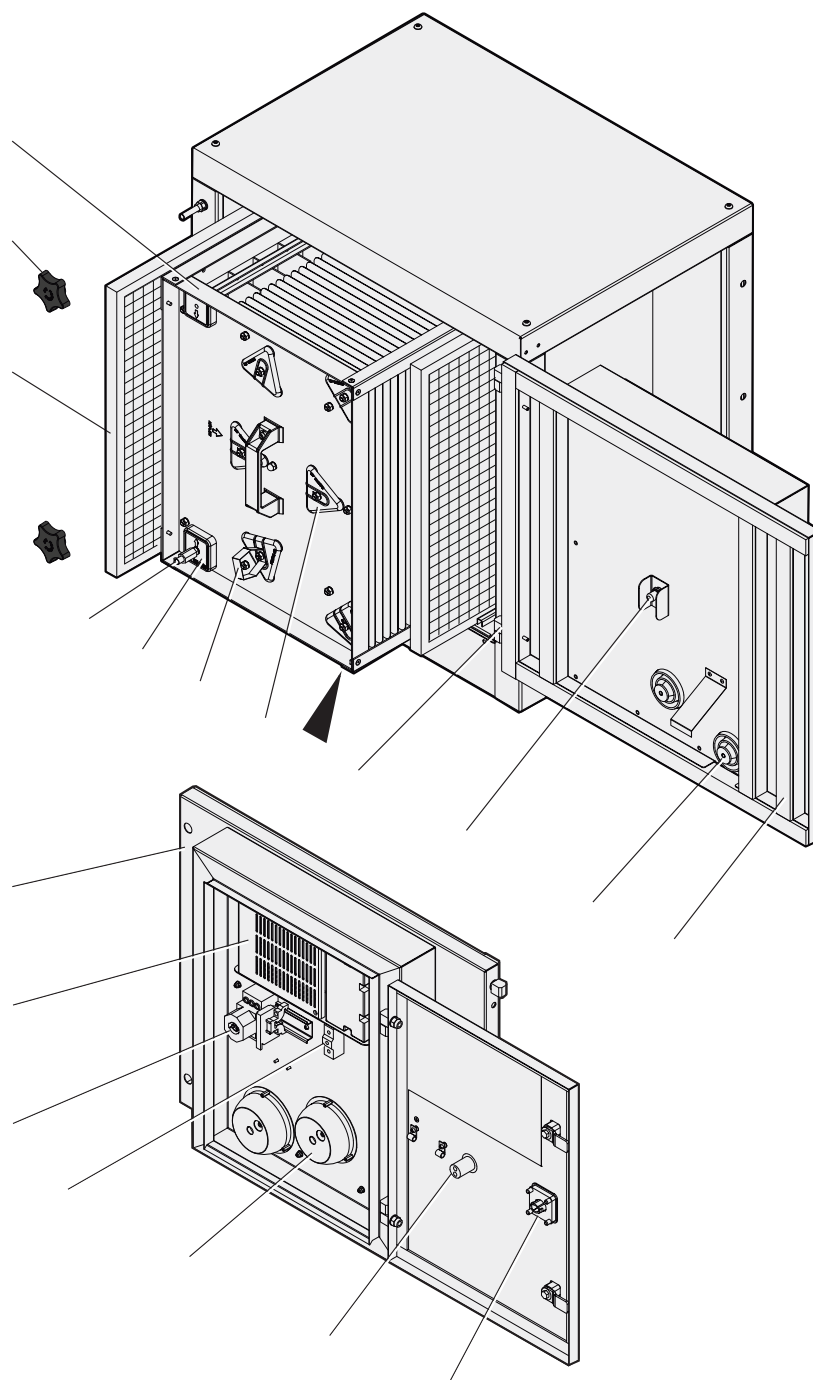


Figure 18 - Parts List Components Illustration

9.1 Spare Parts Ordering

All parts listed in the 9. Spare Parts List and Components Illustration on page 31 are available as spare parts.

Please quote the Part Number when ordering.

10. Wiring Diagram

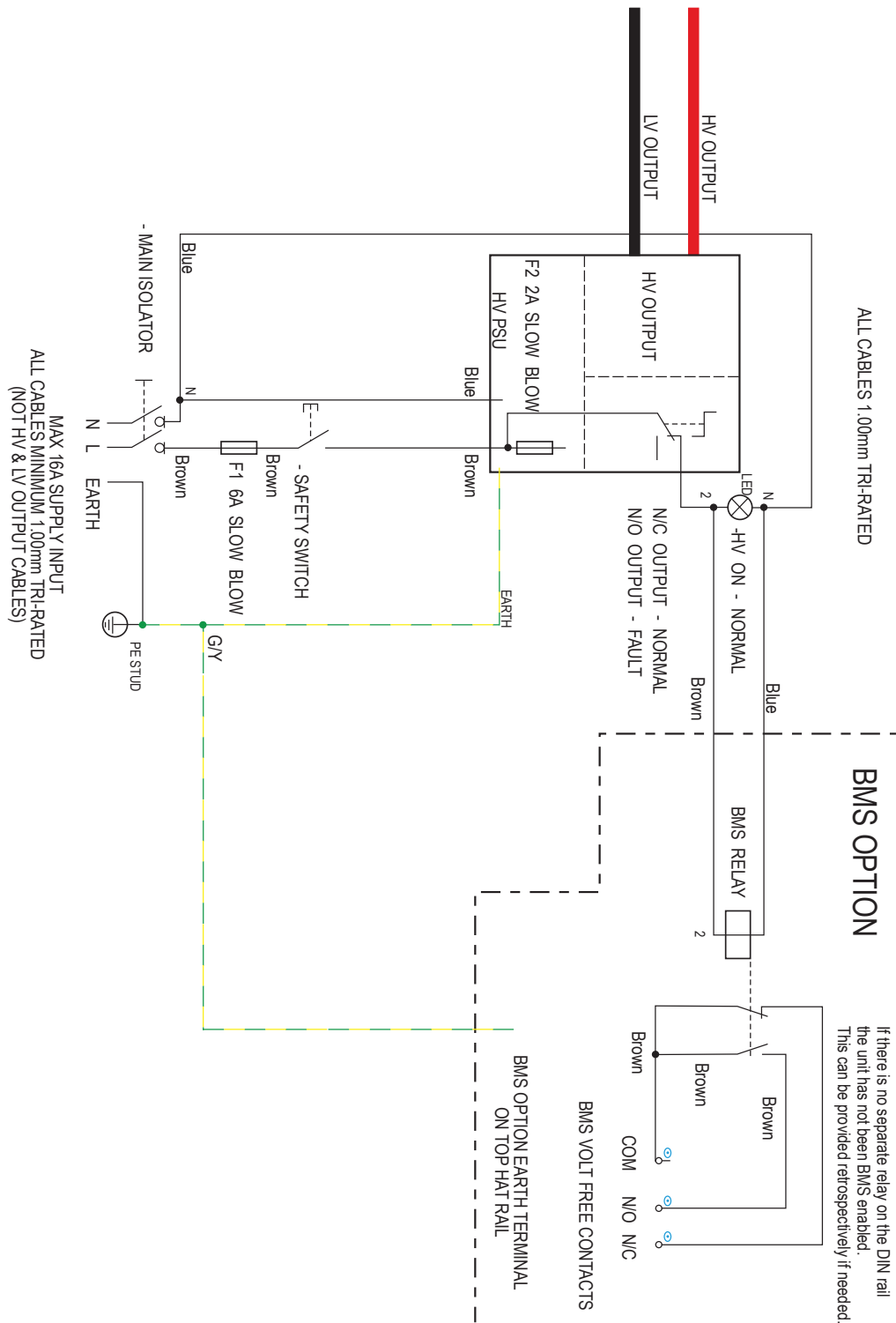


Figure 19 - Unit Wiring Diagram

11. Equipment Disposal



11.1 Packaging Material Disposal



INFORMATION

The Unit's Packaging materials are manufactured from recyclable materials in accordance with applicable local regulations.

The purpose of the packaging is to protect the Unit during transport. It consists of the following substances that can be reused:

- Cardboard (corrugated)
- Wood (untreated)

Do not dispose of the packaging material as general industrial waste.

11.2 Used Unit Disposal

Units which you would like to dispose of may still contain valuable substances and materials. Do not dispose of the Unit as general industrial waste.

12. Contact Details

At Purified Air, we pride ourselves on our excellent levels of customer service and maintenance.

12.1 Nationwide Coverage in the UK

We can offer nationwide coverage with teams of directly employed service engineers working out of our UK hubs.

For all UK Service and Maintenance enquiries, please contact via:

service@purifiedair.com

0800 018 4000

12.2 Service and Maintenance Contracts

With every installation, we offer the opportunity to sign up to one of our service and maintenance contracts. These are structured to suit individual needs, on a post pay basis with the customer only being invoiced after each service, saving them both time and money against ad hoc servicing requests.

12.3 Dependability

Whether you have our commercial kitchen exhaust filtration equipment in your restaurant, cafe or take away, you can rest assured that we will always be there when you need us.

12.4 Global Sales

For all installations of our equipment outside of the UK, please refer back to your designated distributor.

13. Warranty Statement

Your new Electrostatic Precipitator is guaranteed against the cost of breakdown repairs for one year from the date of the original purchase.

The manufacturer does not accept any liability for damage to the Unit or personal injury caused by non-observance of the safety instructions in this manual or negligence during the installation, use, maintenance and repair of the models mentioned on the cover of this manual and any associated accessories.

What is covered?

- Repairs necessary as a result of faulty materials, defective components or manufacturing defect.
- The cost of functional replacement parts, but excluding consumable items.
- The labour costs of a Purified Air approved repairer to carry out the repair.

What is not covered?

- Transit, delivery or accidental damage or misuse and abuse.
- Any installation which fails to meet the installation, location and operating requirements and parameters outlined in this manual.
- Manufacturing defects only affecting the Unit's cosmetic appearance.
- Consumable items including but not limited to pre and post Mesh Filters, Collector Cell and Ionisation Wires (see 6. Fitting Stainless Steel Ioniser Blades on page 24).
- Repairs required as a result of unauthorised repair or installation by anyone other than a Purified Air approved installer.
- Any damage caused to the Unit by its use by anyone other than authorised, trained and qualified users or personnel under the supervision and responsibility of authorised, trained and qualified users.
- Any damage caused to the Unit by incorrect servicing procedures.
- Use of the Unit in any application which is not specifically mentioned in this manual or approved, in writing, by the manufacturer.
- The guarantee is applicable only to new products and is not transferable if the product is resold.

Purified Air disclaims any liability for incidental or consequential damages.

The guarantee does not in anyway diminish your statutory or legal rights.

Please keep your purchase receipt or other proof of purchase in a safe place. You will need to have it should the product require attention under guarantee.

14. Certification

14.1 EC Declaration of Conformity

Purified Air Limited
Company
Address
Essex

UK
Fax
Email: info@purifiedair.co.uk
www.purifiedair.co.uk

purifiedair

CE

Declaration of Conformity

Document Number: Doc ESP 1201

Purified Air Limited, at a meeting, hereby declares that the products described below comply with the requirements of the relevant EU Directives.

Product Name: Electrostatic Precipitator
Product Code: ESP 1201

Product Description: Purified Air

Product Reference: ESP 1201

Product Compliance: as assessed in respect of the essential requirements and in accordance with the relevant standards.

Technical file or test report is retained at the address:



Gareth Smith
Technical Director
Purified Air Limited
January 2016

Figure 20 - EC Declaration of Conformity



FreePhone (UK Only) 0800 018 4000
International +44 1708 755414

Purified Air Limited. Lyon House, Lyon Road, Romford, Essex. RM1 2BG

www.purifiedair.com | enq@purifiedair.com

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 m³/sec of air flow**
- **UV-O 1000 which handles up to 2 m³/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.

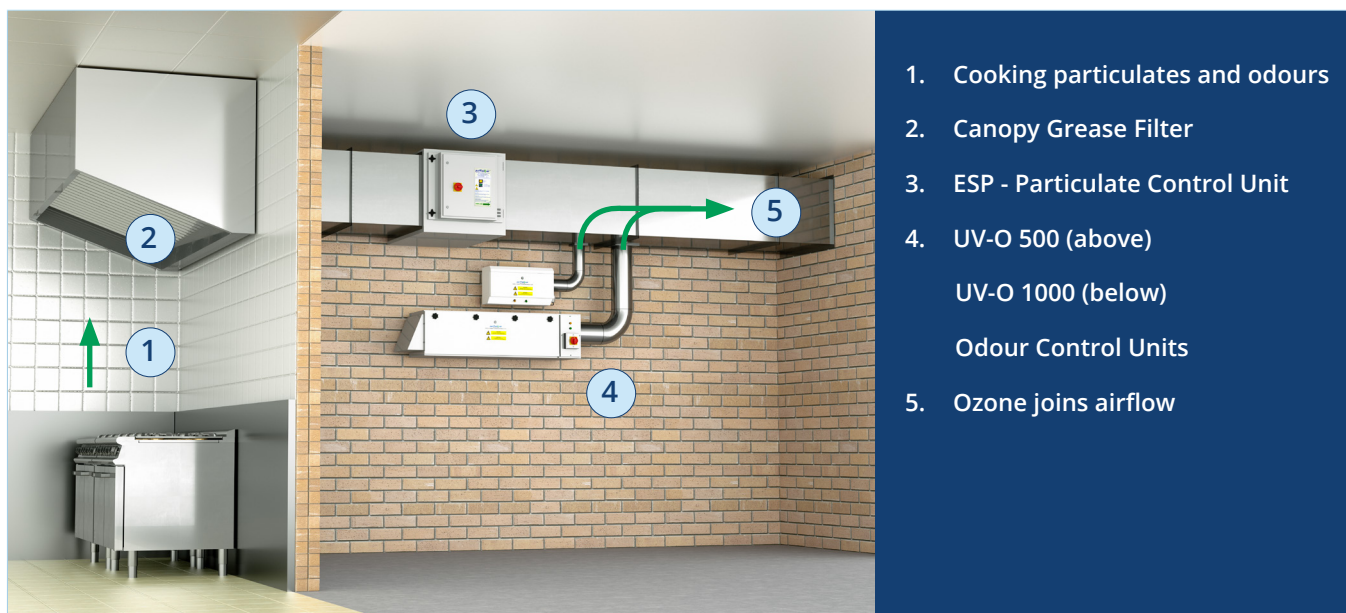
For optimum performance we would recommend between 2 & 6 seconds of dwell time to allow the ozone to work effectively upon the malodorous gasses within the duct.



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	140 Watts	700 Watts
Max Air Volume	up to 1m ³ /sec	up to 2m ³ /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.

Attenuator Schedule

The Factory Manchester Kitchen Extract

Schedule Date
17/05/2023
Caice Reference
124796/Q00004

Notes

1. All products shall be supplied by Caice or equal and approved, as per their file reference 124796, contact Frazer Robinson on frazer.robinson@caice.co.uk or call 07585 441669.
2. The Contractor shall order the attenuators scheduled below, and shall send finalised drawings and equipment noise levels to the attenuator supplier to check the selections prior to manufacture.
3. The attenuator supplier shall then undertake acoustic calculations to ensure that the attenuators achieve the specified noise criteria, based upon the finalised information.
4. A Technical Submittal comprising acoustic calculations and a finalised schedule of attenuators shall then be issued to the Consultant for final approval.
5. If an alternative attenuator supplier is proposed then the Contractor shall allow for them to undertake witnessed tests to prove their claimed insertion loss performance in a UKAS accredited BS EN ISO 7235: 2009 test facility, for two sample units. This shall be undertaken prior to order.
6. Pressure losses are stated in accordance with ISO 7235, which is based on laminar airflow conditions. The system designer shall make allowance for increased attenuator pressure losses where turbulent airflow conditions exist on the attenuator entry or exit.
7. Unless stated otherwise all attenuators shall be constructed as follows: Galvanised sheet steel casings with 30mm profile flanges that are fully compliant with DW/TM1 at a high pressure rating (+2000/-750Pa). Profile flanges shall be compatible with Doby, Mez & Metu flanging systems. Elements shall be installed in the vertical plane, with side elements provided as standard, and all elements shall have aerodynamic inlet and outlet fairings. Element facings shall be constructed from expanded galvanised steel mesh with fibre glass tissue bonded to the inner face. Mineral wool infill shall be overpacked to minimise voids due to settlement. Attenuator ends shall be protectively wrapped, and all attenuators shall be delivered to site on pallets and individually labelled.

Product Reference	Product Description	Product Code	Width	Dimensions (mm) Height	Length	Volume (m³/s)	Pressure Loss (Pa)	Quantity	Noise Criteria	Features
~~AT001-1~~	~~KEF-WH-08-01 Exhaust~~	~~Rectangular SG01H/3C/L/SM~~	~~900~~	~~925~~	~~1200~~	~~0.60~~	~~54~~	~~1~~	~~60dB(A) at 5m~~	~~Rectangular attenuator & Horizontal elements~~
~~AT001-2~~	~~KEF-WH-08-01 Exhaust~~	~~Rectangular SG01V/3C/L/SM~~	~~925~~	~~875~~	~~900~~	~~0.60~~	~~50~~	~~1~~	~~60dB(A) at 5m~~	~~Rectangular attenuator~~
~~AT001-3~~	~~KEF-WH-08-01 Exhaust~~	~~Circular CG01P/2L/L/M~~	~~650~~	~~dia~~	~~1500~~	~~3.60~~	~~41~~	~~1~~	~~60dB(A) at 5m~~	~~Circular attenuator, Fitted with central pod, End rings with pattern A drillings & Medium pressure rating (+1000/-750Pa)~~
AT001-4	KEF-WH-08-01 Exhaust	Circular CG01P/2M/L/M	800	dia	1600	3.60	22	2	60dB(A) at 5m	Circular attenuator, Fitted with central pod, End rings with pattern B drillings & Medium pressure rating (+1000/-750Pa)
~~AT002-1~~	~~KEF-WH-08-01 Exhaust~~	~~Rectangular SG01H/3C/L/SM~~	~~1400~~	~~1025~~	~~1200~~	~~0.60~~	~~54~~	~~1~~	~~65dB(A) at 1.5m~~	~~Rectangular attenuator & Horizontal elements~~

Attenuator Schedule

The Factory Manchester Kitchen Extract

Schedule Date

17/05/2023

Caice Reference

124796/Q00004

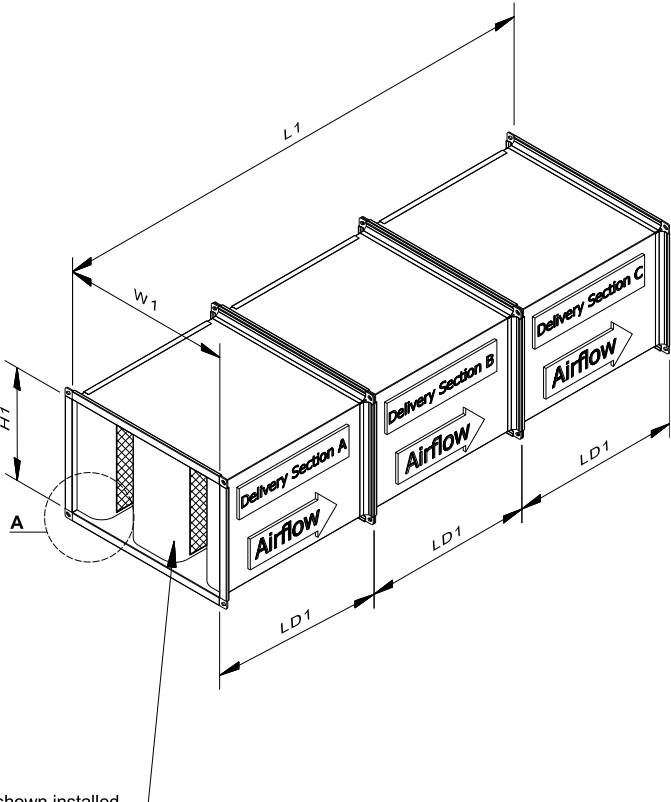
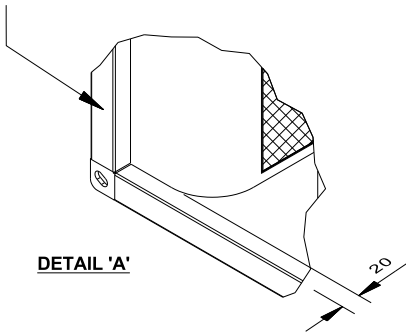
Product Reference	Product Description	Product Code	Width	Dimensions (mm) Height	Length	Volume (m³/s)	Pressure Loss (Pa)	Quantity	Noise Criteria	Features
~~AT002-2~~	~~KEF-WH-08-01 Extract~~	~~Rectangular SG01V/3C/L/SM~~	~~1250~~	~~160~~	~~1200~~	~~1.20~~	~~51~~	~~0~~	~~55dB(A) at 1.5m~~	~~Rectangular attenuator~~
AT002-3	KEF-WH-08-01 Extract	Rectangular SG01V/2C/L/SM	1250	1735	1200	3.60	33	1	55dB(A) at 1.5m	Rectangular attenuator & Medium pressure rating (+1000/-750Pa)

SG Splitter Attenuator with Profile Flanges

The Factory Manchester Kitchen Extract (124796/Q00004)



Profile flanges suitable for MEZ, DOBY or METU flanging systems. See table for flange size.



Splitter elements set back in casing by 20mm and provided with aerodynamic bullnoses on inlet and outlet as shown. However if item has non-standard elements refer to Attenuator Product Code Definitions for details.

Splitter elements shown installed in the vertical plane. Refer to item Product Code for actual orientation.

Notes

- Assembly of multiple piece items must be in accordance with the delivery section and airflow label layouts, typically as shown opposite. Assembly by others.
- Where LD1 exceeds 1250 each delivery section has an intermediate central flange.
- See NDL in table below for number of delivery sections in length per item.
- Nuts, bolts, flange clamps and gasket between flanges by others.
- Tolerances on W1 & H1 +/- 2mm.
- All dimensions in mm.
- Identification labels stating Product Reference and Description provided on all delivery sections.
- Attenuators may be delivered in 1, 2, 3 or 4 sections in length (3 shown).
- Delivery section and airflow labels only provided on multiple piece items.
- W1 and H1 dimensions are inside case.
- Tolerances on LD1 +/- 3mm.

Product Reference	Product Code	Primary Dimensions			Delivery Data		Flange Size (mm)	Paint Colour	Weight (kg)	Qty
		W1	H1	L1	LD1	NDL				
AT001-1	SG01H/3C/L/SM	900	925	1200	1200	1	30	(Not painted)	108	1
AT001-2	SG01V/3C/L/SM	920	970	900	900	1	30	(Not painted)	85	1
AT002-1	SG01H/2C/L/SM	1400	1025	1200	1200	1	30	(Not painted)	151	1
AT002-2	SG01V/3C/L/SM	1200	430	1200	1200	1	30	(Not painted)	100	3
AT002-3	SG01V/2C/L/SM	1250	1735	1200	1200	1	30	(Not painted)	227	1



- Identification labels stating Product Reference and Description to be provided on all items.
- Tolerance on L1 +/- 2mm.
- All dimensions in mm.
- Casings may be either plain or spiral wound.
- Tolerance on ID +/- 2mm.

[illegible]



- Identification labels stating Product Reference and Description to be provided on all items.
- Tolerance on L1 +/- 2mm.
- All dimensions in mm.
- Casings may be either plain or spiral wound.
- Tolerance on ID +/- 2mm.

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Definitions

"The Company" means CAICE ACOUSTIC AIR MOVEMENT LTD.

"The Customer" means the giver of the Purchase Order the acceptance of which by the Company subject to the terms and conditions herein contained gives rise to this contract.

"The goods" means the product, products, or other articles and services specified in the Purchase Order.

"The Order Value" means the sum on the Purchase Order Acknowledgement related to the Purchase Order accepted by the Company.

"Standard Delivery Service" means a single delivery, with no allowance for any constraints or special conditions, made on a 45 foot articulated vehicle using a curtain-side trailer (typical load capacity of 26 pallets or equivalent pallet spaces).

"Standard Delivery Timing" means any weekday during the hours of 08:00 to 16:00.

"Normal Working Hours" means any weekday during the hours of 08:00 to 17:00.

"Standard Pallet" means Wooden Pallet 1200mm x 1000mm.

"Special Delivery Service" means non standard delivery service detailed in section 3(k).

"MOFFETT" means vehicle with truck mounted forklift.

"HIAB" means vehicle with loader crane.

"Tail-Lift" means a mechanical device permanently installed on the rear of a vehicle designed to facilitate the materials handling of goods from ground level or a loading dock to the level of the vehicle bed, or vice versa.

"FORS" means Fleet Operator Recognition Scheme FORS - Aligned to other schemes. Click for more details.

"External Suppliers" Suppliers of materials supplied to Caice for the execution of the works.

Contract Terms

(a) All Purchase Orders accepted shall be undertaken in accordance with and subject to the terms and conditions contained herein.

(b) All contracts shall be deemed to be on a Supply Only basis.

(c) All additions to or variations of these terms and conditions whether or not contained in any document provided by the Customer or its Agent shall be inapplicable unless specifically accepted in writing by an authorised representative at director level of the Company.

Delivery and Risk

(a) Any time or date named for delivery by the Company is an estimate only, and although the Company will use its best endeavors to comply with delivery dates the Company shall not under any circumstances be liable for the consequences of any delay and the customer shall not be entitled to repudiate or cancel the contract as a result of such delay. The Company reserves the right to withdraw or suspend delivery of any goods ordered if compelled to do so by any cause outside its control.

(b) Where goods have been manufactured to an agreed programme and the site is unable to accept delivery the Company reserves the right to charge for the vehicle cancellation charges and the storage costs incurred. Before a shipment on a revised date the Company would require a purchase order or official instruction to cover any costs incurred. The Company require a minimum of 6 full working days notice prior to the originally agreed delivery date for consignments being delivered during normal working hours to mainland England and Wales. Consignments being delivered outside of this geographical area require a minimum of 8 full working days.

(c) Unless the Customer shall otherwise nominate delivery shall be considered to have taken place when the goods are delivered by or on behalf of the Company to the Customer at which time risk in the goods shall pass to the Customer. If the Customer should nominate a carrier delivery shall be considered to have taken place upon the goods being delivered to the nominated carrier.

(d) Unless otherwise stated delivery will be by our Standard Delivery Service. Delivery vehicles are not fitted with tail-lifts. Smaller consignments (up to 4 pallet spaces) may be sent on a pallet network service (Palletline or similar) at the discretion of The Company.

(e) Unless otherwise stated delivery will be on our Standard Delivery Timing. The Company will advise the Customer of the intended date of delivery by issuing a delivery advice note, usually with 2 -3 working days notice.

(f) Dependant on size, the goods may be delivered in boxes/cartons/on pallets or directly onto the vehicle.

(g) Shortage or damage to goods must be notified by the Customer in writing, within 48 hours of the delivery date to the Company, otherwise no claim can be considered.

(h) Unless otherwise stated the Customer is responsible for the cost and attendance required for offloading, storing, distribution and hoisting of the goods to our work area and must ensure that suitable facilities exist at the delivery destination for safe handling of the goods with consideration to size, weight etc. Where appropriate a forklift truck is recommended. Where a crane is used for offloading, suitable equipment such as load bars, spreader bars etc. must be used to negate lateral loads and to prevent damage to pallets or the goods thereon. Pallets will not be supplied pre-stopped. The Company must be advised and notified by the Customer of a palletised specification that varies from Standard Pallets.

(i) A maximum of 1 hour waiting time is allowed in the delivery of goods, beyond which time deliveries will be withdrawn from site and any additional costs incurred will be borne by the Customer. No waiting time is allowed for deliveries using pallet network service, should waiting time occur then deliveries will be withdrawn and any additional costs incurred will be borne by the Customer.

(j) Unless otherwise stated, the Customer is liable for the cost and provision of any temporary closure of a public road or use of adjacent public land required to facilitate the delivery of goods, all arrangements to be made by the Customer.

(k) The following Special Delivery Services are available on request at additional cost:

- Multiple, split deliveries to accommodate site programme and/or available site storage
- Delivery vehicles Specifics : vehicles with FORS certification, non-articulated vehicles (24 foot rigid curtainsider : typical load capacity of 12 pallets or equivalent pallet spaces) Tail-Lift, MOFFETT or HIAB equipped vehicles, small delivery vehicles.
- The Company will need to be advised by the Customer of alternative vehicle scheme requirements and site specific requirements for packing and deliveries. This will all be reviewed and costed on a site by site/project by project basis.
- Delivery timing specifics : specific day/multiple delivery dates/a.m or p.m. deliveries, or specific time slots/delivery out of normal working hours stated above, at weekends, or on Public/Bank Holidays/Security clearance deliveries where driver and/or vehicle details are required.
- Packaging and Loading Specifics : Packing of equipment in specific batches or grouping/Loading of equipment on vehicle in a specific order, provision of pallets suitable for craneage.

Insurance

Save where the goods are delivered to the Customer's nominated carrier the goods will be insured by the Company from the date of dispatch until delivery, or if being sent by post, until the acceptance at the Post Office, and proof of acceptance at the Post Office shall be by Post Office receipt. This condition shall not apply if the customer nominates the method of carriage.

Non-Delivery

The Company must be advised of non-delivery, items have not arrived at the the agreed destination within 48 hours of the date of delivery as shown on the Company's advice note.

Storage Charges

The Company reserves the right to charge for storage costs incurred should confirmed delivery dates be delayed.

- Per standard pallet 1000mm x 1200mm(or part) £5.00 per week or part thereof.
- Non-Standard pallet space will need to be confirmed on a project specific basis.

Handling Charges in and out of storage

Should the Customer require goods to be stored, handling charges in and out of storage will be issued on an individual project basis.

Inspection

The Customer shall inspect the goods immediately on delivery thereof, and shall within 48 hours from such inspection give notice in writing to the Carrier and to the Company of any matter or thing by reason whereof the Customer alleges that the goods are not

Terms & Conditions

Supply Only



in accordance with the Contract. If the Customer shall fail to give such notice the goods shall be deemed to be in all respects in accordance with the contract and the Customer shall be bound to accept and pay for the same accordingly.

Price

- (a) The amount payable by the Customer to the Company is the Order Value, together with the reimbursement of any cost incurred by the Company arising from changes to the order requested by the Customer.
- (b) Unless otherwise stated the Order Value is exclusive of Value Added Tax (VAT) and all other duties which may from time to time be levied.
- (c) In accordance with HMRC regulations, all reduced rate VAT or Zero-rated VAT transactions will require the appropriate documentation to be provided by the Customer to substantiate the VAT liability, otherwise VAT will be charged at the prevailing standard rate.
- (d) Estimates and quotations indicate prices ruling at date of issue and are subject to review from date of issue.

Payment

- (a) Until a credit account in the Customer's name has been approved in writing by the Company, invoices will be issued by the Company to the Customer on an 'immediate payment' basis, that is to say payment must be made by the Customer to the Company before manufacture or delivery of the goods by the Company. A payment structure must be agreed and in place on receipt of order and prior to any commencement of work, upfront payment will be required to balance any shortfall in credit cover. Any invoice raised will remain a tax invoice in respect of VAT.
- (b) In the event of cover on the Customer's credit account being revoked the Company reserves the right to revert to an 'immediate payment' basis.
- (c) With the exception of upfront payment agreements, terms of payment will be 30 days from date of invoice unless otherwise stated in writing elsewhere.
- (d) In the event of any default by the Customer in payment for the goods on the due date then the Company may without prejudice to any of its rights and remedies hereunder charge interest at the rate of 2% per month on any amount overdue for payment, and may suspend further deliveries to the Customer (with or without cancellation of the balance of the contract) under any contract between the Company and the Customer.
- (e) When goods are manufactured to an agreed programme or date, should the Customer not be in a position to accept the goods the Company reserves the right to issue a vesting certificate and claim payment for the goods, the Company reserves the right to charge the Customer any additional costs associated with the vesting procedure including storage costs. Added premium of £25 will be charged per hard copy of Invoice / Application issued by post.

Warranties

- (a) Unless otherwise agreed in writing, the standard warranty period for the goods is 12 months from the date of delivery.
- (b) Any warranties whether standard or project specific, shall not cover any goods misused in any way while outside the control of the Company in respect of which defects have not been reported to the Company within the time stipulated.
- (c) To the extent that all other warranties conditions and representations may in law be excluded they are hereby excluded, and no liability shall accrue to the Company in respect of any loss, damage or personal injury suffered (whether directly or consequentially) arising out of the supply or re-use of the goods or any defects therein save that the following shall not be excluded: -
 - i) any liability in respect of death or personal injury arising out of the Company's negligence; and
 - ii) such liability in respect of damage or loss arising directly out of the Company's negligence as it would in the circumstances be unreasonable to exclude.

(d) Notwithstanding the foregoing any liability of the Company as set out above shall (except with regard to liability in respect of death or personal injury as set out in sub-clause (b)(i) hereof) in all cases be limited to the invoice price of the goods in respect of which the Customer's claim is made.

Design Services

Where acoustic design consultancy services are provided on a fee-paying basis, such services will be covered under the Company's Professional Indemnity insurance. Where no such fee is payable it is the responsibility of the Customer to ensure the Company is provided with the final design drawings specifications and any associated equipment data to enable the Company to validate the suitability of its product proposals within their intended application. The Company will use its best endeavours to determine from the project specifications provided any special requirements such as fire ratings, usage in clinically clean or highly corrosive or aggressive environments, which may dictate an upgrade or upgrades to the Company's standard product constructional specifications. However, the Company will not be held responsible for any omission or error in this respect, and it is therefore the Customer's sole responsibility to specifically identify and advise any such need, and to check that the Company's specification details, which are provided for Customer's approval prior to manufacture, meet fully with Customer's requirements.

Projects that require upfront CAD and structural design work will be reviewed on a project by project basis and associated costs advised accordingly, should the Customer not proceed with placing an order on the Company to proceed into manufacture, based on the upfront design, the company has the right to absolve all responsibility for the design. All design drawings and calculations in hard copy must be returned or destroyed, all soft copies must be deleted. The design and calculations must not be passed to a third party.

Quotations inclusive of products that are finish painted with PPC (Polyester Powder Coating) are to an 'Unspecified Standard RAL colour paint' with a Gloss Level of 25% + / - 5% band category 'A' from the relevant product selector, PPC thickness 48 µm. Alternative band categories and increased paint thickness will be charged extra as required and can be selected from the 'Specified' section of the product selector under 'Premium' & 'Premium Plus'. All painting of The Company's products is carried out under the Company's Standard Operating Procedure & Paint Test Standard Operating Procedure. **Please refer to Caice [Polyester Paint Colours](#).**

Goods with CE Certification

Any change to design of goods supplied by the company with CE certification will automatically become void, making the certification invalid.

Title to Goods

(a) Legal title to and property in the goods shall remain with the Company and shall not pass to the Customer until payment has been made in full by the Customer for such goods.

(b) During the time prior to passing of legal title in the goods the Customer shall act as bailee for the Company in respect of the goods and shall mark them as the property of the Company, store them separately from the Customer's own goods and if required to do so shall undertake to return them to the Company. If the customer should sell the goods prior to the passing of title pursuant to the terms of this clause then the Customer shall be bound as a fiduciary to preserve and keep separate the monies arising on such sale.

(c) The Company reserves to itself the right to enter upon any premises, without notice, of the Customer or its nominated carrier where the goods are stored prior to passing of legal title to the Customer, for the purposes of inspecting the goods and of re-taking possession of the same.

Waiver

Any failure by the Company to enforce or require strict performance by the Customer of any of the Terms or Conditions contained herein shall not constitute a waiver thereof by the Company nor affect or prejudice the rights of the Company in any way in respect of the remedies open to the Company for any breach of the terms hereof.

Termination of Contract

(a) If the Customer shall make default in or commit a breach of the Terms and Conditions herein contained or of any other of his obligations to the Company or if any distress or execution shall be levied upon the Customer's property or assets or if the Customer shall make or offer to make any arrangement or composition with creditors or commit any act of bankruptcy or if any Petition or Receiving Order in Bankruptcy shall be presented or made against him or if the Customer is a limited Company and any Resolution or Petition to Wind up such Company's business (other than for the purpose of amalgamation or reconstruction) shall be passed or presented or if an Administrative Receiver of such Company's undertaking property or assets or any part thereof shall be appointed the Company shall have the right forthwith to determine any contract then subsisting and upon written notice of such determination being posted to the Customer's last known address any subsisting contracts shall be deemed to have been determined without prejudice to any claim or right the Company may otherwise make or exercise.

(b) If the contract is terminated all reasonable, direct and actual costs incurred will be reimbursable by the Customer to the Company.

Force Majeure

(a) In the event of an outbreak of hostilities (whether war is declared or not) in which the United Kingdom is involved or in the event of a national emergency or if the Company should become either directly or indirectly so engaged on government orders or orders under priority directions as to prevent or delay the fulfilment of other orders the Company shall be entitled at any time on notice to the Customer to make partial deliveries only or to determine the contract without prejudice in any case to rights accrued in respect of deliveries already made.

(b) Delivery may be wholly or partially suspended and no liabilities shall accrue to the Company therefore in the event of a stoppage delay or interruption of work in the establishment of either the Company or of any supplier during the delivery period as a result of strike lockouts, trade disputes, breakdown, accident, storm, flood, fire or failure of third parties to deliver the goods or provide services connected therewith or any cause whatsoever beyond the control of the Company which has the effect of preventing the Company from carrying out its obligations to the Customer hereunder.

Dispute & Resolution

If any disputes or differences arise between the parties under this agreement, the parties shall within 60 days of a written request from either party to the other meet through duly authorised representatives in an effort to resolve the dispute in good faith. Pending the conclusion of such a meeting the parties agree they shall not seek to pursue any other dispute resolution proceedings.

Weights Measures and Illustrations

Whilst every care has been taken to make the information complete and accurate, weights and measurements given in the Company's leaflets, catalogues, price lists or other trade literature should be taken as approximate only and subject to alterations of which the Company cannot undertake to give prior notice. Illustrations are given as a general guide and are not necessarily accurate in detail.

Data Protection Act

Where the Customer provides us with personal data, the data will be held securely in confidence and processed for the purpose of carrying out trading activities with the Company. The Customer accepts that we may consult with and disclose the data to credit reference agencies, banks, credit insurers and other responsible organisations outside our business and that we have nominated, and that such third parties may process the data. The Customer understands that under the Act they have a right to know what data is held on them and if they apply to us in writing and pay the applicable fee. Please refer to our [Privacy and cookies policy](#)

Law Applicable

These Terms and Conditions and any contract between the Customer and the Company are governed by English Law and the English Courts alone shall have exclusive jurisdiction.

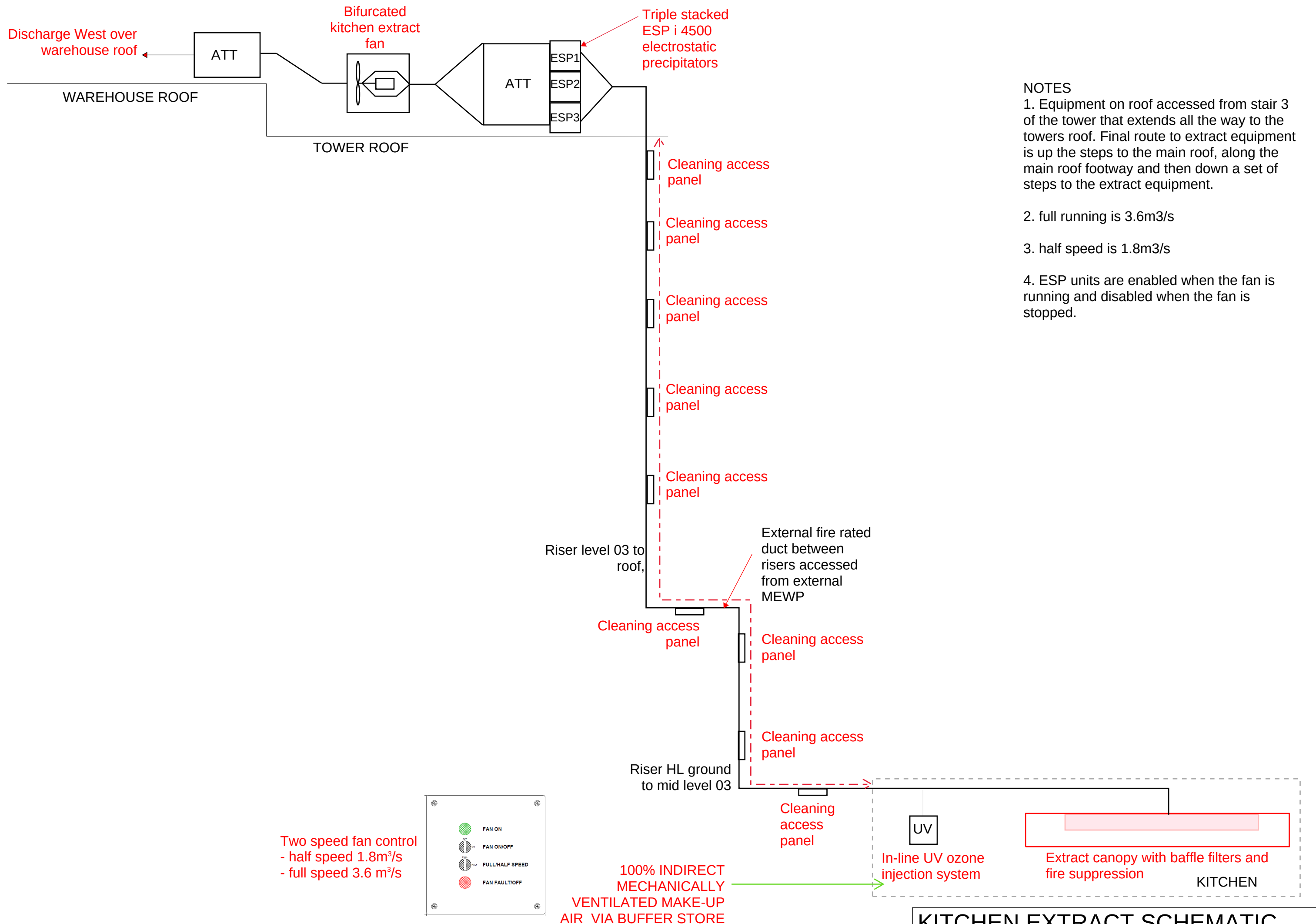
Terms & Conditions

Supply Only



Notices

Any Notice in writing hereunder shall be deemed to be received two days after posting to either the Registered Office or the last known trading address of the recipient



**KITCHEN EXTRACT SCHEMATIC
ARCH 3 - MIF FACTORY**

FACTORY INTERNATIONAL

FOYER COFFEE SHOP AND BAR FOOD MENU SUBJECT TO CHANGE

We are committed to working with and championing local suppliers from Manchester and the surrounding regions, whilst reducing our impact on the environment. Our menu therefore may change from time to time based upon seasonality and ingredient availability.

1. BAR AND BAKERY COUNTER

BREAKFAST GRAB AND GO SERVED 8AM-3PM

SIOP SHOP DOUGHNUTS

PASTRIES AND BAKES FROM **HALF DOZEN OTHER BAKERY**

CROISSANT **(V)** / PAIN AU CHOCOLAT **(V)** / PAIN AU RAISIN **(V)**

CINNAMON BUN **(V)** / SEASONAL DANISH **(V)**

PISTACHIO AND WHITE CHOCOLATE CROISSANT **(V)**

TAHINI BANANA BREAD **(VG, GF)**

ECCLES CAKE **(V)**

SALTED CARAMEL BROWNIE **(VG)**

FOCACCIA SANDWICHES FROM MIDDAY

Fresh focaccia sandwiches made daily by our team of in-house chefs, using locally baked bubbly focaccia. Our pickles and ferments come from local Plucky Pickle.

Examples include but regularly changing -

HAM & PLUCKY PICKLE - Honey Roast Ham, Manchester Plucky Pickle Giardiniera

CORONATION CAULI - Curried Cauliflower, Crunchy Lettuce, Toasted Almonds **(VG)**

MANC HERO - British mozzarella, Rocket Pesto, Northern Cure Salami, Manchester Pickles

BHAJI BUTTY - Onion Bhaji, Shredded Lettuce, Date and Mango Chutney, Coconut Yoghurt **(VG)**

CHEESE & ONION - Lancashire Cheese, Onion, Beetroot Pickle

CHICKEN KATSU - Free range chicken schnitzel, white cabbage slaw, curry mayo

QUICHE OF THE DAY

Made daily in house, using seasonal and locally sourced fillings, and served with selection of two salads. One on offer each day. Example choices -

COURGETTE, PEA AND MINT (VG) / BLACK GARLIC, CHARD AND LANCASHIRE CHEESE (V) / FREE RANGE CHICKEN, LEEK AND 'NDUJA

SALADS

We use only sustainably grown salad leaves and herbs in our salads, sourced from local Lancashire farms. 3 salads available at any one time - choices may include

GRILLED CHICKEN SUPERGREENS (GF) - free range chicken, supergrains and greens, broccoli, cherry tomatoes, green goddess dressing, pickled onions

CRISPY CHICKPEA CAESAR (VG, GF) - Romaine and shredded kale, crispy roast chickpeas, pickled red onion, caesar dressing

CHICKEN CAESAR - Romaine and shredded kale, shredded chicken thigh, pickled red onion, parmesan, caesar dressing, pitta chips

PLANT POWER (V, GF) - Romaine and shredded kale, chickpeas, roasted beets, pumpkin seeds, pickled onions, green tahini dressing

GREEN FALAFEL (VG) Mint tabbouleh, cucumber, roast veg, houmous, watercress, tahini dressing

PROTEIN BOWL (GF) - Romaine and kale, baby spinach, roast chicken, farm egg, pickled onions, walnuts, feta

GOATS CHEESE (GF) - roast sweet potato, shredded kale, pecans, chilli honey dressing

TOFU POKE BOWL (GF,GF) - avocado, wild rice, edamame, sriracha mayo, pickled ginger, crispy onions

GREEK CRUNCH (V) - feta, olives, red onion, cucumber, tomatoes, rocket, oregano, crunchy pitta chips

SOUP

changing daily, made from zero waste vegetable stocks, served with house made flatbread or gluten free bread, example choices -

LENTIL DAAL - garlic dill raita, toasted pumpkin seeds **(VG, GFO)**

BROCCOLI AND BLUE CHEESE - Broccoli and Nicky Nook, crispy onions **(V, GFO)**

THAI SPICED MULLIGATAWNY - Coconut and Lime Sambal **(VG, GFO)**

PIZZA ROMANA All day 12 - 10pm

BY THE SLICE

Crisp, light, double fermented dough, made in house.

We're excited to be working with *Wildfarmed* regeneratively farmed British flour, which has a negative carbon footprint. Our cheeses and meats are sourced locally.

MARGHERITA - British mozzarella, tomato sauce, fresh basil, olive oil **(V)**

FUNGI - British mozzarella, tomato sauce, mushrooms, basil, olive oil **(V)**

NORTHERN CURE - Tomato, mozzarella, 'Northern Cure' Manchester made fennel salami, 'nduja and pickled chillies

BLUE CHEESE AND BROCCOLI - Tenderstem broccoli, 'Nicky Nook' blue cheese, walnut gremolata, chilli oil (No Tomato)

BURRATA AND BLACK PUDDING - Bury black pudding, mozzarella, crispy sage, burrata, chilli honey

VEGAN CHORIZO AND PINEAPPLE - 'Symplicity' vegan chorizo, pickled pineapple, vegan mozzarella, red onion (VG)

DIPS ranch / pesto mayo / nduja mayo

ICE CREAM from Rogue Ice Cream -

Award-winning artisan ice cream made from 100% natural ingredients in the heart of Manchester.

Salted Treacle / Butterscotch / Lemon Curd / Chocolate / Pistachio / Vegan Chocolate

2. MAIN KITCHEN

ALL DAY BRUNCH SERVED 9-4PM

Choice of bread - Holy Grain sourdough, whole wheat, rye or gluten free

TOAST with jam or peanut butter or honey or marmite **(V, VGO, GFO)**

EGGS ON TOAST - 2 eggs, poached scrambled or fried on sourdough **(V, GFO)**

HOUSE MADE GRANOLA - seasonal berries, chia seed, greek yoghurt, maple **(V, VGO, GF)**

OVERNIGHT OATS - gluten free oats, almond milk, chia seeds, banana, cinnamon, cashew butter **(VG, GF)**

CHIA PUDDING coconut milk, banana, hemp seeds, cacao nibs, maple syrup **(VG, GF)**

BACON BUTTY (GFO) 4 / VEGGIE SAUSAGE BUTTY (VG, GFO) (+ fried farm egg (V))

LANCASHIRE CHEESE & MUSHROOM TOASTIE - Harissa ketchup **(V, VGO)**

TURKISH EGGS - 2 poached eggs, harissa labneh, chilli oil, pumpkin seed dukkah, dill, toasted sourdough **(V, GFO)**

FLUFFY PANCAKES

with market berries, whipped ricotta, hazelnuts, maple syrup **(V)**

+ crispy bacon +

NO AVOCADO TOAST - Poached egg, smashed broad beans, ricotta, pumpkin seeds, chilli oil **(V, GFO)**

+ crispy bacon +

SALMON MEZZE - locally smoked salmon, labneh, soft boiled farm egg, beef tomato, kimchi, mixed leaves **(GF)**

'MANCHESTER TART' FRENCH TOAST - buttered brioche French toast, raspberry coulis, fresh berries, desiccated coconut

FACTORY FRY UP - fried farm egg, crispy bacon, Portobello mushroom, Bury black pudding, hash brown, beans, toast **(GFO)**

VEGGIE FRY UP - fried farm egg, hash brown, halloumi, garlic butter spinach, portobello mushroom, spiced tomato relish, beans, toast (V, GFO)

VEGAN FRY UP - tofu scramble, vegan sausage, hash brown, garlic butter spinach, portobello mushroom, spiced tomato relish, beans, toast (VG, GFO)

BREAKFAST BURRITO - soft wheat tortilla filled with folded eggs, chorizo, fresh tomato salsa, cheddar, hash browns

VEGAN BREAKFAST TACOS / BURRITO - soft tortillas filled with tofu scramble, vegan chorizo, fresh tomato salsa, hash browns (VG)

KIMCHI CROQUE MADAME - Toasted sourdough, cured ham, cheddar, kimchi and a fried farm egg **(GFO)**

CHIP BUTTY - crispy hand cut chips, buttered white slice, choice of sauce - ketchup, brown sauce or curry mayo **(V, VGO)**

SIDES

CRISPY BACON 4 / BLACK PUDDING / CHORIZO / HALLOUMI (V) / CHIPS (VG) / HASH BROWN (V) / MARINATED OLIVES (VG, GF)

KIDS

CHEESE TOASTIE and veg snack plate (V)

HOUMOUS, TOASTED PITTA and veg snack plate (VG)

V - VEGETARIAN / VG - VEGAN / VGO - VEGAN OPTION AVAILABLE / GF - GLUTEN FREE / GFO - GLUTEN FREE OPTION AVAILABLE

ALLERGENS AND DIETARY REQUIREMENTS - PLEASE SPEAK TO A MEMBER OF STAFF BEFORE ORDERING YOUR FOOD
QR LINK TO ALLERGENS * ALL FOOD MAY CONTAIN NUTS AND TRACES OF OTHER ALLERGENS

EVENING 5-9PM

MIDDLE EASTERN INSPIRED ~ MANCHESTER MADE

FLUFFY STUFFED PITTAS

FACTORY FALAFEL - PICKLED CUCUMBER, GARLIC YOGHURT, TAHINI, TOMATO, CORIANDER, CRISPY POTATO SCRAPS, PICKLED CHILLIES **(V)** + **HALLOUMI (V)**

FREE RANGE CHICKEN SHAWARMA - PICKLED CUCUMBER, GARLIC YOGHURT, LETTUCE, TOMATO, PICKLED CHILLIES

HARISSA LAMB MEATBALL - PICKLED CUCUMBER, GARLIC YOGHURT, TAHINI, TOMATO, CORIANDER, CRISPY POTATO SCRAPS, PICKLED CHILLIES

VEGAN CHICK'N SHAWARMA - YOUNG VEGANS CHICK'N, PICKLED CUCUMBER, OAT GARLIC YOGHURT, LETTUCE, TOMATO **(VG)**

***LIMITED EDITION PITTA** - ROTATING SPECIALS COLLABORATING WITH LOCAL FOOD BRANDS

+ HOUMOUS 1.5 (VG) / HALLOUMI / CHICKEN / FALAFEL (VG) / LAMB MEATBALLS

PITTA PLATE - ALL AVAILABLE AS PITTA PLATES WITHOUT THE BREAD AND ON A BED ON MIXED LEAVES AND EXTRA PICKLES

SIDES

MARINATED OLIVES **(VG)**

PADRON PEPPERS, sumac, smoked sea salt **(VG)**

GRILLED PITTA **(VG)**

ZA'ATAR FRIES **(VG)** PLUS DIPS - HOUMOUS **(VG)** / HARISSA LABNEH **(V)** / BABA GANOUSH **(VG)** EACH

ALL 3 DIPS WITH GRILLED PITTA **(V)**

HALLOUMI FRIES - Garlic Yoghurt, Pomegranate, Chili Honey **(V)**

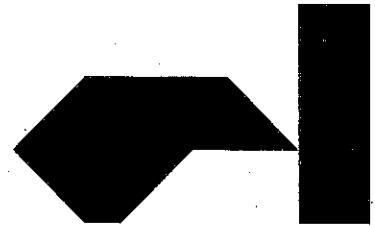
CRISPY ZA'ATAR CAULIFLOWER BITES AND HARISSA MAYO **(V)**

DRUNKEN FRIES - ZA'ATAR FRIES WITH TAHINI, GARLIC YOGHURT, CHILLI SAUCE **(V)** **(IDEAL TO SHARE)**

SWEET

DARK CHOCOLATE TAHINI BROWNIE, SALTED CARAMEL ICE CREAM **(V)**

factory international



Date: 8th June 2023

From: David Mitchell, Facilities Manager, Factory International

Re: Maintenance of Kitchen Extraction Systems

Overall responsibility for servicing, inspection and cleaning of all fixed asset systems in the Kitchen areas, including fixed kitchen extraction, will sit with Factory International. Operationally this will be managed by the Facilities Manager as follows:

- Maintenance to meet or exceed statutory requirements will be carried out by a competent service contractor under the instruction of Factory International. Relevant records will be kept;
 - Health & Safety at Work Act, 1974
 - Workplace (Health, Safety & Welfare) Regulations, 1992
 - Management of Health & Safety at Work Regulations, 1999
 - Gas Safety (Installation and Use) Regulations, 1998
 - Fire Safety (England) Regulations, 2022
 - Regulatory Reform (Fire Safety) Order, 2005
- Reactive maintenance to repair defects, malfunctions or damage will be carried out by the same contractor, on request from Factory International.
- Regular cleaning of the extraction system to comply with all relevant regulations will be carried out by a competent contractor, and records kept by Factory International.

Please contact me for any further information you require.

Regards,

David Mitchell, Facilities Manager.