



Ducted Solutions

YOUR VENTILATION PARTNER FOR PLANNING APPLICATIONS

VENTILATION SURVEY REPORT

ASK Italian
Hanover House, Montpellier,
Cheltenham
GL50 1SD

Dated 15/02/24

VENTILATION SURVEY REPORT

15/02/24

Prepared For

BHM Two LLP
56d The Broadway
Mill Hill
London
NW7 3TE

Prepared By

Ducted Solutions Ltd
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Contact

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Issue To

Name	Company	Role
Trevor Clapp	Foundation Architecture	Architect
Henry Lennard	BMH Two LLP	Client
Michael Posner	BMH Two LLP	Client
Barry Prince	BMH Two LLP	Client

1. GENERAL BRIEF

- 1.1. ASK is a tenant occupying the entire property, including the first and second floor. ASK has decided to terminate its lease agreement for the upper floors situated above the ground floor restaurant. Consequently, the landlord plans to refurbish these upper floors for residential purposes, such as flats or apartments.
- 1.2. We have been tasked with assessing the potential impact of the existing restaurant ventilation system on future residents. Our objective is to identify any concerns and propose appropriate solutions to ensure the comfort and well-being of the future occupants.

2. EXECUTIVE SUMMARY

- 2.1. The assessment of the existing ventilation system revealed compliance with current standards but highlighted deficiencies in managing grease, smoke, odour, and noise. Limited access to internal ductwork and the roof, along with potential listing restrictions, necessitate careful planning for any modifications. Recommendations include installing an Ozone Generator for odour neutralization, upgrading fixings to anti-vibration mountings, extending ductwork to the roof, and incorporating an Electrostatic Precipitator and low-noise fan with silencer. These measures aim to enhance air quality, minimize noise disturbance, and ensure compatibility with the building's historic character.
- 2.2. Potential costs to implement the changes recommended (excluding any optional items, cranes, building or enabling works) would be in the region of £25,000 + VAT

3. EXISTING SYSTEM (Refer to DB-24-1001-00, 01 & 02)

- 3.1. Our assessor encountered difficulty accessing the internal ventilation ductwork due to a lack of keys for the panels. However, it was determined that the existing ventilation system complies with current standards, and there are no outstanding warnings (see CP42 in Reference).
- 3.2. The existing system lacks adequate management for grease, smoke, odour, and noise
- 3.3. The existing duct lacks anti-vibration mounting, contributing to potential noise and structural issues.

4. OBSERVATIONS

- 4.1. Installing mitigation equipment for the external ductwork must consider the possibility of the flat roof above the kitchen being used as a potential balcony for new occupants, thus limiting suitable equipment placement.
- 4.2. The supply fan and the lower part of the extract ductwork located on the flat roof above the kitchen could be disguised by a suitable removable screen. This would provide some degree of acoustic shielding and allow for use by a future resident.
- 4.3. The positioning of the existing extraction fan directs sound and odour towards sensitive receptors.
- 4.4. Limited access to the roof necessitates careful planning for installation and maintenance with crane access required for an installation
- 4.5. Given the likelihood of the building being listed, any alterations must be respectful of its historic character.
- 4.6. Access for maintenance of the existing extraction fan is restricted, requiring attention during any modifications.
- 4.7. Space between the canopy and duct, along with consideration for the size and weight of the necessary equipment required will limit or require the order in which equipment is positioned. i.e. The Electrostatic Precipitator cannot be installed before the Ozone Generator
- 4.8. Notwithstanding the Gas Engineers report (CP42), we are of the view that the existing canopy over the Gas cooking equipment (referred to as Canopy 1) is likely to be undersized, equally we have reservations regarding the presence of a gas interlock system (pending evidence to the contrary).

According to DW172, there must be a 300mm overhang from the front and side edge of any cooking equipment. However, the existing canopy measures only 1000mm deep, with equipment 720mm deep leaving a 280mm overhang.

This minor difference leaves the owner/operator to the discretion of an engineer who may or may not approve this arrangement. We would therefore recommend extending the canopy by a minimum of 100mm, preferably 200mm, to accommodate the extra 20mm plus the additional depth required by the gas manifold

Continued

5. RECOMMENDATIONS (Refer to DB-24-1001-03 & 04)

- 5.1. Installing of an Ozone Generator in the Kitchen to neutralize odours in the extracted air.
- 5.2. Re-evaluate the existing duct and canopies with access doors open, considering replacement of fixings with anti-vibration mountings.
- 5.3. Replace existing duct fixings on the outside wall with anti-vibration fixings and consider painting the duct to blend in with the building's aesthetics.
- 5.4. Remove the existing extraction fan and extend the duct onto the roof, routing through an existing balustrade with removable spindles.
- 5.5. Install an Electrostatic Precipitator (ESP) to remove grease and smoke from the extracted air.
- 5.6. Install a low-noise fan with additional silencer to minimize noise disturbance.
- 5.7. Mount all new equipment on anti-vibration mountings to reduce noise and structural impacts.
- 5.8. OPTIONALLY – Replace, or Extend the main canopy (Canopy 1) as per 4.7

6. FURTHER READING

- 6.1. Ventilation and Extraction Statement
- 6.2. 2D Plans and Elevation of the Existing Ventilation Arrangements (DB-24-1001-00,01 & 02)
- 6.3. 2D Plans and Elevation of the Proposed Changes to the Ventilation Arrangements (DB-24-1001-03 & 04)
- 6.4. Recommendations for Odour, Grease and Smoke mitigation from Purified Air Ltd
- 6.5. A copy of the CP42 (Gas Safety Inspection (Commercial Catering Appliances))
- 6.6. All technical documentation relating to the proposed equipment.



Ducted Solutions

YOUR VENTILATION PARTNER FOR PLANNING APPLICATIONS

VENTILATION & EXTRACTION STATEMENT

Property

**ASK Italian,
Hanover House, Montpellier,
Cheltenham
GL50 1SD**

Prepared on Behalf of

**BHM Two LLP
56d The Broadway
Mill Hill
London
NW7 3TE**

Dated
15/02/24



KITCHEN AND EXTRACTION STATEMENT - Based on the Existing System with Recommended Upgrades
Project Information

Project Name	ASK - Cheltenham					
Location	Hanover House, Montpellier, Cheltenham GL50 1SD					
Description of Location	High Street - Close to other food outlets with receptors and housing in close proximity					
Type of Establishment	Restaurant					
Anticipated Operating Hours	Mon - Fri	11:30	22:00	Sat - Sun	11:30	10:00
Proposed Use	Italian					

Description of Appliances and Kitchen Ventilation System

Thermal Calculation and Flow Rates

Equipment (Description)	Item	Qty	Width	Depth	Area (m ²)	App Co-Eff	Rate	Unit
GAS - Pasta Cooker	1	1	350	720	0.25	0.30	0.08	m ³ /s
GAS - Boiling Table / Hob Top / Stock Pot	2	1	700	720	0.50	0.35	0.18	m ³ /s
GAS - Boiling Table / Hob Top / Stock Pot	3	1	700	720	0.50	0.35	0.18	m ³ /s
ELECTRIC - Deep Fat Fryer	4	1	400	600	0.24	0.45	0.11	m ³ /s
ELECTRIC - Deck Pizza Oven Triple Deck	5	1	1380	1100	1.52	0.45	0.68	m ³ /s
Total Extract Rate (Theoretical)							1.22	m ³ /s
Canopy Factor (Open Both Ends - Overhead Wall)							1.25	
Extract Rate (Specific)							1.52	m³/s
Or							1524	l/s
Velocity (Ideal "6"/Max "9")							7.00	m/s
Area of Duct							0.22	m²
Recommended Duct Size (Dia)							ø560	mm
Recommended Square Duct Size							500	mm

Supply/Air Input

TOTAL Extract Rate (Specific)	1.52	m ³ /s
TOTAL Supply Rate (Between 75 & 90% of Extract)	1.30	m³/s
Or	1296	l/s
Velocity (Ideal "6"/Max "9")	7.00	m/s
Area of Duct	0.19	m²
Recommended Round Duct Size (Dia)	ø500	mm
Recommended Square Duct Size	450	mm

*Calculations based on the Thermal Convection method and DW172:2018 - 2nd Edition

Canopy Design

Please refer to the ventilation design provided in plan and elevation (attached). We have set the scale at 1:50, if printed on A3 paper

We have included for your reference a full set of specification sheets for all the equipment indicated in this document

All design considerations are based on guidance provided by HSE Catering Information Sheet No. 10: Ventilation in catering kitchens (2017), HSE Catering Information Sheet No. 26: Preventing exposure to carbon monoxide from use of solid fuel appliances in commercial kitchens (2016), BESA DW 172 Specification for Kitchen Ventilation Systems (2018), CIBSE Guide B2 Ventilation and Ductwork (2016) & Gas Safety (Installation and Use) Regulations 1998 (GSIUR) as amended. Approved Code of Practice and guidance (1998)

Canopy One

Type of Canopy	Open Both Ends - Overhead Wall
Material	Stainless Steel
Dimensions (mm)	3350(w) x 1000(d) x 570(h)

Canopy Two

Type of Canopy	Closed Both Ends - Overhead Wall
Material	Stainless Steel
Dimensions (mm)	1450(w) x 1400(d) x 600(h)

Extraction System

Type of Extraction System	Ducted
Duct Material	0.8mm Galvanised Steel
Duct Shape	Square
Duct Size (mm)	500

Ventilation Fans

Extraction

Type of Fan	Insulated Centrifugal Box Fan
Fan Details	System Air - MUB 042 500EC Multibox, #450910
Location	On flat roof with air conditioning equipment

Supply

Type of Fan	Axial Plate Fan
Fan Details	Unable to Identify - no change required

Continued...

The following 'Risk Assessment for Odour' has been derived from criteria outlined by DEFRA 2005, Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems Appendix C, which was subsequently updated by EMAQ in 2018. Odour control must be designed to prevent odour nuisance in a given situation. The following score methodology is suggested as a means of determining odour control requirements using a simple risk assessment approach.

*Based on the sum of contributions from dispersion, proximity of receptors, size of kitchen and cooking type:

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)	10	Discharging 1 m above eaves at 10-15 m/s
	Good (5)		Discharging 1m above ridge at 15 m/s
Proximity of receptors	Close (10)	10	Closest sensitive receptor less than 20m from kitchen discharge.
	Medium (5)		Closest sensitive receptor between 20 and 100m from kitchen discharge.
	Far (1)		Closest sensitive receptor more than 100m from kitchen discharge.
Size of kitchen	Large (5)	5	More than 100 covers (seated) or large sized take away
	Medium (3)		Between 30 and 100 covers (seated) or medium sized take away
	Small (1)		Less than 30 (seated) or small sized take away
Cooking type (odour and grease loading)	Very High (10)		Pub (high level of fried food), fried chicken, burgers, or fish & chips. Turkish, middle eastern or any
	High (7)		Vietnamese, Thai, Indian, Japanese, Chinese, or Steakhouse
	Medium (4)	4	Cantonese, Italian, French, or Pizza (gas fired)
	Low (1)		Most pubs (no fried food, reheating, sandwiches), Coffee shop.

Evaluation

Impact Risk	Odour Control Requirement	Significance Score*
Low/Medium	Low Level Odour Control	Less than 20
High	High Level Odour Control	20-35
Very High	Very High Odour Control	More than 35

Survey Result

Impact Risk	Odour Control Requirement	Significance Score
High	High Level Odour Control	29

Possible recommendation(s) based on this result

High level odour control may include

3. Fine filtration or ESP followed by carbon filtration (carbon filters rated with a 0.2 – 0.4 second residence time).
4. Fine filtration or ESP followed by UV ozone system to achieve the same level of control as point 3.

Recommendation

4. Fine filtration or ESP followed by UV ozone system to achieve the same level of control as point 3.

Air Quality Control

Grease & Smoke Control	
Primary Filter	Electrostatic Precipitator (ESP)
Primary Filter Details	Purified Air - ESP 4500E, Maximum Air Volume upto 2.1m ³ /s
Location	On flat roof with air conditioning equipment

Odour Control	
Primary Device	Ozone Generator (UV-O)
Primary Device Details	Purified Air - UV-O 1000, Maximum Air volume upto 2m ³ /s
Location	Located immediately after Canopy 2 (Refer to Design)
Secondary Device (Where Applicable)	Activated Carbon Filters (Carbons)
Secondary Device Details	Not Applicable
Location	Not Applicable

Air Changes Per Hour (ACH)

Kitchen Area (m ²)	43
Kitchen Ceiling Height (m)	3.3
Kitchen Volume (m ³)	142
Intended Air Changes Per Hour <i>(Between 15-60 ACH)</i>	39

Noise Control Measures

Primary Device	Silencer/Noise Attenuator
Primary Device Details	System Air - KKS 042 silencer-section, #276851
Location	After Fan
Secondary Device	Anti-vibration Mountings
Secondary Device Details	Mason Mountings
Location	Subject to further specification
Tertiary Device	
Tertiary Device Details	
Location	

Anticipated Noise Levels

The maximum level at the point of discharge of the extract should not increase the overall ambient noise level by more than 2dBA on completion of the installation. The use of vertical discharge, slow running fans and low duct velocities should help to achieve these levels.

Lowest Background Noise during Opening Hours (dBA)	59
Sound pressure level at 3m (20m ² Sabine)	48
Sound pressure level at 3m free field	34

Maintenance & Servicing Recommendations

Our recommendations are based on guidance provided by: BESA TR19 Fire Risk Management of Grease Accumulation within Kitchen Extraction Systems (2020) & BESA DW 172 Specification for Kitchen Ventilation Systems (2018)

Evaluation

Perceived level of grease production	Typical Example	Cleaning Intervals (months) Based on Daily Usage			
		upto 6 hours	6-12 hours	12-16 hours	16 + hours
Low	No significant production of grease laden aerosols during normal daily food production operations	12	12	6	6
Medium	Moderate production of grease laden aerosols during normal daily food production operations	12	6	4	3
High	Heavy, significant or continual production of grease laden aerosols during normal daily food production operations	6	3	3	2

Notes

Commercial liability/property insurance policies invariably contain conditions and warranties that stipulate a minimum cleaning frequency for grease extract ductwork systems under the insurance contract which can be a higher frequency of cleaning than TR/19 recommendations. Failure to comply with such requirements will invalidate the property insurance policy.

The canopy and canopy/extract plenum is an area of higher fire risk and consideration should be given to more frequent cleaning in accordance with insurers' requirements.

Periodic specialist cleaning should be accompanied by daily or weekly cleaning of canopies, filters and associated drains and traps in accordance with manufacturers' recommendations, typically carried out by the kitchen operator, in compliance with the property insurers' requirements.

Result/Recommendation

Perceived level of grease production	Typical Example	Cleaning Intervals (months)
Medium	Moderate production of grease laden aerosols during normal daily food production operations	6

Declaration

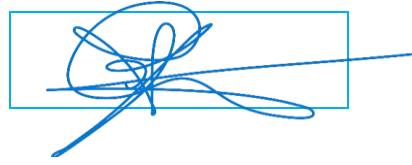
On behalf of Ducted Solutions Ltd and our client, we hereby declare that the information provided in this Kitchen and Extraction Statement is accurate and complies with all relevant regulations and standards

Document Completed

16 February 2024

Document Prepared & Signed By

Ian Clay - Director





Ducted Solutions

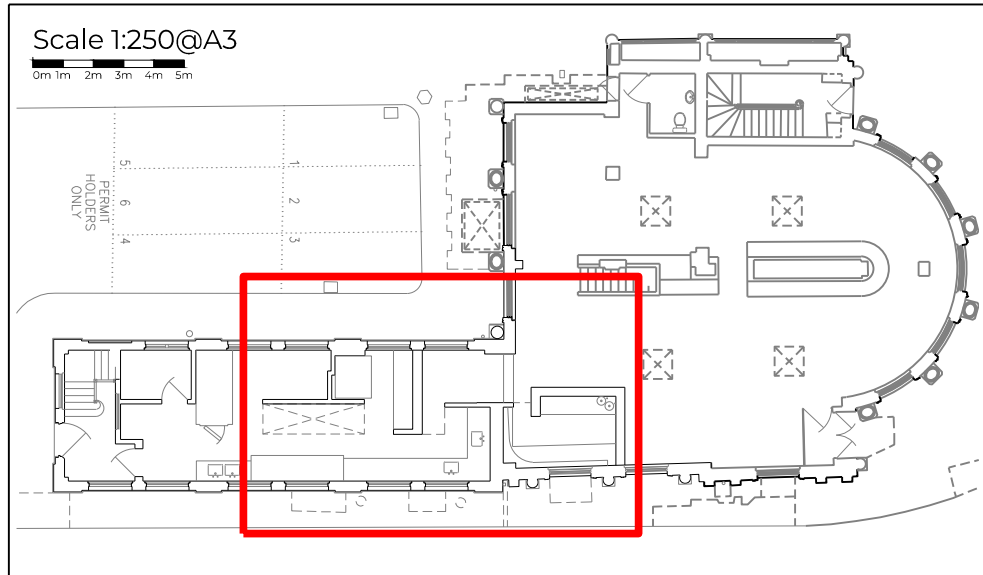
YOUR VENTILATION PARTNER FOR PLANNING APPLICATIONS

FURTHER REFERENCE





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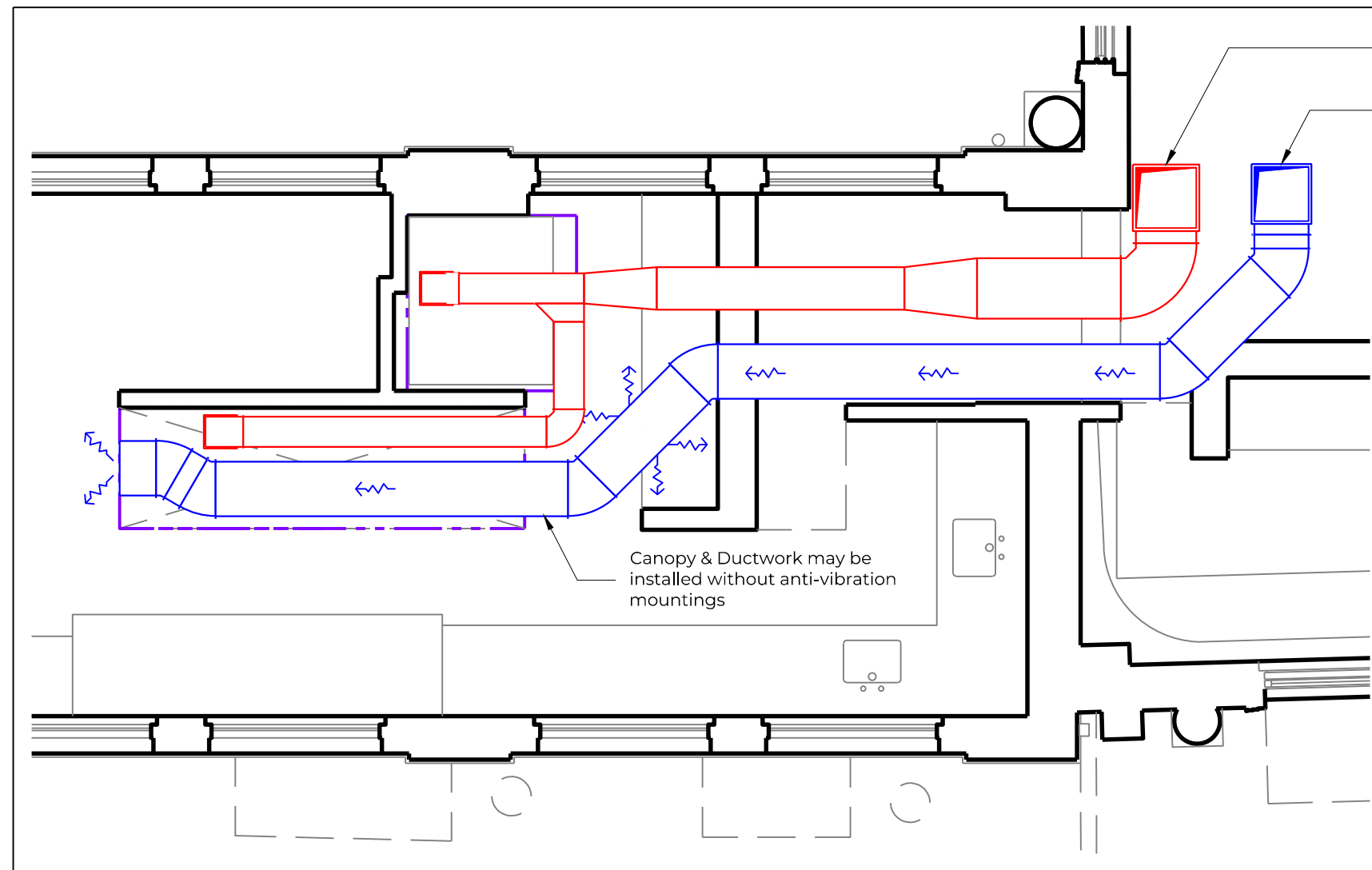


Ground Floor - Location PLAN

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Scale 1:50@A3

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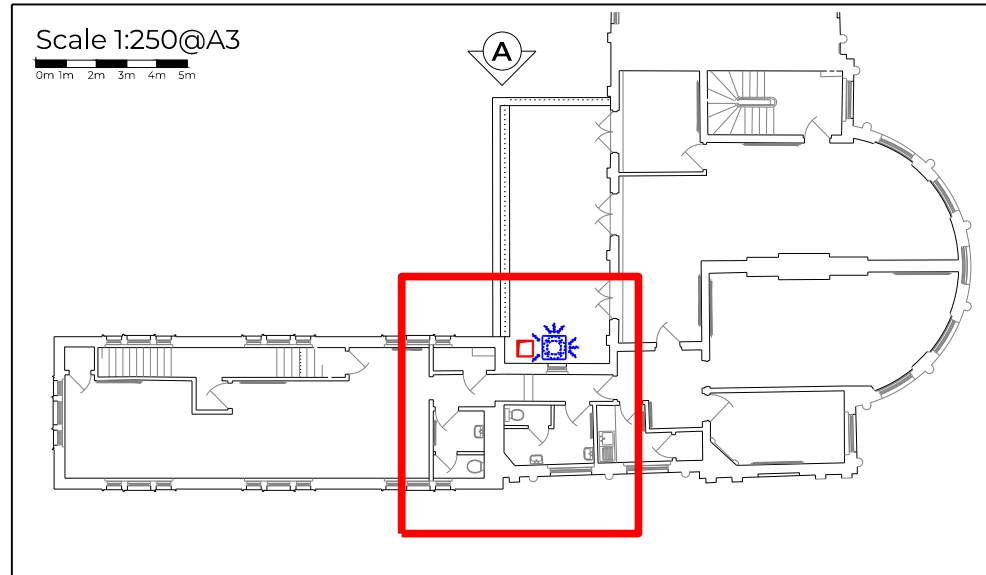
Existing Extraction Ductwork
Existing Air Input or Supply Ductwork

Canopy & Ductwork may be installed without anti-vibration mountings

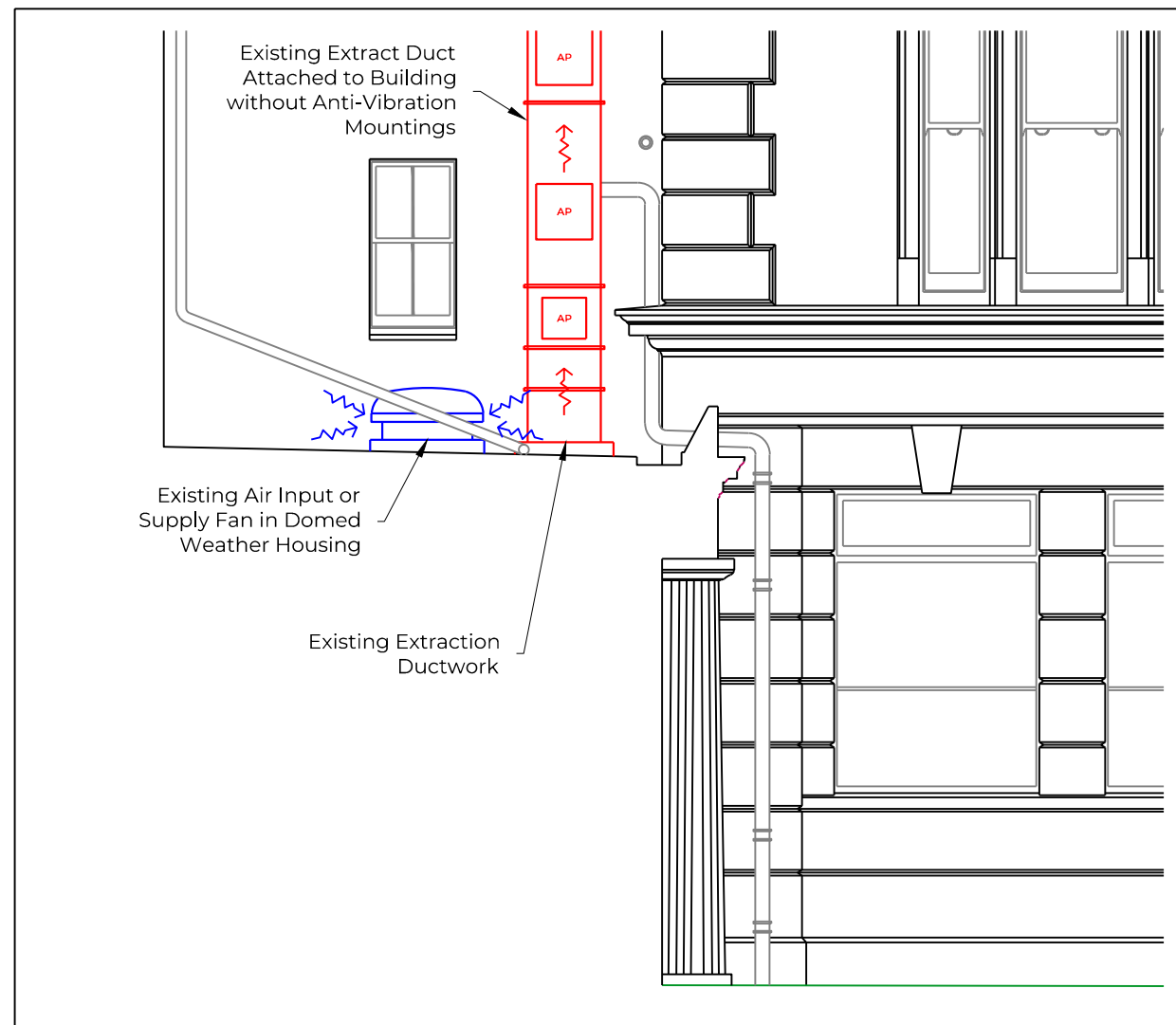
Plan View of Existing Ventilation Arrangement (Best Guess)



Scale 1:250@A3
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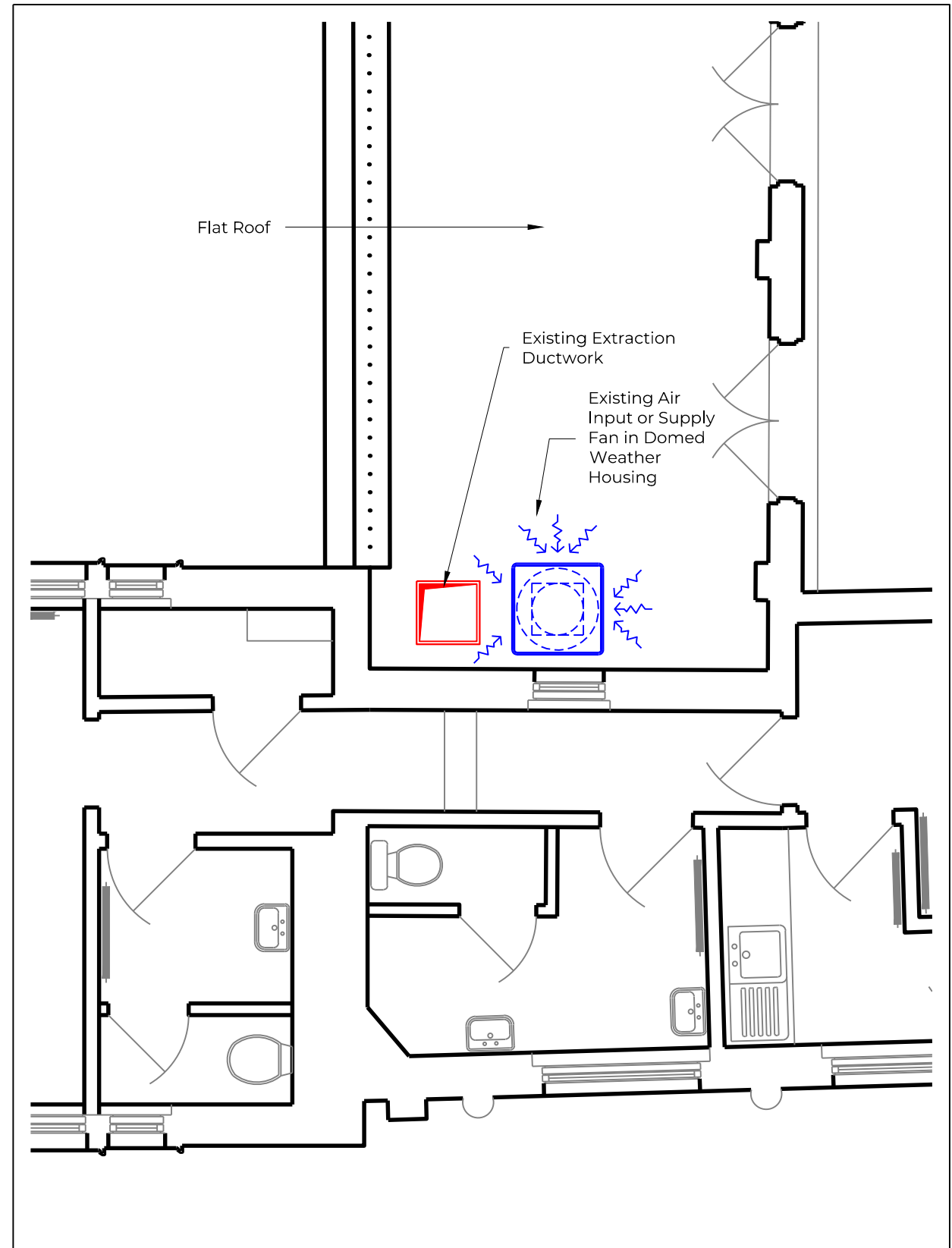
First Floor - Location PLAN



Elevation View of Existing Ventilation Arrangement seen from A

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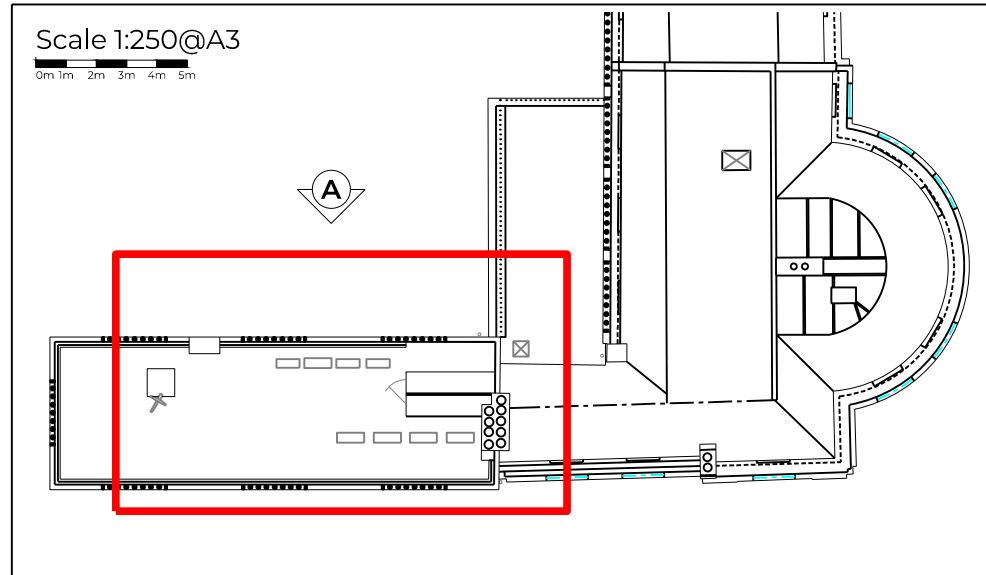
Scale 1:50@A3
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Plan View of Existing Ventilation Arrangement



Scale 1:250@A3
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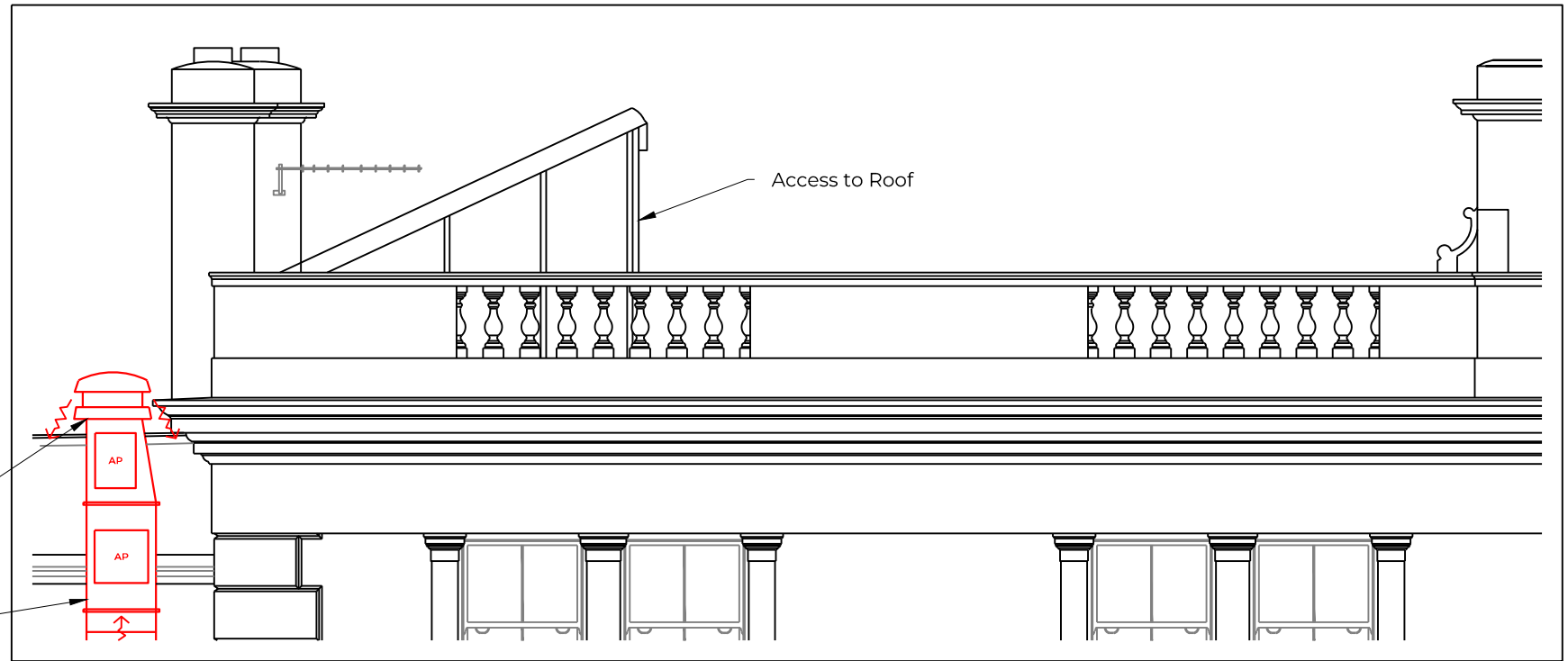
Roof - Location PLAN

Existing Extraction Fan Location with
Domed Weather Housing Forcing
Noise & Odour Downward Towards
Receptors/Residents

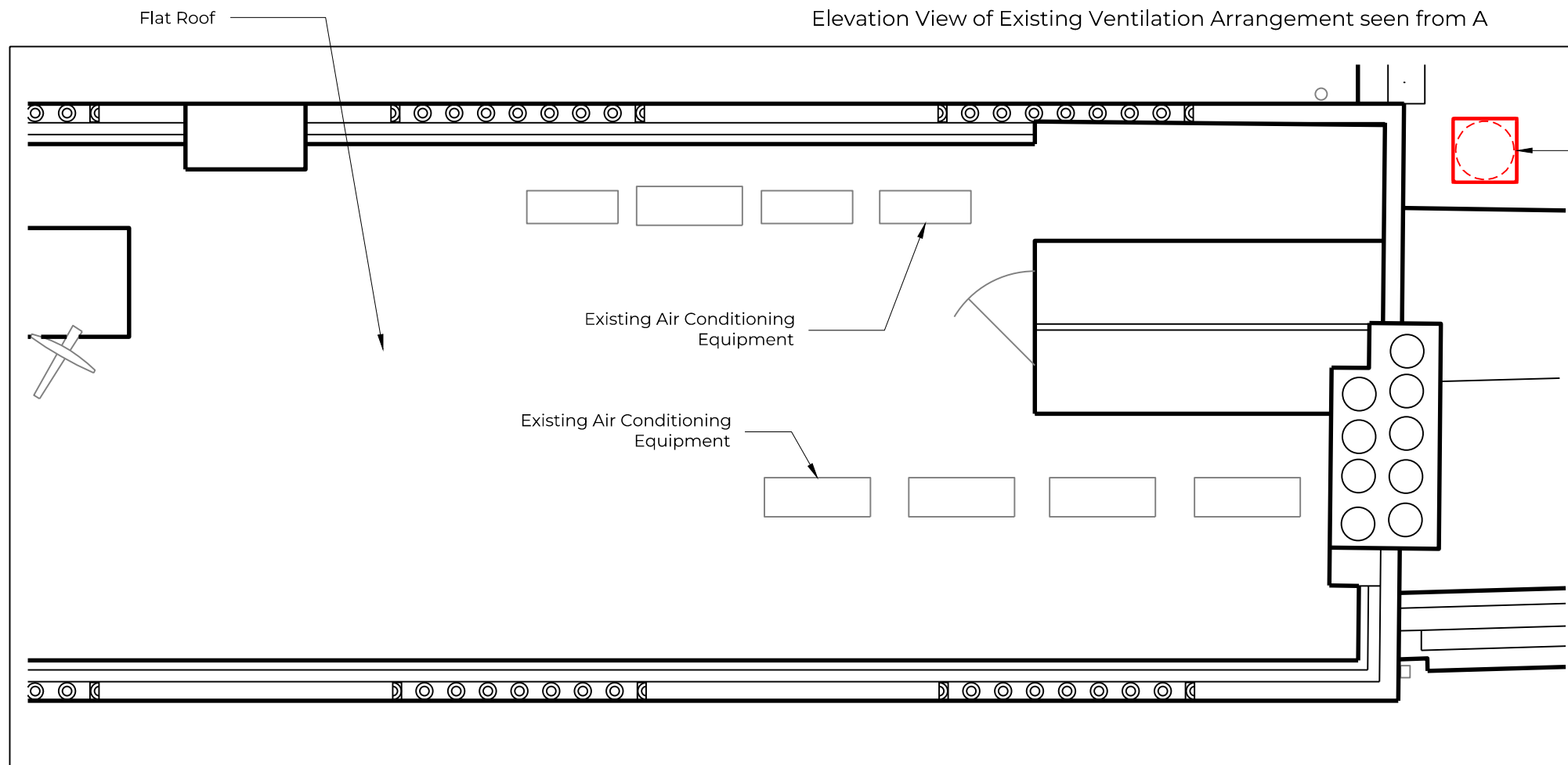
Existing Extract Duct Attached to Building without
Anti-Vibration Mountings

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Scale 1:50@A3
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Elevation View of Existing Ventilation Arrangement seen from A



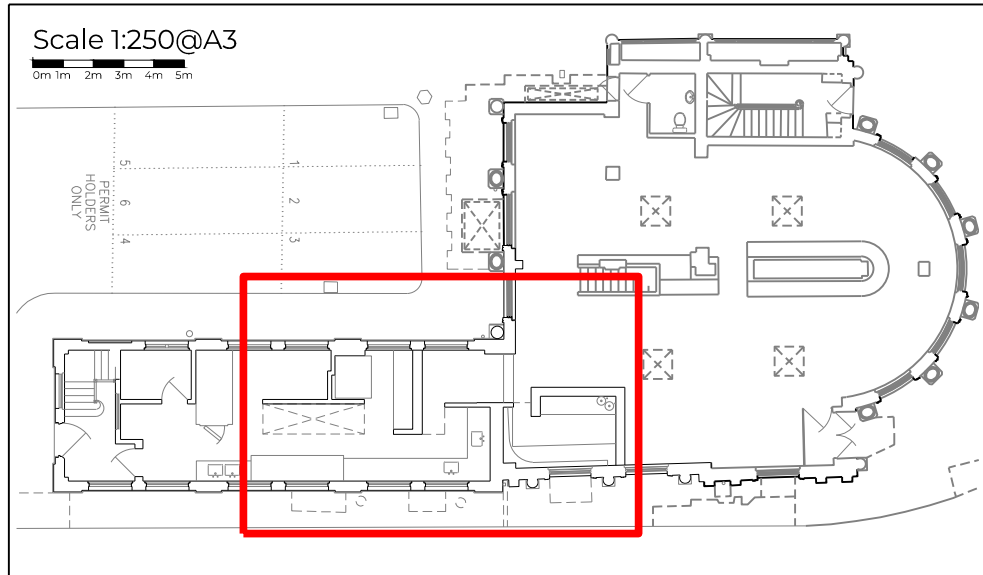
Plan View of Existing Flat Roof

Existing Extraction Fan Location with
Domed Weather Housing Forcing
Noise & Odour Downward Towards
Receptors/Residents



Scale 1:250@A3

0m 1m 2m 3m 4m 5m

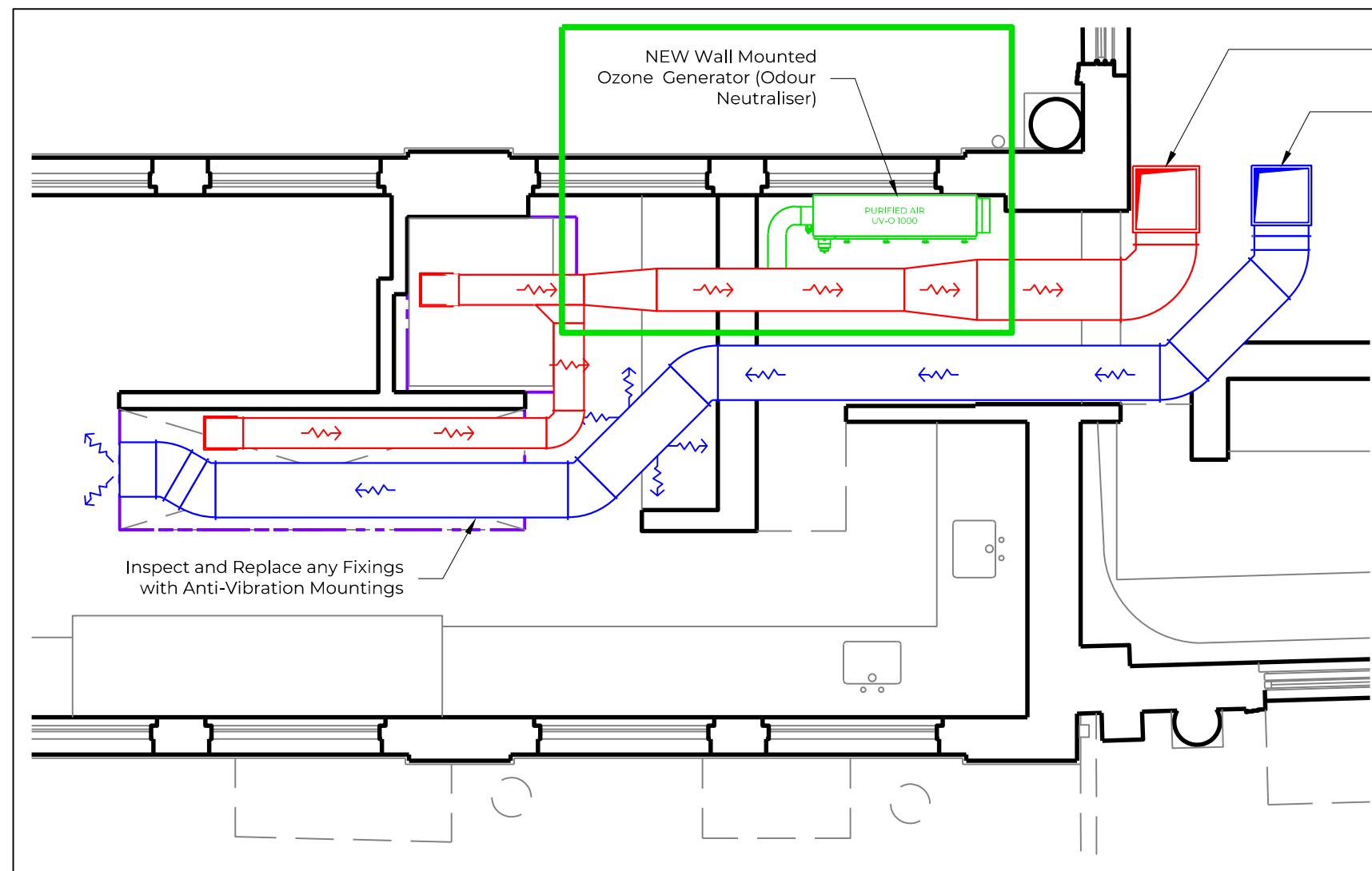


Ground Floor - Location PLAN

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Scale 1:50@A3

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Existing Extraction Ductwork
Existing Air Input or Supply Ductwork

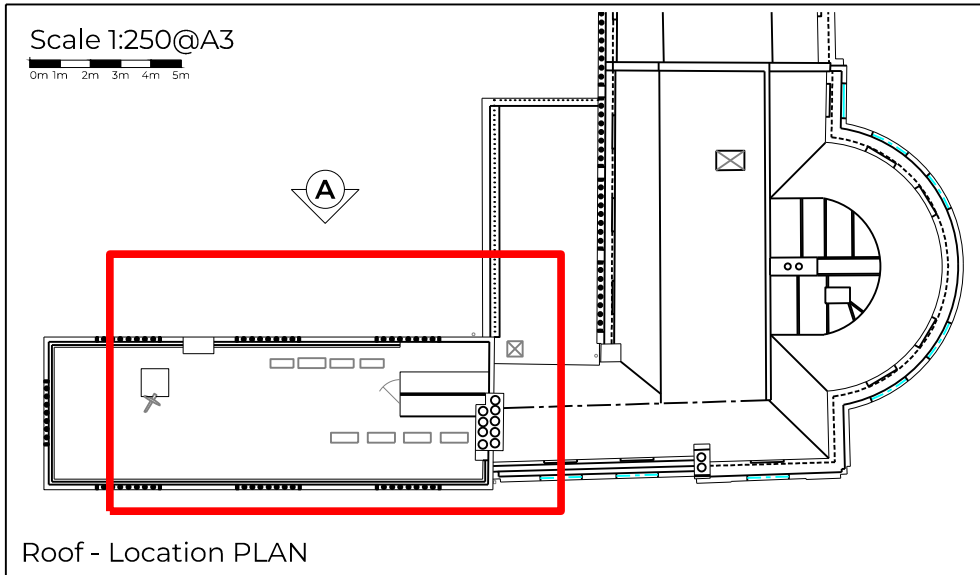
Inspect and Replace any Fixings with Anti-Vibration Mountings

UV-O 1000	
Technical Information	
Manufacturer	Purified Air
Description	Ozone Generator (Odour Control)
Model	UV-O 1000
Phase	1
Input power	0.7kW
Maximum airflow	2m ³ /s
Weight	50kg

Plan View of Proposed Ventilation Arrangement



Scale 1:250@A3
0m 1m 2m 3m 4m 5m



Roof - Location PLAN

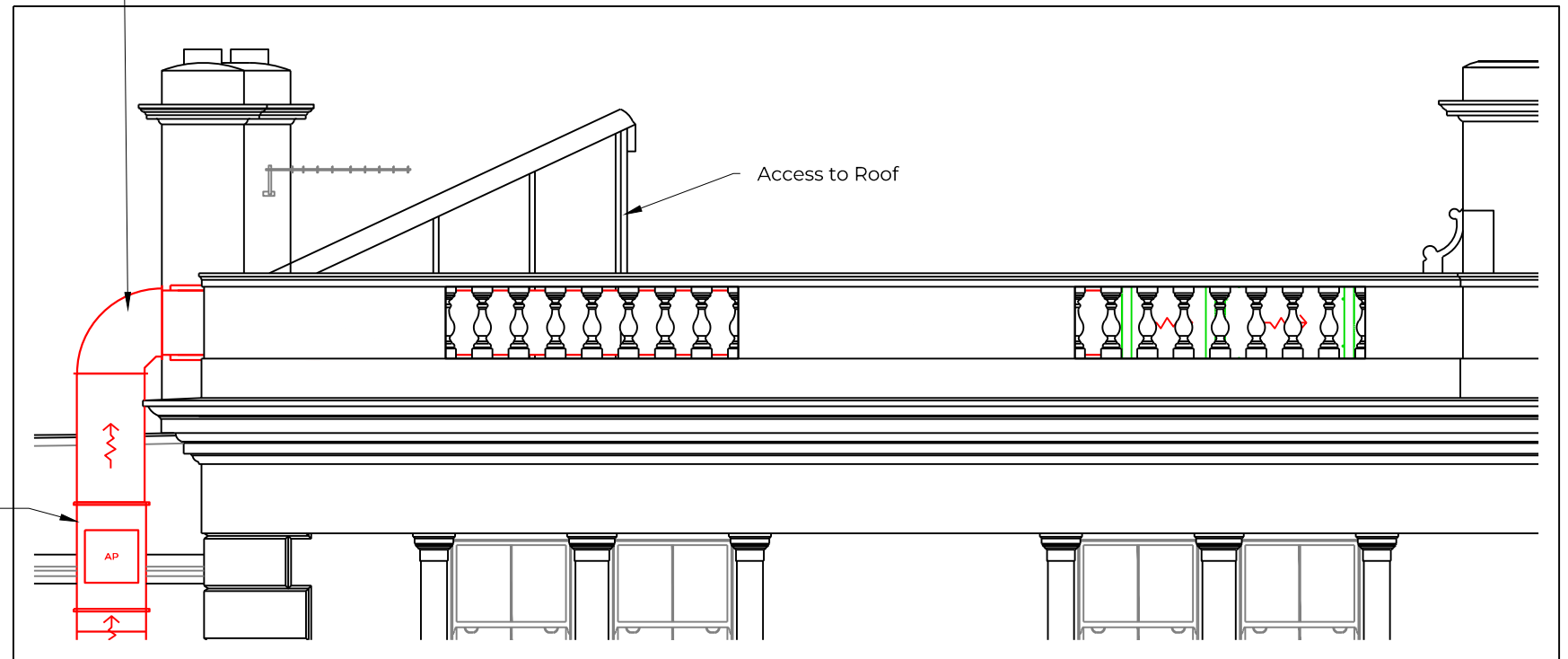
Existing & New Section of Duct to Attached with Anti-Vibration Mountings and Painted to Blend into Existing Building

Existing Extraction Fan Removed, Duct Extended Through Opening Formed in Balustrade

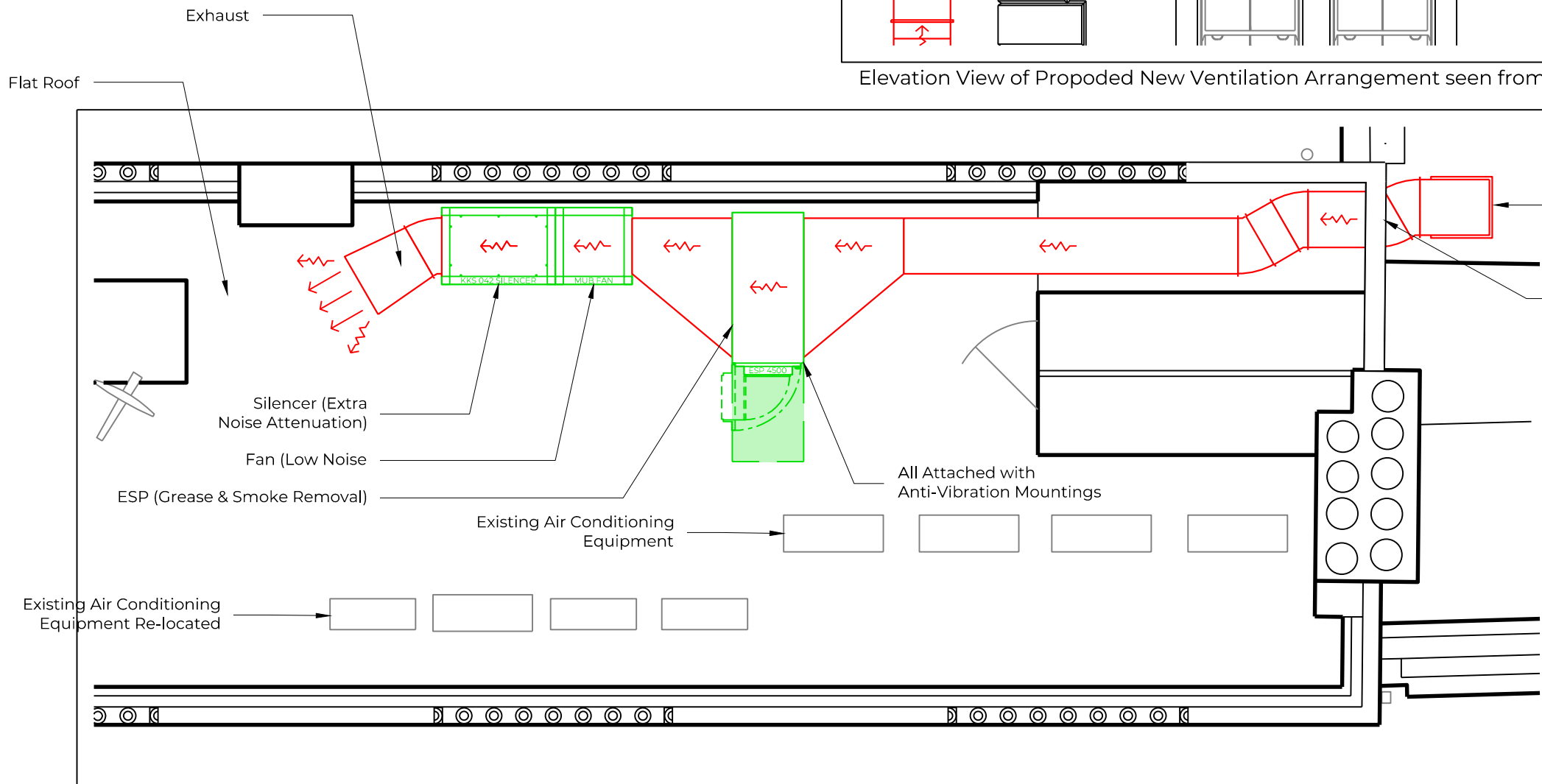
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Scale 1:50@A3

0m 0.5m 1m 1.5m 2m



Elevation View of Proposed New Ventilation Arrangement seen from A



Plan View of Flat Roof with Proposed NEW Equipment

MUB		ESP 4500E		KKS	
Technical Information		Technical Information		Technical Information	
Manufacturer	Purified Air	Manufacturer	Purified Air	Manufacturer	Purified Air
Description	Insulated Centrifugal Box Fan	Description	Electrostatic Precipitator (ESP)	Description	Silencer Section
Model	MUB 042 500EC	Model	ESP 4500E	Model	KKS 042
Flow	Straight	Phase	1	Ref	#276851
Ref	#450910	Input power	0.04kW	Weight	60.5kg
Phase	3~	Current	0.3A	Max Attenuation at 500Hz	23dB(A)
Input power	1.35kW	Maximum airflow	2.1m³/s		
Current	2.067A	Weight	118kg		
Max airflow	2.2758m³/s				
Max temp	60°C				
Motor type	EC				
Weight	63.5kg				
Sound power (LWA)	54 dB(A)				
Enclosure class, motor	IP55				
Insulation class	F				



Specification & EMAQ Report

Project Name: Ask - Cheltenham

Quotation Reference EH30207

Prepared for: Ian Clay (Ducted Solutions)

Prepared by: Emrys Hughes

Date: 14/02/24

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**AIR FILTRATION
EXPERTS**



**MARKET LEADERS
S I N C E
1984**

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INTRODUCTION

Interpretation of Requirements

Following our conversation today I am pleased to provide an equipment selection for an odour control solution.

As with any project we get involved in we always recommend to our clients that they should closely follow the EMAQ guide for guidance on odour control equipment selection.

This ensures that what they propose will be in line with local authority's requirements and if the system is maintained correctly, they will not exhaust nuisance odours leading to complaints from nearby residents.

With this in mind I carried out a risk assessment as detailed in Appendix 3 of the EMAQ Guide.

Taking into consideration the level of discharge, proximity of receptors, size of kitchen and cooking type your project requires a high level of odour control to comply.

We have scored as below and as taken from Appendix 3: Risk Assessment for Odour;

Risk	Score
Dispersions	10
Proximity Of Receptors	10
Size Of Kitchen	3
Cooking Type	4
Total Score	27

The type of odour abatement system that complies is as below, taken directly from the EMAQ Guide and must be to a **high level of control**.

Odour arrestment plant performance

Low level of odour control may include:

1. Fine Filtration or ESP followed by carbon filtration (carbon filters rated with a 0.1 second residence time).
2. Fine filtration followed by counteractant/neutralising system to achieve the same level of control as point 1.

PRODUCT OVERVIEWS

High level odour control may include:

1. Fine filtration or ESP followed by carbon filtration (carbon filters rated with a 0.2 – 0.4 second residence time).
2. Fine filtration or ESP followed by UV ozone system to achieve the same level of control as point 1.

Very high level of odour control may include:

1. Fine filtration or ESP followed by Carbon filtration (carbon filters rated with a 0.4 – 0.8 second residence time).
2. Fine filtration or ESP followed by carbon filtration and counteractant/neutralising system to achieve the same level of control as point 1.
3. Fine filtration or ESP followed by UV ozone system to achieve the same level of control as point 1.
4. Fine filtration or ESP followed by wet scrubbing to achieve the same level of control as point 1.

Criteria	Score	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 below 10 m/s
	Moderate	10	Discharging 1m above eaves at 10-15 m/s
	Good	5	Discharging 1m above ridge at 15 m/s
Proximity of Receptor	Close	10	Closest sensitive receptor between 20m from kitchen discharge.
	Medium	5	Closest sensitive receptor between 20 and 100m from kitchen discharge.
	Far	1	Closest sensitive receptor more than 100m 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 & chips. <i>Turkish, Middle Eastern or any other premises cooking with solid fuel</i>
	High	7	Vietnamese, Thai, Indian, <i>Japanese, Chinese, steakhouse.</i>
	Medium	4	Cantonese, <i>Italian, French, Pizza (gas fired)</i>
	Low	1	Most pubs (<i>no fried food, mainly reheating and sandwiches etc.</i>), <i>Tea rooms.</i>

PRODUCT OVERVIEWS

The System

Based on the 1.52m³/s flow rate the first stage of control should be the Electrostatic Precipitator ESP4500 unit, followed by the UVO 1000 unit.

(In cases where it is not possible to fit the UVO unit after the ESP unit due to a lack of dwell time, the suggestion would be to install the UVO unit as close to the canopy as possible to maximise the dwell time for the ozone to work effectively with the odours before discharging to atmosphere.)



Key Features

Eliminates up to 98% of oil, grease and smoke particles

Filters particles down to sub-micron levels

Produces Ozone to help reduce malodours

Designed with an integral sump

As our ESP's have been specifically designed for kitchen extract and not modified from industrial use, they have integral sumps to collect the oil, grease and smoke particles filtered out of the exhaust; this not only simplifies servicing but eradicates potentially dangerous spillage from the bottom of the units and greatly cuts down on flammable build-ups within the duct run.

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

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

The Electrostatic Precipitator is a very efficient means for separating the particulate phase; operating efficiency when clean can be as high as 98% at particle sizes down to 0.01 micron.

The Electrostatic Precipitator does not present a high-pressure loss (175PA approx. dependant on air flow). This gives a specific advantage in that most standard Kitchen extractor fans will have the capability of overcoming this small differential.

This is particularly advantageous when it is considered that if the pressure loss were high larger noisier fans would probably be necessary resulting in potential noise pollution.

PRODUCT OVERVIEWS

UVO



Key Features

Easy to install

Can be retro-fitted into existing duct

Virtually no pressure loss

No monthly maintenance needed

After the ESP our UVO1000 unit should be fitted; this uses UV technology by producing Ozone to neutralise the cooking odours.

This will be designed and installed with a 0.2s dwell time ensuring the system designed meets EMAQ guidelines.

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.

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

Although it is widely accepted that the best way to apply UV-C is directly in-line with the air stream itself, this can incur the problem of the lamps getting dirty and thus greatly reducing their effectiveness.

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.

As with our UV-C range, for optimum performance we would recommend 2 seconds of dwell time to allow the ozone to work effectively upon the malodorous gasses within the duct.

As you can see the system that has been specified is in line with EMAQ guidance.

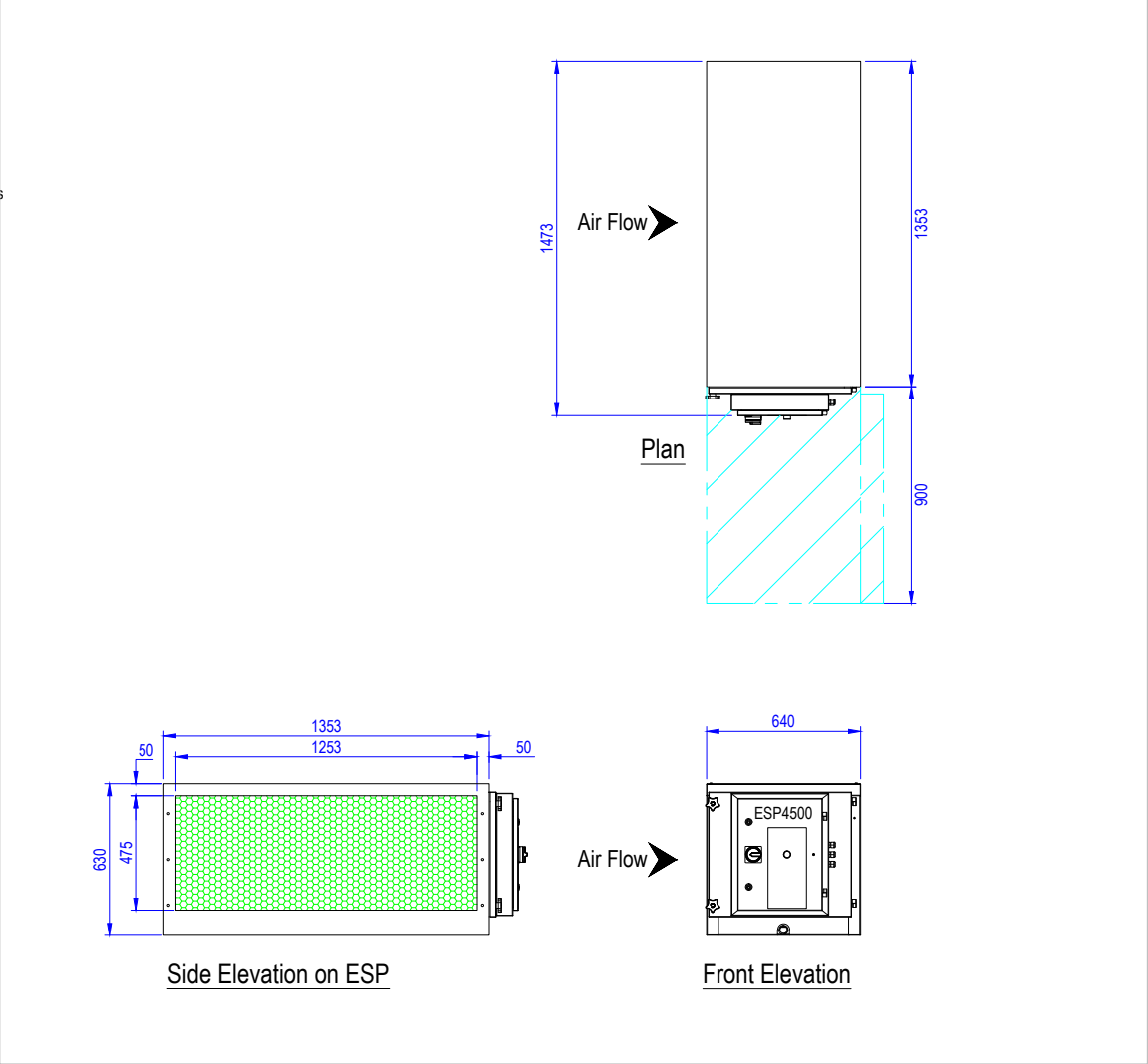
TECHNICAL SPECIFICATIONS (per unit)

1No. ESP 4500E Unit.	
Air Volume Max	2.1m ³ /s
Electrical Supply	220/240V 50Hz 1ph
Power Consumption	50 W
Weight each	118kg
Min/Max Working Temperature	4/56°C
Max Relative Humidity	75%

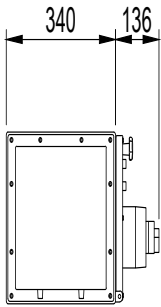
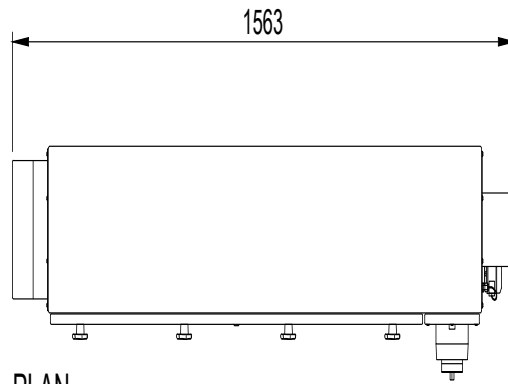
1No. UV-0 1000 Unit.	
Air Volume Max	2.5m ³ /s
Electrical Supply	220/240V 50Hz 1ph
Power Consumption	700 W
Weight each	50kg
Min/Max Working Temperature	4/56°C
Max Relative Humidity	75%

TECHNICAL DRAWINGS

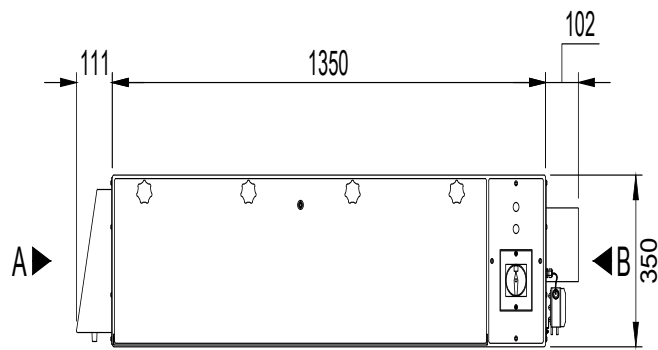
ESP 4500



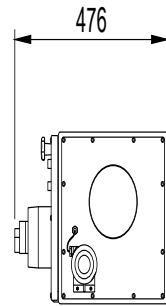
UV-0 1000



SIDE ELEVATION ON 'A'



FRONT ELEVATION



SIDE ELEVATION ON 'B'

Equipment Quotation

We are pleased to provide the following pricing.

QTY	Item	List Price	Discount Rate %	Unit Price Less Discount (£)	Total Price £
Electrostatic Precipitators					
1	Electrostatic Precipitator ESP4500	£4,350.00			£4,350.00
1	UVO- 1000 Unit	£3,325.00			£3,325.00
1	Commissioning				£275.00
1	Delivery				£200.00

We quote the nett sum of £8,150.00 + Vat

Lead Time

3 - 5 days from receipt of order.

Validity

Prices are valid for 90 days.

Payment Terms

TBA.

Guarantees

Units are guaranteed for one year providing maintenance is carried out in accordance with manufacturer recommendations.

Terms and Conditions

This quotation has been prepared taking into account our standard terms and conditions and is subject to these terms and conditions which are attached.

Unless otherwise agreed in writing the terms and conditions of this agreement shall apply to any order placed by the customer. In the event of any inconsistency between these terms and those passing between the parties these terms shall prevail. No variation of the terms and conditions shall be allowed unless expressly accepted in writing.



ACCREDITED AND CERTIFIED BY



Thank you for the opportunity to provide the specification and EMAQ report. Should you have any questions or queries please get in touch.

Emrys Hughes

Business Development Manager

M 07538192289 | **T** 01708 755 414

Emrys.hughes@purifiedair.com

purifiedair.com

Lyon House, Lyon Rd, Romford, Essex RM1 2BG



Gas safe is a registered trademark of HSE and is used under licence.

Details of Registered Business
 Gas Safe Register No: 230233
 Registered Engineer's Name: Gas - Andrew Henderson
 Gas Safe Register Licence No: 5419287
 Business: Sherwoods
 Address: Vander House, Brunel Road
 Newton Abbot
 Postcode: TQ12 4YQ
 Contact No: 0845 271 2782

Details of Site
 Name (Mr/Mrs/Miss/Ms): RNW Helpdesk
 Address: RNW - ASK Cheltenham,
 RNW - ASK Cheltenham - Hanover House Montpellier Walk,
 Cheltenham
 Postcode: GL50 1SD
 Contact No:

Details of Customer/Landlord
 Name (Mr/Mrs/Miss/Ms): Wayne Todd
 Address: RNW Holding Ltd
 on behalf of Azzurri, Willow Park, Wash Road, Basildon,
 Basildon
 Postcode: SS15 4AZ
 Contact No: +447883831219

Gas installation details

Emergency Isolation for Catering area provided? Yes

If yes - location satisfactory? Yes

If yes - is it accessible? Yes

If yes - is valve of suitable type? Yes

If yes - is valve handle secured in place? N/A

Is a Gas Emergency Notice present? Yes

Is gas isolation provided via an auto electric system? Yes

If yes - is the system fitted with automatic pressure proving? Yes

If yes - do all appliance burners have flame safeguards? Yes

Alternatively, is the system manually reset? Yes

If yes - is there attached a notice regarding resetting? No

Is there any evidence of corrosion of gas pipework? No

If yes - detail any action required

Has the gas installation been tightness tested? Yes

If yes - is the gas installation tightness satisfactory? Yes

Detail remedial work required to resolve any shortcomings on Part B

Pipework within the catering area

Are the correct materials in use? Yes

Is the pipework correctly identified / labelled? Yes

Is pipework correctly supported throughout? Yes

Are pipe sleeves extended through walls/floors etc? Yes

Suitable purge points fitted? Yes

Suitable test points fitted? Yes

Electrical protective bonding fitted where required? Yes

Detail remedial work required to resolve any shortcomings on Part B

Safety information

If Warning Notice issued insert Classification and Serial No.

Has a Warning Notice been issued? No Classification

Have Warning Labels been affixed? Serial No:

Has a responsible person been advised?

Ventilation/extract and air quality systems

Is a canopy system installed? Yes

If yes - is the canopy overhang correct? Yes

Record type of filtration (e.g. mesh/baffles/UV) Baffles

Filtration adequately maintained? Yes

Mechanical extract provided? Yes

If yes - what is the flow rate in litres/sec? 2000l/s

If yes - is flow rate adequate? Yes

Is mechanical extract interlocked with gas supply? Yes

Is interlock fitted with manual override? No

If yes - override disabled? N/A

If no, written report provided advising against use? N/A

Mechanical ventilation fitted? Yes

If yes - what is the flow rate in litres/sec? 1205

If yes - is flow rate adequate? Yes

If yes - mechanical ventilation interlock provided? Yes

If yes - does the interlock work correctly? Yes

Where required is natural ventilation provided? N/A

If provided give details: High Level cm2 Adequate?
Low Level cm2

Are adequate notices regarding ventilation provided? N/A

Automatic means of CO2 detection provided? Yes

If yes - is CO2 detection interlocked with gas supply? Yes

Air Quality Testing (in accordance with IGEM/UP/19)
 Average of 3 CO2 levels recorded within work area(s) during visit (refer to IGEM/UP/19)

First CO2 reading:	606ppm
Second CO2 reading:	782ppm
Third CO2 reading:	802ppm
Average of above 3 readings:	(1 + 2 + 3) / 3 = 730ppm

Results of Air Quality Testing Acceptable

Details of CO2 recording instrument: Make/Model Co2 vent check
 Calibration Date 31-10-2023 12:00

Detail remedial work required to resolve any shortcomings on Part B

Risk analysis of kitchen ventilation/extract system

Has risk assessment in accordance with IGEM/UP/19 been applied? Yes

If applicable what is the outcome of the Risk Assessment? Satisfactory

Declaration of Gas Safety - I confirm that this record is a true and accurate representation of the gas work carried out on the day of inspection. Relevant and appropriate duty-holders are required to ensure that gas appliances, installation pipework, ventilation and extract systems are maintained in a safe condition so as to prevent the risk condition of injury to any person.

Gas Safe Registered Engineers Signature

Date 27/10/2023

Serial No
PAD08/CPPM182825

COMMERCIAL CATERING INSPECTION RECORD PART B

Registered Business/engineer details can be checked at www.gassaferegister.co.uk or by calling 0800 408 5500



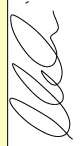
Appliances		Manufacturer's instructions available	Operating pressure (mbar) and/or heat input (kW)	FSD fitted to all burners	All appliance safety devices (including FSD's) operating correctly	Adequate ventilation arrangements	Adequate flueing/extract arrangement	Appliance Gas Isolation valve or self-sealing plug and socket fitted	Movable appliances fitted with appropriate gas hose with restraint fitted correctly	Appliance pipework gas tight	Appliance Safe to use
Type	Make										
1.	Hob	Angelo po	1gofao-como3	20	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2.	Hob	Angelo po	1gofao-como3	20	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3.	Pasta bake	Angelo po	Og1cp1g	20	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4.											
5.											
6.											
7.											
8.											
9.											
10.											
11.											
12.											
13.											
14.											
15.											

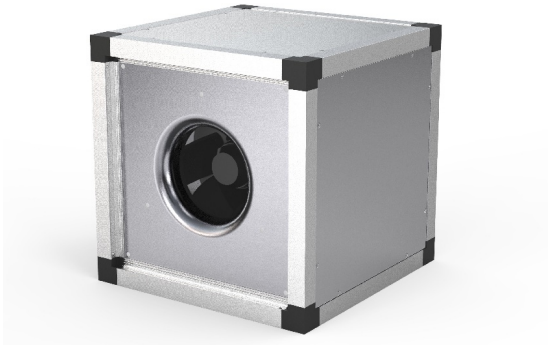
Additional works deemed necessary/recommended Essential/Recommended

2 rings failed on hobs either control or thermocouples will need appliance contractor to sort

Other comments

2 rings failed on hobs either control or thermocouples will need appliance contractor to sort

Overall Risk Analysis of kitchen ventilation and where provided, flue/chimney, or extract systems		This Inspection Record confirms the adequacy or otherwise of the commercial catering gas installation at the establishment detailed at the address on Part A of this record.	Gas Safe Registered Engineer's Signature 	Date 27/10/2023
Has risk assessment in accordance with IGEIM/UP/19 been applied	Yes			

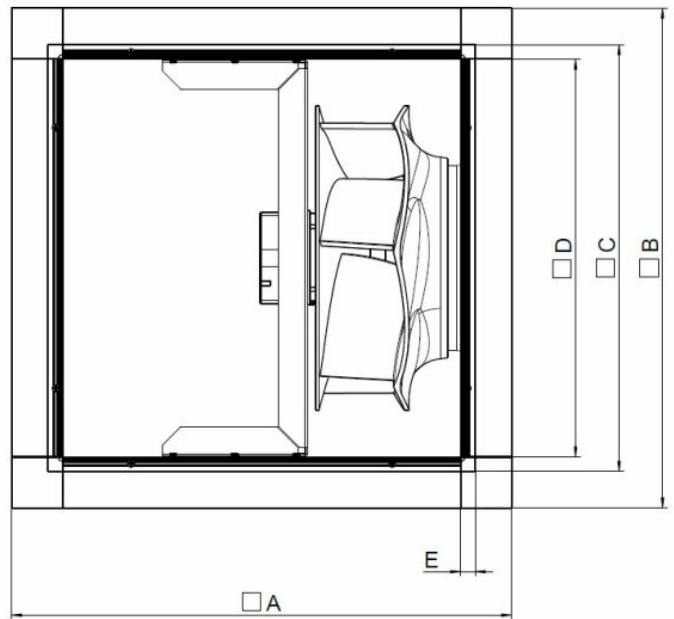


Technical parameters

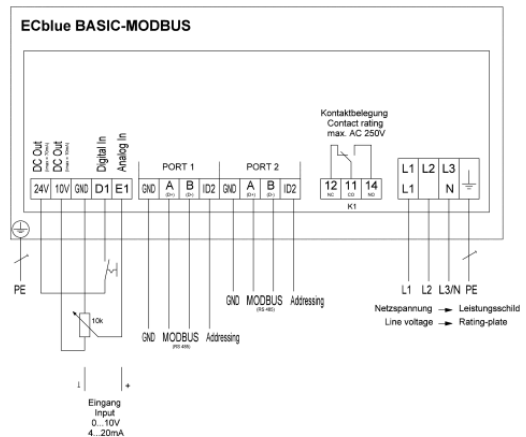
Nominal data	
Voltage (nominal)	400 V
Frequency	50; 60 Hz
Phases	3~
Input power	1,354 W
Input current	2.07 A
Impeller speed	1,680 rpm
Air flow	max 2.4967 m ³ /s
Temperature of transported air	max 60 °C
Max temperature of transported air, when speed controlled	60 °C
Protection/Classification	
Enclosure class, motor	IP55
Insulation class	F
Data according to ErP	
ErP ready	ErP 2018
Dimensions and weights	
Weight	63.5 kg
Others	
Motor type	EC

Dimension

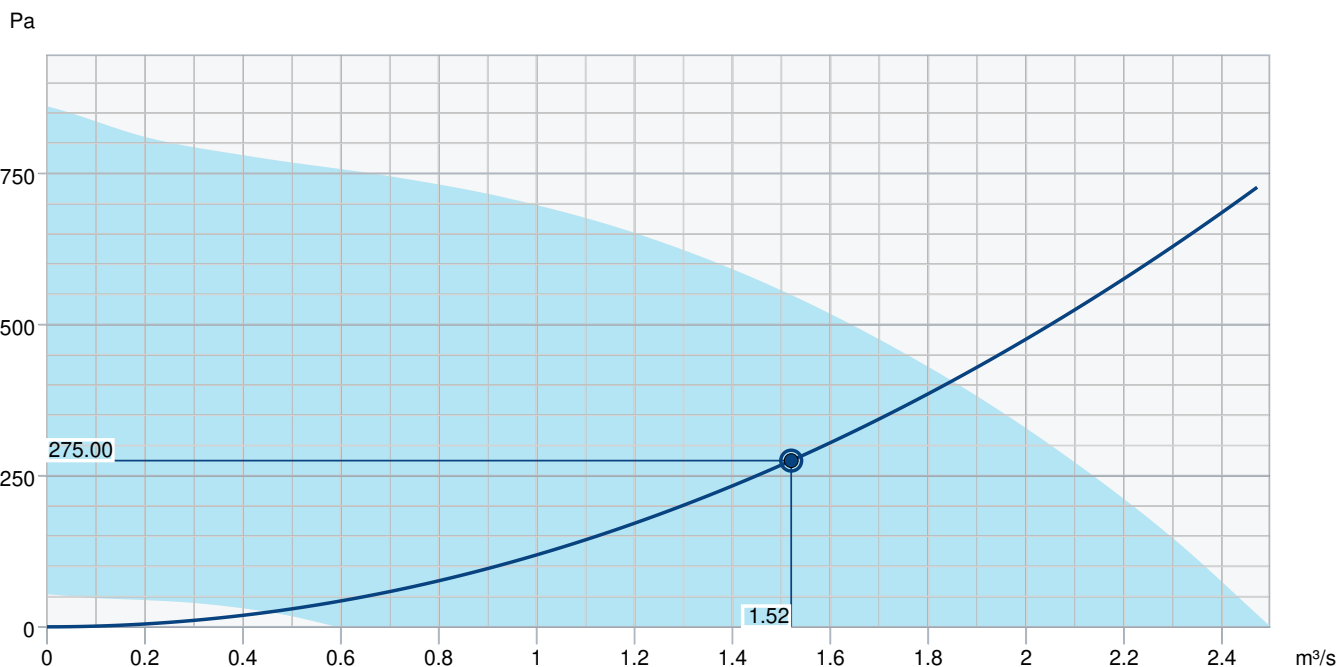
MUB 042	□A	□B	□C	□D	E
400/450/500	690	690	590	548	21



Wiring



Performance curve



Hydraulic data										
Required air flow	1.52 m³/s									
Required static pressure	275 Pa									
Working air flow	1.52 m³/s									
Working static pressure	275 Pa									
Air density	1.204 kg/m³									
Power	764.6 W									
Fan control - RPM	1,373 rpm									
Current	1.22 A									
SFP	0.503 kW/m³/s									
Control voltage	8.2 V									
Supply voltage	400 V									
Sound power level		63	125	250	500	1k	2k	4k	8k	Total
Inlet	dB(A)	47	69	61	67	68	65	64	52	74
Outlet	dB(A)	49	70	62	69	69	66	65	53	75
Surrounding	dB(A)	30	54	43	41	42	42	38	21	55
Sound pressure level at 3m (20m² Sabine)	dB(A)	-	-	-	-	-	-	-	-	48
Sound pressure level at 3m free field	dB(A)	-	-	-	-	-	-	-	-	34

Accessories

CXE/AVC Modbus (37256)	EC-Basic-CO2 and temperature (24806)
EC-Basic-H humidity (24807)	EC-Basic-T temperature (24805)
EC-Basic-U universal 0-10V (24806)	EC-Vent control board (3115)
EC-Vent Room Unit (3018)	FGV 042/586-586 flex. conn. (4605)
MTP 10, 10K, Speed control (32731)	MTV-1/010 Controller 0..10V+ (30650)
Potentiometer MTP 20, 0-10V (310220)	REV-5POL/05-7,5kW R/Y (35757)
SD-MUB Vibration pad set (37324)	Step switch S-5EC, 0-10V (76738)
Step switch S-5EC-2, 0-10V (449084)	UGS 042/500 adapter flex. (4357)
WSD 042 (730x730x70) complete (31481)	WSG 042 MUB complete (31485)
Presence detector/IR24-P (6995)	RT 0-30 Room Thermostat (5151)
TFR Temp. Sensor (5158)	CCM inlet MUB042 d400 (311780)
CCM inlet MUB042 d500 (311781)	CCM outlet MUB042 d400 (311682)
CCM outlet MUB042 d500 (311683)	CCMI outlet 042 d400 KIT 30mm (239093)
CCMI outlet 042 d500 KIT 30mm (239094)	GRU 042-690/100 (276661)
KKC-DX-L 042 cooling section (277261)	KKC-DX-R 042 cooling section (277265)
KKC-W-L 042 cooling section (277269)	KKC-W-R 042 cooling section (277273)
KKF 30 042-filter-section (93311)	KKH-HW 042 heater-section (93339)
KKS 042 silencer-section (276851)	SDM Service Door MUB 042 30mm (273934)

Documents

Installation, Operation and Maintenance instruction_001
 COMMISSIONING REPORT_FANS_160628_EN_001.PDF

KKS Filter Cassettes

[Find more details in our online catalogue](#)



KKS 042 silencer-section

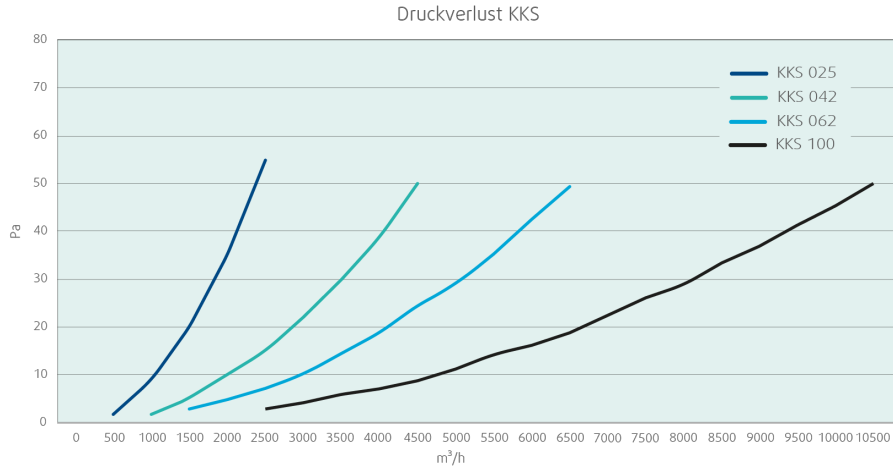
with 2 builtin splitters

Dimensions and weights

Weight

60.5 kg

Performances



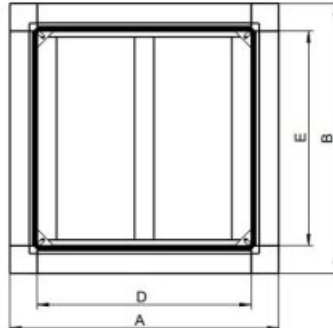
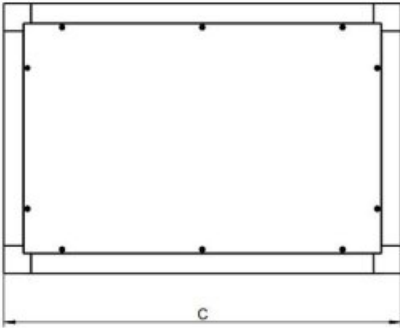
Acoustic

Type / Typ

Frequency / Frequenz

		Hz							
		63	125	250	500	1k	2k	4k	8k
KKS-025	dB	2	5	11	20	24	17	12	9
KKS-042		2	6	17	23	23	17	12	10
KKS-062		3	8	20	23	23	17	12	9
KKS-100		3	8	17	16	15	11	8	6

Dimension



Dimensions in mm	A	B	C	D	E
KKS 025	520	520	1020	378	378
KKS 042	690	690	1020	548	548
KKS 062	820	820	1020	678	678
KKS 100	1020	1020	1020	878	878