

Project Name:

Fuel

Project Description

Kitchen Vent

Client CDA

Project Number

14142

Project Address:
46 Henry Street
Manchester



Information Involvement Influence

cedabond [illegible]



PROPOSED DRAWINGS ONLY - SUBJECT TO SITE SURVEY

NOTES

- ALL FIRST FIX AND SECOND FIX ELECTRICAL WORKS INCLUDING FIXING FAN CONTROLS IN POSITION BY OTHERS.
- INOX HAS ONLY ALLOWED FOR A FINAL CONTROL CHECK TO ENSURE SYSTEMS RUNS AS PER DESIGN.
- NO ALLOWANCE HAS BEEN MADE FOR GAS COOKING EQUIPMENT.
- STAINLESS STEEL WALL CLADDING REQUIRES A FLAT DRY SURFACE FOR BONDING TO (FINISHED WALLS).
- CONDENSE HOOD REQUIRES FINISHED WALLS PRIOR TO INSTALLATION.
- ALL ROOF OPENINGS BY OTHERS.
- ALL ROOF OPENINGS REQUIRE WEATHERED CURBS TO BE FORMED AROUND EACH OPENING.
- HOOD IS MANUFACTURED TO SUIT A MAX SUSPENDED CEILING HEIGHT OF 2450mm. HIGHER CEILINGS WILL REQUIRE VALANCE TO TOP OF HOOD AT EXTRA COST.
- ALL HOODS ARE INSTALLED AT 2000mm FROM FINISHED FLOOR LEVEL.
- ALL HOODS ARE SUPPORTED FROM STRUCTURAL CEILING.
- ALL SERVICES MUST AVOID CANOPY HANGING POINTS.
- A MINIMUM CLEARANCE OF 1000mm AROUND THE HOOD MUST BE LEFT TO ALLOW ENGINEERS SAFE HIGH LEVEL ACCESS.
- ROOF ACCESS TO BE PROVIDED FOR MAINTENANCE AND INSTALLATION.
- INOX FABRICATIONS LTD DO NOT ALLOW FOR: PLANNING PERMISSIONS, BUILDING CONTROL CONSENT, FIRE OFFICER APPROVAL. ALL PARTS OF THE VENT DESIGN MUST BE APPROVED BY THE CORRECT BODY INCLUDING STRUCTURAL ENGINEERS, DESIGNERS AND ARCHITECTS.
- INOX DO NOT CO-ORDINATE ANY OTHER SERVICES.
- NO ALLOWANCE HAS BEEN MADE FOR: FIRE RATED DUCTING, TEMPERED AIR, CANOPY EMERGENCY LIGHTING, POWERED ACCESS EQUIPMENT, SECONDARY SUPPORT STEEL WORK, KITCHEN AREA LIGHTING, ELECTRICAL WORKS.

EXTRACT VOLUME	
Item Number	Extract Volume
Item 109	1.100 m³/s

SUPPLY AIR VOLUME	
Item Number	Supply Air Volume
Item 109	0.935 m³/s

VENTILATION CANOPY FLOW RATE CALCULATION SHEET				
Project:	Fuel		Job No:	14142
Drawing Ref	CDA Drawing PR 1387 Rev D		Rev	
		Date	03/10/2023	

Equipment To Ventilated:							
Item	Description	Width (mm)	Depth (mm)	Power	Area	TCC	Flow Rate
101	Boiling Top	300	600	Electric	0.18	0.25	0.0450
102	Mild Steel Griddle	900	600	Electric	0.54	0.4	0.2160
103	Bench	300	600	N/A	0.18	0.03	0.0054
104	Mild Steel Griddle	900	600	Electric	0.54	0.4	0.2160
105	Bench	300	600	N/A	0.18	0.03	0.0054
106	Pasta Cooker	300	600	Electric	0.18	0.2	0.0360
107	Deep Fat Fryer	600	600	Electric	0.36	0.45	0.1620
108	Deep Fat Fryer	300	600	Electric	0.18	0.45	0.0810
115	Heated Drawer	750	575	Electric	0.43	0.15	0.0647
116	Heated Drawer	750	575	Electric	0.43	0.15	0.0647
					0.00		0.0000
					0.00		0.0000
					0.00		0.0000
					0.00		0.0000
					0.00		0.0000
					0.00		0.0000
					0.00		0.0000
					0.00		0.0000
					0.00		0.0000
Theoretical extract volume required							0.8962
Canopy Factor							1.2
Extract Flow Rate M3/SEC							1.075
Supply Flow Rate (85%) M3/SEC							0.914

The above calculation is to allow ventilation of equipment under the canopy only, it does not allow for general ventilation to the kitchen, and is based on DW/172 Extract Flow Rate Calculation Method 1.

KEY		
IMAGE	DESCRIPTION	CODE
	CANOPY HANGING POINT	HP
	CANOPY LIGHT CONNECTION POINT	CP
	LED SPOT LIGHT	SL
	INFILL PANEL	IP
N/A	SUSPENDED CEILING HEIGHT	SCH
	GALVANIZED STEEL EXTRACT DUCT	EX
	GALVANIZED STEEL SUPPLY AIR DUCT	SA
	SITE JOINT	SJ

[illegible]

PROJECT NAME

Fuel

PROJECT ADDRESS

**46 Henry Street
Manchester**

TITLE

FIRST FLOOR KITCHEN VENT PLAN

CLIENT

CDA

PROJECT NUMBER

14142

REV

P02

DRAWING NUMBER

001

SCALE (@ A1)

As indicated

DRAWN BY

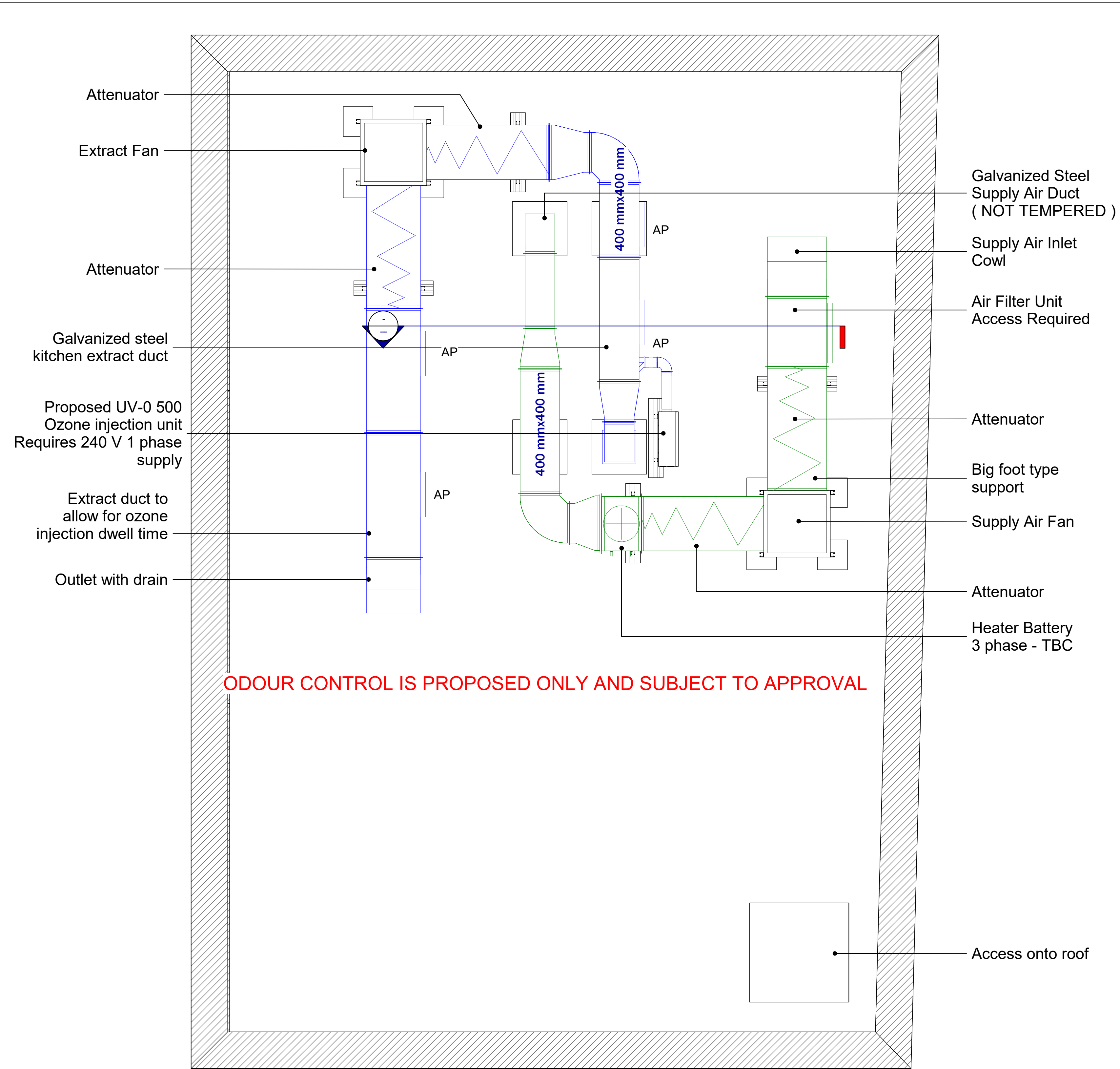
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CHECKED BY

LP

DATE _____

03-01-24



1 Roof - Kitchen Vent Plant
1 : 25

ELECTRICAL DETAILS - HEATER BATTERY - TBC	
MANUFACTUER	NEATAFAN
MODEL	TC 8
VOLTAGE	400 V
FREQ	50 Hz
PHASE	3
INPUT POWER	18 kW
LOCATION	ROOF

ELECTRICAL DETAILS - EXTRACT FAN	
MANUFACTUER	SYSTEM AIR
MODEL	MUB 450 EV
ART No	235407
VOLTAGE	230
FREQ	50 Hz
PHASE	1
INPUT POWER	752 WATTS
INPUT CURRENT	3.1 AMPS
LOCATION	ROOF
CONTROLLER	ATC1-4TK

ACOUSTIC SOUND LEVELS - EXTRACT FAN - MUB 450 E4									
OCTAVE BAND FREQUENCY - Hz	63	125	250	500	1K	2K	4K	8K	TOT
FAN SOUND POWER LEVEL - INLET	48	61	64	70	74	71	64	59	77
FAN SOUND POWER LEVEL - OUTLET	50	62	65	71	75	73	65	61	79
SURROUNDING	32	46	47	44	48	49	39	28	54
Sound Pressure Level @ 3 mtr (20m²...									47
Sound Pressure Level @ 3 mtr Free Field									33
SILENCER SPECIFICATION: - 1250mm Long Straight Through									
LOSSES	-9	-14	-18	-28	-28	-20	-18	-15	
DBA CALCULATOR									
APPROX SOUND LEVELS AS SPECIFIED...	1m	2m	3m	4m	5m	6m	7m	8m	10m
INLET	46	40	36	34	32	30	29	28	26
OUTLET	48	42	38	36	34	32	31	30	28

ELECTRICAL DETAILS - SUPPLY AIR FAN	
MANUFACTUER	SYSTEM AIR
MODEL	MUB 450 EV
ART No	235407
VOLTAGE	230
FREQ	50 Hz
PHASE	1
INPUT POWER	752 WATTS
INPUT CURRENT	3.1 AMPS
LOCATION	ROOF
CONTROLLER	ATC1-4TK

ACOUSTIC SOUND LEVELS - SUPPLY AIR FAN - MUB 450 E4									
OCTAVE BAND FREQUENCY - Hz	63	125	250	500	1K	2K	4K	8K	TOT
FAN SOUND POWER LEVEL - INLET	47	60	63	69	73	71	63	58	77
FAN SOUND POWER LEVEL - OUTLET	49	62	65	70	74	72	65	59	78
SURROUNDING	32	45	56	43	47	48	38	27	53
Sound Pressure Level @ 3 mtr (20m²...									46
Sound Pressure Level @ 3 mtr Free Field									32
SILENCER SPECIFICATION: - 1250mm Long Straight Through									
LOSSES	-9	-14	-18	-28	-28	-20	-18	-15	
DBA CALCULATOR									
APPROX SOUND LEVELS AS SPECIFIED...	1m	2m	3m	4m	5m	6m	7m	8m	10m
INLET	46	40	36	34	32	30	29	28	26
OUTLET	47	41	37	35	33	31	30	29	27



Rev	Description	Date
P01	Proposed Drawings For Comment Only	10-10-23
P02	Odour risk assessment added with proposed odour control measures	03-01-24

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**46 Henry Street
Manchester**

TITLE

**KITCHEN VENT ROOF
PLAN**

CLIENT

CDA

PROJECT NUMBER

14142

REV

P02

DRAWING NUMBER

002

SCALE (@ A1)

1 : 25

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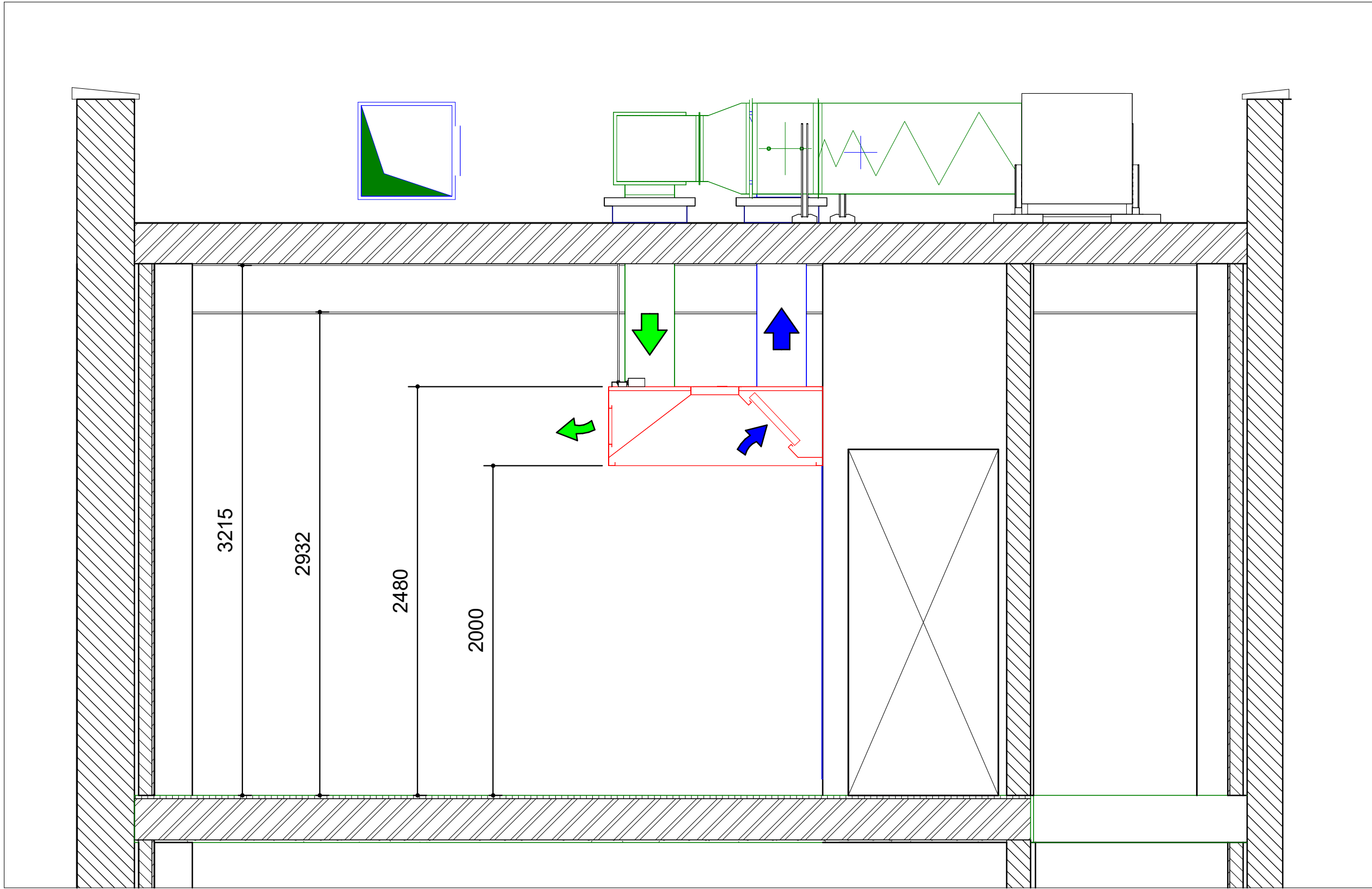
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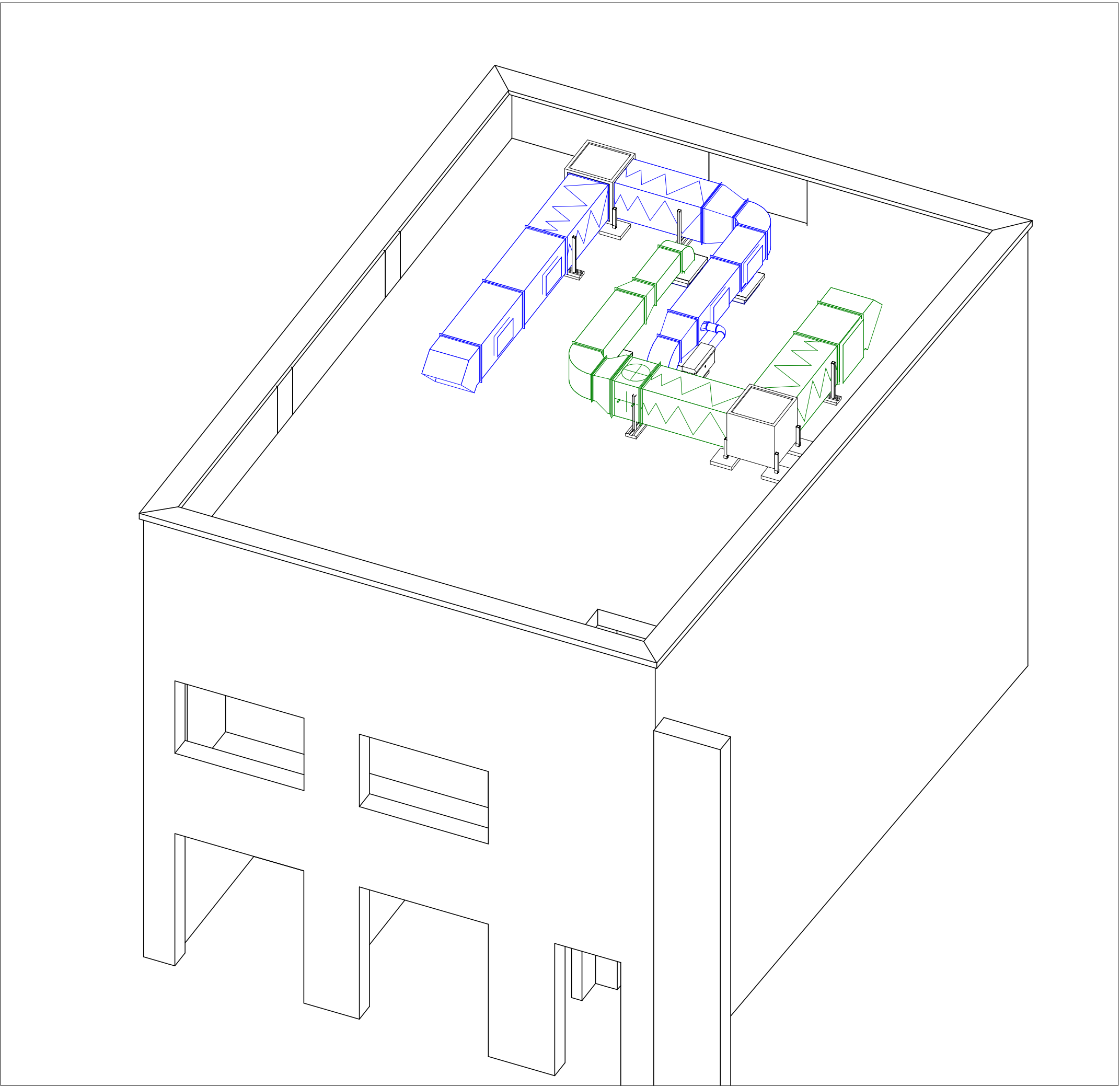
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DATE

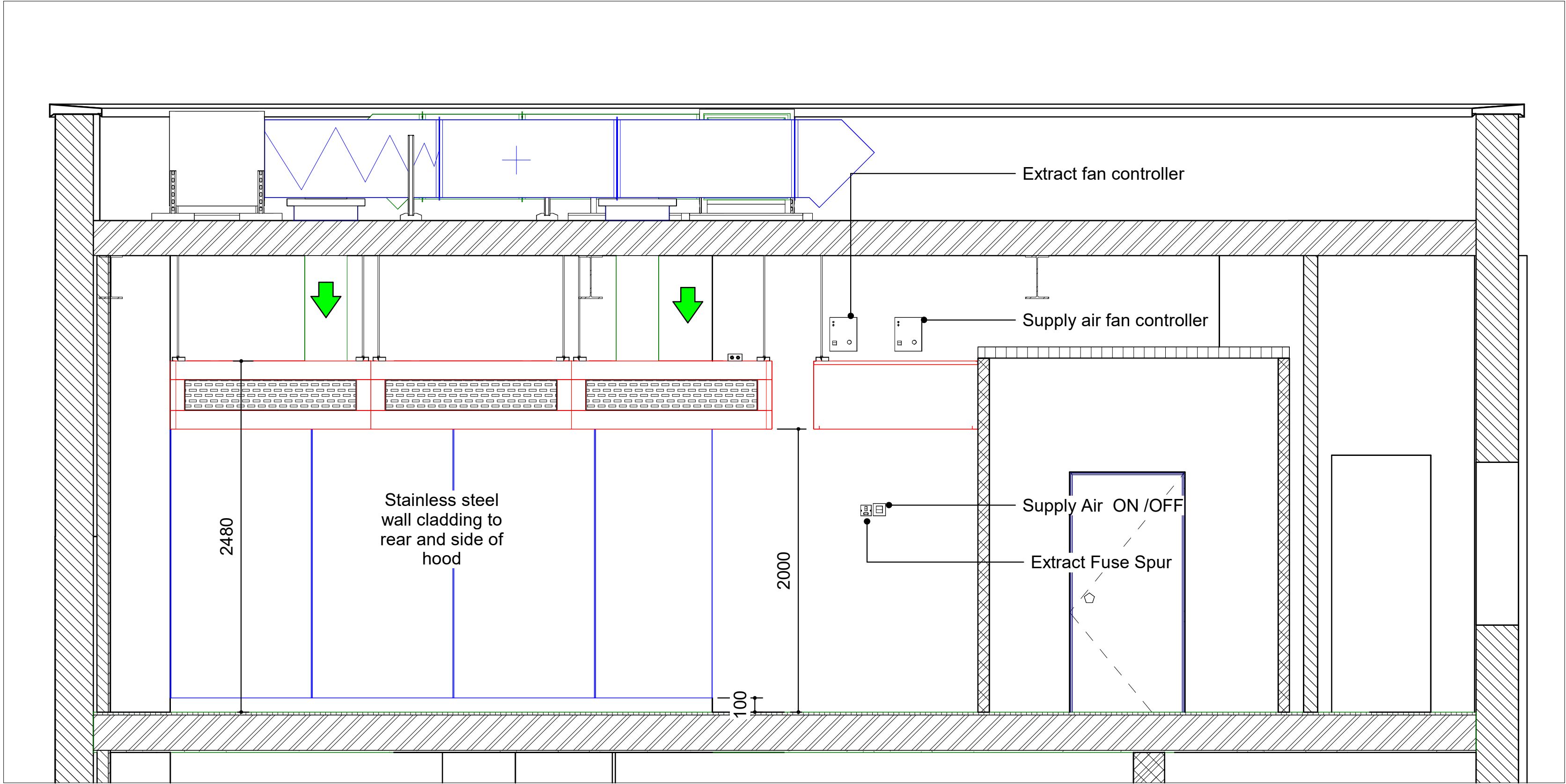
03-01-24



1 Section 1
1 : 25



3 3D View



2 Section 2
1 : 25



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TITLE

SECTIONS

CLIENT

CDA

PROJECT NUMBER

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REV

P02

DRAWING NUMBER

003

SCALE (@ A1)

1 : 25

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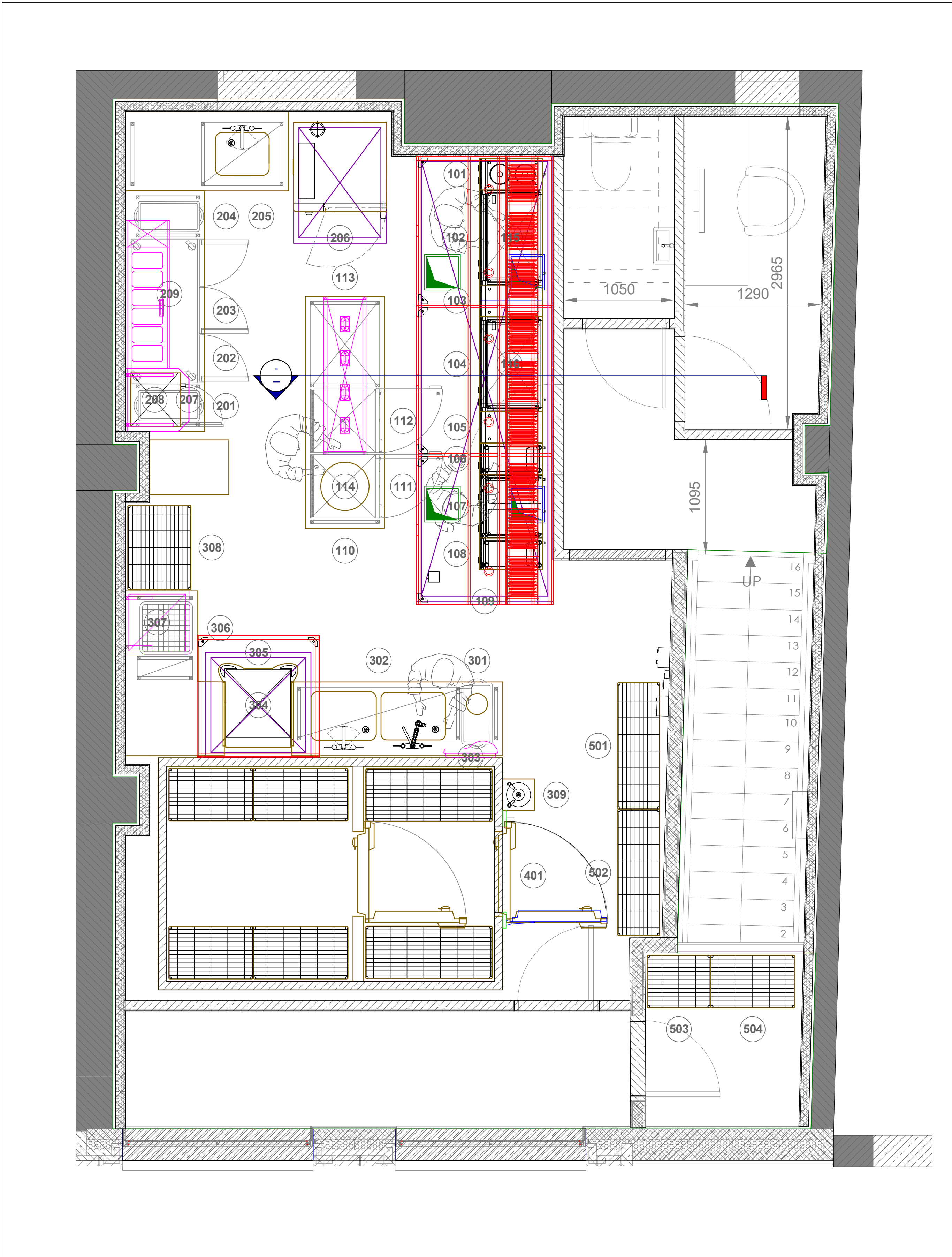
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LP

DATE

03-01-24



1 CDA - FIRST FLOOR PLAN
1 : 25



Rev	Description	Date
P01	Proposed Drawings For Comment Only	10-10-23
P02	Odour risk assessment added with proposed odour control measures	03-01-24

PROJECT NAME

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PROJECT ADDRESS

**46 Henry Street
Manchester**

TITLE

**FIRST FLOOR CDA
KITCHEN LAYOUT**

CLIENT

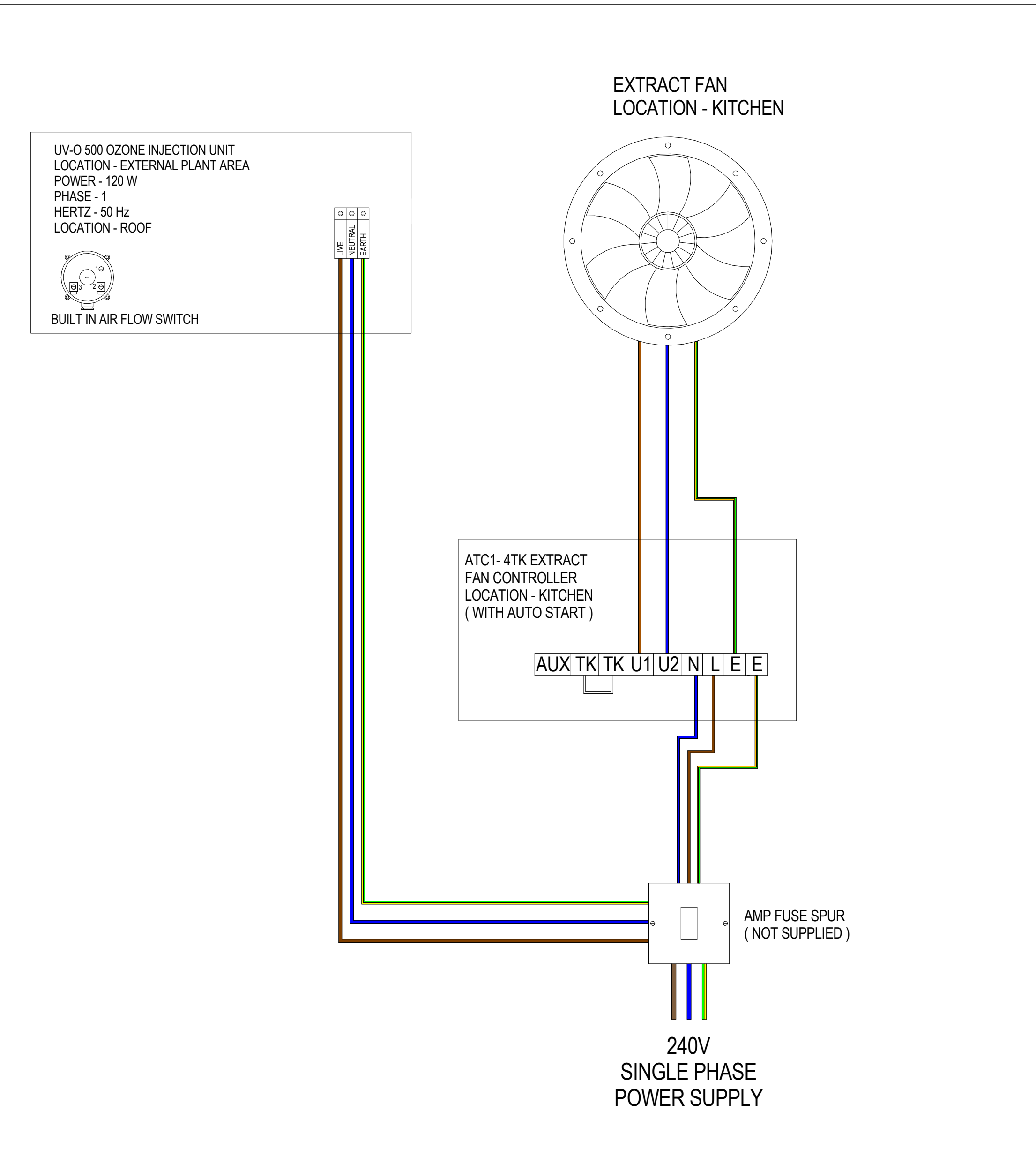
CDA

PROJECT NUMBER	REV
14142	P02

DRAWING NUMBER	SCALE (@ A1)
004	1 : 25

DRAWN BY	CHECKED BY	DATE
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EXTRACT FAN AND OZONE UNIT WIRING SCHEMATIC



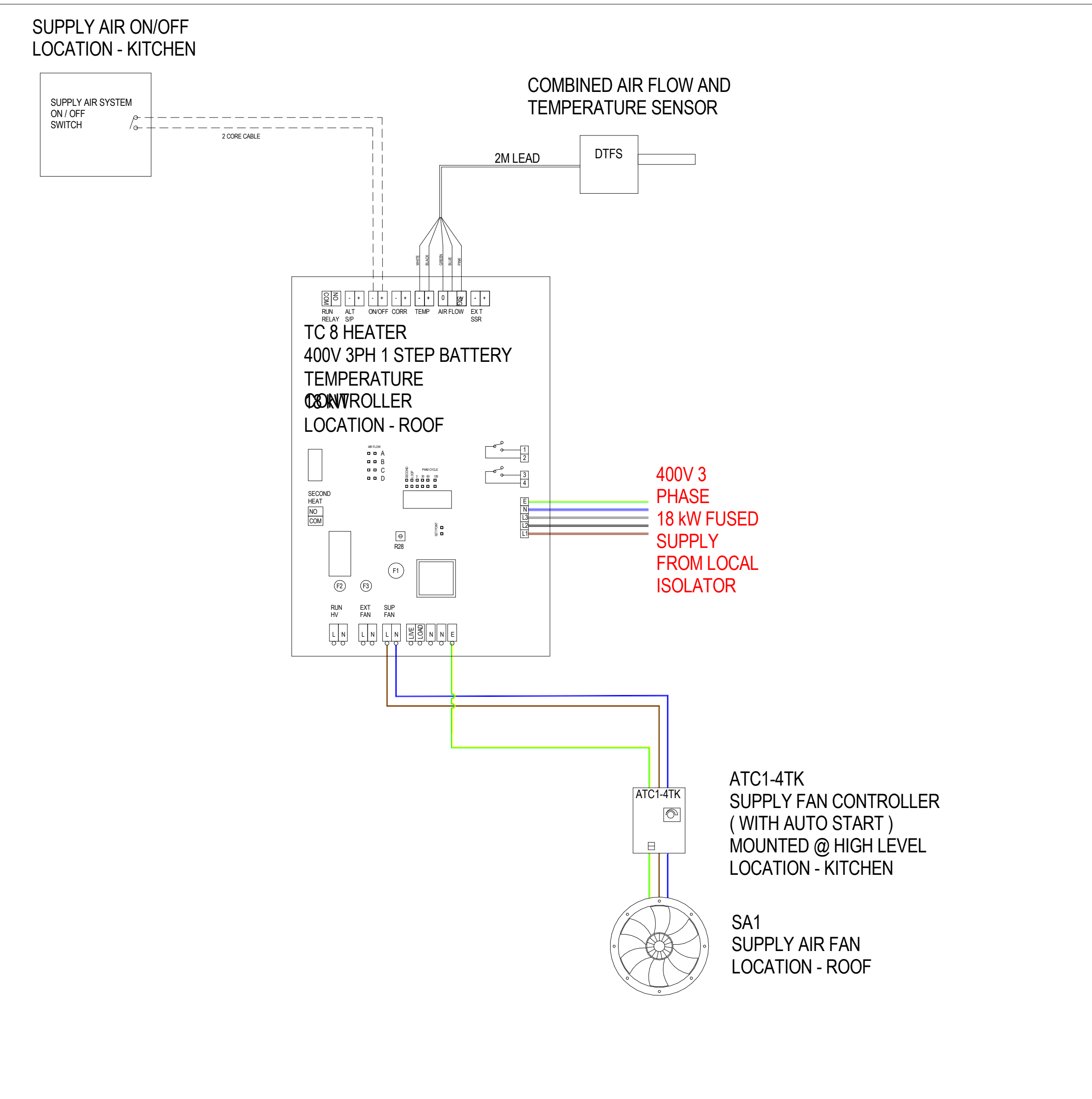
ELECTRICAL DETAILS - EXTRACT FAN	
MANUFACTUER	SYSTEM AIR
MODEL	MUB 450 EV
ART No	235407
VOLTAGE	230
FREQ	50 Hz
PHASE	1
INPUT POWER	752 WATTS
INPUT CURRENT	3.1 AMPS
LOCATION	ROOF
CONTROLLER	ATC1-4TK

ELECTRICAL DETAILS - UV-O 500 OZONE INJECTION UNIT	
MANUFACTUER	PURIFIED AIR
MODEL	UV-O 500
VOLTAGE	230 V
FREQ	50 Hz
PHASE	1
INPUT POWER	120 WATTS
MAX AIR FLOW	1.5M3/SEC
AIR VOLUME	1.1 M3/SEC
LOCATION	ROOF

ELECTRICAL DETAILS - SUPPLY AIR FAN	
MANUFACTUER	SYSTEM AIR
MODEL	MUB 450 EV
ART No	235407
VOLTAGE	230
FREQ	50 Hz
PHASE	1
INPUT POWER	752 WATTS
INPUT CURRENT	3.1 AMPS
LOCATION	ROOF
CONTROLLER	ATC1-4TK

ELECTRICAL DETAILS - HEATER BATTERY - TBC	
MANUFACTUER	NEATAFAN
MODEL	TC 8
VOLTAGE	400 V
FREQ	50 Hz
PHASE	3
INPUT POWER	18 kW
LOCATION	ROOF

KITCHEN SUPPLY AIR SYSTEM WIRING



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TITLE

WIRING

CLIENT

CDA

PROJECT NUMBER	REV
14142	P02

DRAWING NUMBER	SCALE (@ A1)
005	1 : 50

DRAWN BY	CHECKED BY	DATE
MP	LP	03-01-24

Risk Assessment for Odour			
Criteria	Rating	Score	Details
Dispersion	Very Poor	20	Low level discharge, discharge into courtyard or restriction on stack.
	Poor	15	Not low level but below eaves, or discharge at below 10 m/s.
	Moderate	10	Discharging 1 meter above eaves at 10 - 15 m/s
	Good	5	Discharging 1 meter above ridge at 15 m/s
Proximity of Receptors	Close	10	Closest sensitive receptor less than 20 meters from kitchen discharge.
	Medium	5	Closest sensitive receptor between 20 meters and 100 meters from kitchen discharge.
	Far	1	Closest sensitive receptor more than 100 meters from kitchen discharge*
Size of Kitchen	Large	5	More than 100 covers or large sized take away.
	Medium	3	Between 30 and 100 covers or medium sized take away.
	Small	1	Less than 30 covers or small take away*
Cooking Type: Odour and Grease Loading	Very High	10	Pub (high level of fried food) fried chicken, burgers or fish and chips. Turkish, Middle eastern or any premises cooking with solid fuel.
	High	7	Vietnamese, Thai, Indian, Japabese, Chinese, Steakhouse
	Medium	4	Cantonese, Italian, French, Pizza (gas fired).
	Low	1	Most pubs (no fried food, mainly reheating and sandwiches etc), Tea Rooms.
* Note: A planner may take a pragmatic view when assessing whether certain low risk kitchen require any odour abatement to be fitted. In reaching this decision the Planner may consider the nature of the food being cooked and / or the size of the kitchen and / or its location			

Odour Control Key		
Impact Risk	Odour Control Requirement	Score
Low to medium	Low level odour control	Less than 20
High	High Level Odour Control	20 - 35
Very High	Very High Level of Odour Control	More than 35
Due to the type of cooking and discharge position Inox have decided to proceed on the basis of low level odour control		

Odour Control Evaluation			
Criteria	Rating	Score	Details
Dispersion	Moderate	10	Discharging 1 meter above eaves. Duct is mounted on second story flat roof.
Proximity of Receptors	Close	10	Closest sensitive receptor less than 20 meters from kitchen discharge.
Size of Kitchen	Small	1	Less than 30 covers or small take away
Cooking Type	Low	1	Dry Heat - Re-heating of high protein health foods eg wraps, mixed meat boxes, salt and pepper boxes etc
Impact Risk	Score	Odour Control Requirement	
Very High	22	Proposed odour control measures: UV-O 500 Ozone Injection Unit Due to the type of cooking and discharge position Inox have decided to proceed on the basis of low level odour control	

KITCHEN EXTRACT

UV-O RANGE

500 | 1000



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

2 TECHNICAL OVERVIEW

UV-O TECHNOLOGY

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.

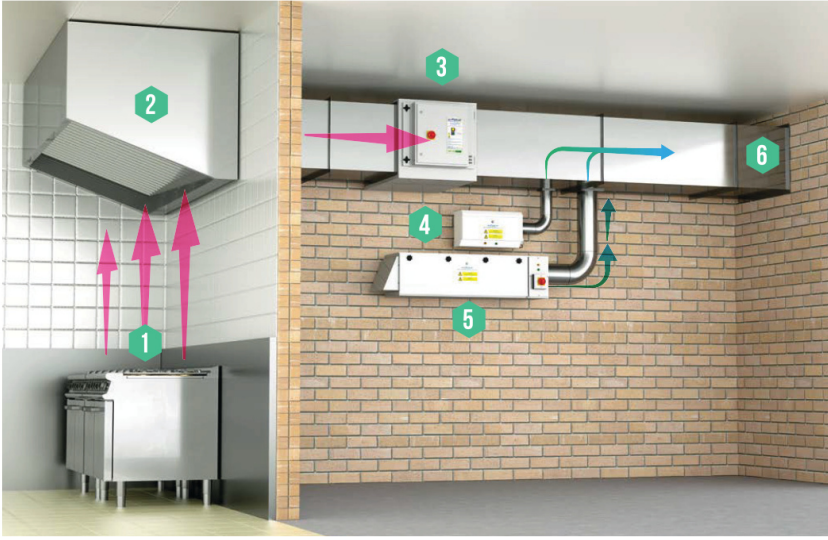
Unlike other UV-C systems, our UV-O units are located outside of the kitchen extract duct and are connected via a spigot and small diameter ducting. Although it is widely accepted that the best way to apply UV-C light is directly in-line with the air stream itself, performance will be impacted as the 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 gases within the duct.

3 TECHNICAL OVERVIEW

HOW IT WORKS



For optimum performance we would recommend between 2 & 6 seconds of dwell time to allow the ozone to work effectively upon the malodorous gases within the duct. When installed correctly our UV-C systems can reduce cooking odours by up to 90%*

01 Cooking particulates and odours

02 Canopy Grease Filter

03 ESP - Particulate Control Unit

04 UV-O 500

05 UV-O 1000

06 Ozone breaks down odours within the duct

4 TECHNICAL OVERVIEW

THE BENEFITS OF UV-O TECHNOLOGY

Reduces odours by up to 90%

Easy to retro fit

Low maintenance

Low pressure loss

TESTED & VERIFIED BY

This unit's tried and tested UV-C technology allows commercial kitchens to be sited 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.

OUR SERVICES

Design

Manufacture

Maintain

5 TECHNICAL OVERVIEW



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Odour Control

CLIENT

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