



Statement of Design Intent for

KITCHEN VENTILATION SYSTEM

serving

Miller & Carter Restaurant

109 Kidmore Road, Caversham, Reading RG4 7NH

Ref: B3829 Rev A (22/12/2022)

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This ventilation statement has been written in relation to 109 Kidmore Road, Miller & Carter Restaurant in Caversham, Reading.

The associated drawings that demonstrate the kitchen ventilation system are;

- MACCR-01 Concept Drawing, combined canopy and roof level. A copy is appended to the rear of this document.
- For reference an Aerial site photograph is appended to the rear of this document.

THE KITCHEN EXTRACT

The kitchen extract system consists of a single kitchen canopy mounted within a back of house open trade kitchen, ducted to roof level with vertical discharge stack.

The cookline is new in line with the brand kitchen. The airflow based on the DW172 Method 1 is to be not less than 3.5 m³/s or corrected in line with the appliances installed at the time of completion.

The Cookline appliances are gas and electric only and not solid fuel, the canopy is an overhead wall type.

The kitchen extract duct is to be Galvanised Steel, connected from the extract canopy, and routed through the rear wall and onto the roof above. The kitchen extract is routed across the flat roof to the kitchen extract fan. The extract duct rises as a vertical stack off the extract fan with reducing cone as a terminal.

The rear section of ductwork across the rear of the building is fire rated.

All Galvanised steel and fire rated ductwork being in accordance with DW144 & DW172. Grease tight construction without air turns within the duct.

Cleaning access panels provided at 1.5m centres along with bends.

Ductwork sized at 6-9 m/s with a discharge velocity of 15m/s, in line with DW172 recommendations.

Ductwork is to be installed in rectangular section.

The fan installed is a SystemAir MUB T 062 630D4, i.e. A Centrifugal, metal blade, Extract fan - 3 phase. Not as indicated on the MACCR-01 drawing.

THE KITCHEN SUPPLY

The kitchen supply system is new installed from the flat roof above the kitchen ducted to the kitchen canopy.

The cookline is new in line with the brand kitchen. The airflow based on 75% of the DW172 Thermal Convection Method, is to be not less than 2.5 m³/s or corrected in line with the appliances installed at the time of completion. The fan is to be Centrifugal type, metal blade, fan - 3 phase.

Ductwork sized at 4-6 m/s with a inlet velocity of 2m/s.

Ductwork is to be installed in rectangular section.

The fan installed is a SystemAir MUB 062 630D4, i.e. A Centrifugal, metal blade, Extract fan - 3 phase. As indicated on the MACCR-01 drawing.

The ducted system has an unbadged attenuator installed to the inlet and outlet of the supply fan.

A heater battery to temper the supply air is installed within the supply ductwork at roof level above the back of house area to the building.

The supply air filters, Course Grade 60% (G4) type, are located in a filter housing at the inlet to the supply duct system.

The tempered supply air to the kitchen is connected to a ceiling diffuser and canopy supply section for distribution to the kitchen environment.

The Kitchen Extract System has been reviewed in line with;

EMAQ+ Appendix 3 ; Risk Assessment for Odour

- Dispersion – moderate - 10 (at eaves level)
- Proximity – close – 10 (closest receptor less than 20m from discharge)
- Size of kitchen – large – 5 (more than 100 covers)
- Cooking Type – high – 7 (steakhouse)

Significance score = 32; high impact risk.

In line with the EMAQ+ recommendations for plant performance for high level odour control its recommended that the kitchen ventilation system includes Electrostatic Precipitators and UV injection along with the vertical stack dispersion as grease management and odour abatement systems.

The Primary Filters within the canopy are to be baffle type to minimise the grease entering the duct from the canopy.

For grease filtration it is recommended that the Electrostatic Precipitator units be of Purified Air manufacture. The units are being multiples of the ESP4500E designated unit, installed as a double stack arrangement in the common part of the extract duct system. The units selected be in line with the manufacturers air flow recommendations for the units. We would recommend a double pass arrangement i.e. double stack, double pass being 4No. Units inline prior to the extract fan.

For odour element it is recommended the UV injection units be of Purified Air manufacture. The units are to be of the UVO1000 designation. The units selected to be in line with manufacturers recommendations and are below the maximum air flow for the units. Its anticipated that 2 units will be installed.

The kitchen extract duct is to be routed across the flat roof and then taken vertically. In line with the manufacturers recommendation the kitchen extract duct is to be extended following the UV injection unit connection points to maintain a dwell time of at least 2 seconds. Based on the extract airflow rate at 3.5m³/s and an in duct velocity at 7.1m/s the duct length is anticipated as 14.3m length after the UV injection point.

The Electrostatic Precipitators and UV injection units are to be weather proof for locating externally on the flat roof above the Miller & Carter back of house area.

The stack location is to be maintained at roof level above eaves level of the building in clear air. The stack shall be vertical with a 15m/s efflux velocity at the termination.

KITCHEN EXTRACT & SUPPLY MAINTENANCE

Kitchen canopy mounted primary baffle filters are to be cleaned daily by the onsite operator, using the onsite Dishwashing/Cleaning Facilities.

Kitchen canopy external surfaces to be kept clean by on site operator.

Kitchen extract ductwork, extract fan and internal surfaces of kitchen canopy are to be cleaned by specialist cleaning contractor with a minimum of 4 cleans / inspections year, ideally quarterly.

We understand the Cleaning of ductwork is part of a Planned Preventative Maintenance contract. The ductwork shall be installed with accessible hatches along its route. Where ductwork can be cleaned using conventional methods of scrape and clean these are to be employed. It is anticipated that all sections both internally and at roof level, would be cleaned in this manner.

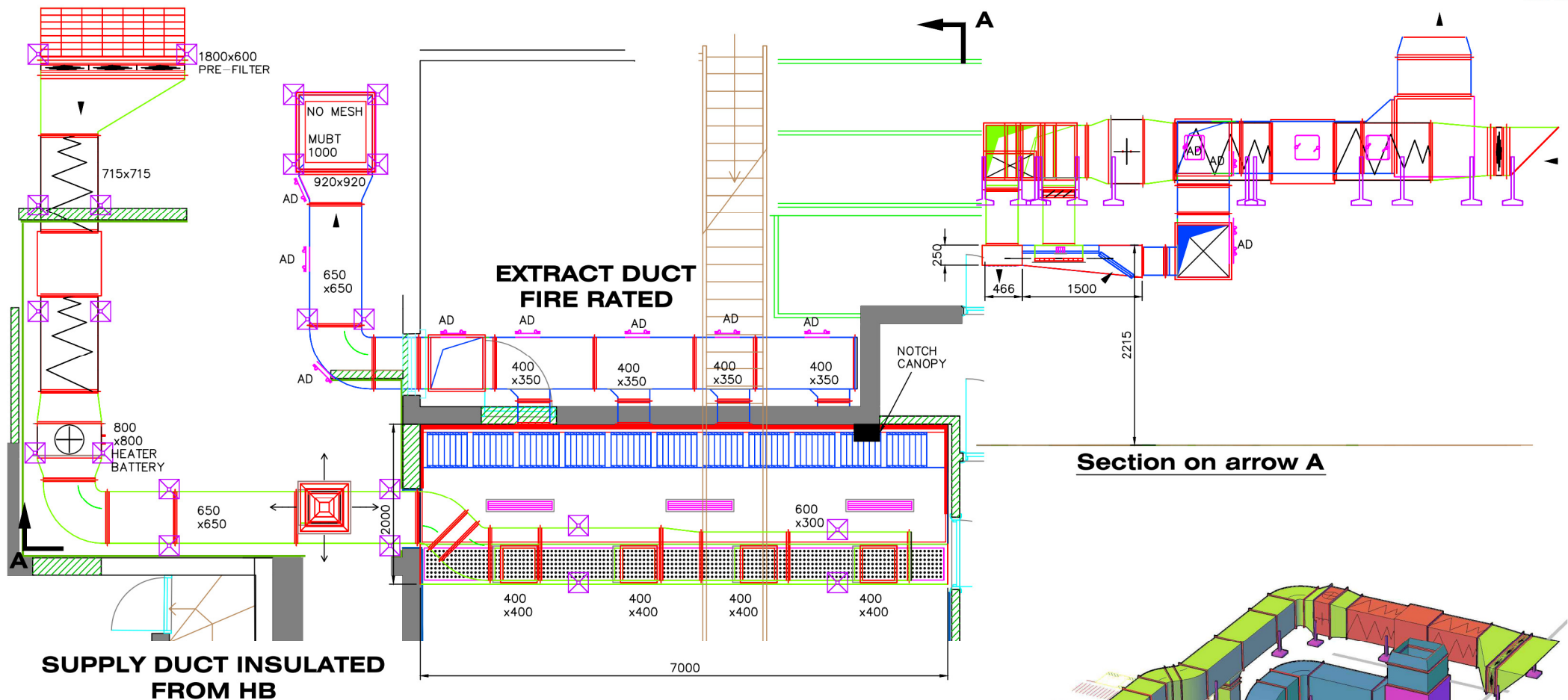
The Electrostatic Preceptor (ESP) is to be cleaned with internal plates exchanged on a 6 monthly basis. The Clean is part of a Planned Preventative Maintenance contract.

- The specialist contractor is to attend site with clean electrostatic plates. The Electrostatic Preceptor and extract fan are to be isolated electrically. The existing dirty electrostatic plates are to be removed from the ESP unit and packaged for removal from site. The existing ESP unit filter mesh at inlet and discharge of the unit are to be cleaned on site and replaced. The internal housing of the ESP is to be cleaned and the internal grease reservoirs emptied. The ESP is to be repopulated with the clean electrostatic plates and the systems brought back into operation.

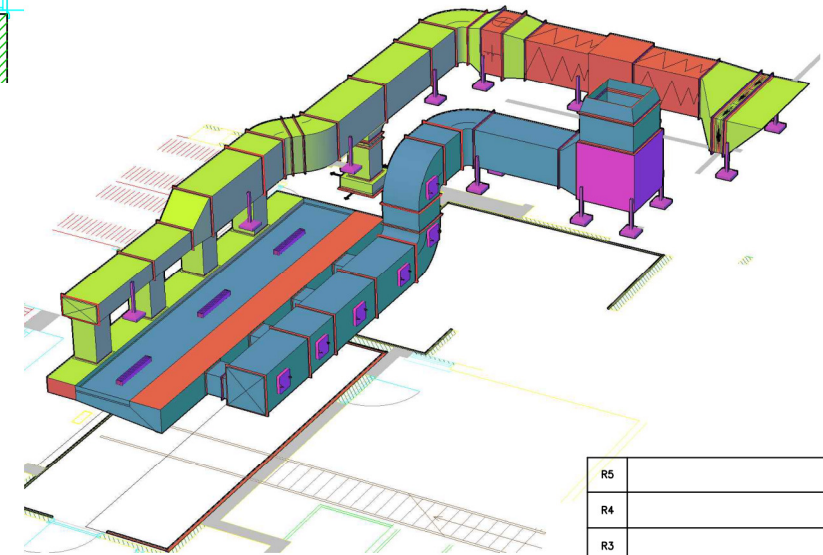
The UV injection units are to have an annual clean and change of UVC tubes. The Clean is part of a Planned Preventative Maintenance contract.

- The specialist contractor is to attend site with clean new UVC tubes and inlet filter for each unit. The units are to be isolated and opened. The existing tubes are to be collected and the old filter removed from the UV1000 unit housings. Each unit is to be cleaned internally and refitted with new UVC tubes and an inlet filter. The contractor is to test that all lamps function. Each unit is to be closed and operation tested to ensure the systems operate with the extract fans running.

Kitchen Supply filters (G4) shall be changed annually as part of the Planned Preventative Maintenance contract.



Section on arrow A



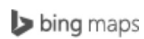
Extract Rate 3.3M3P/S
Extract Rate MUBT100 Weight
Supply Rate 2.8M3P/S
Supply Fan MUB630 Weight
Supply Heater Battery 63KW with Thyristor Controller
Canopy Size 7000x1500x400x250 TBC on site measure

CONCEPT



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CUSTOMER:	CONTRACT REF:	SCALE: 1:50 @ A3	R5	
CONTRACT: M & C CAVERSHAM ROSE	DATE: 29.06.22	DRAWN BY: RE	R4	
DESCRIPTION: VENTILATION DETAIL	DRG NO: MACCR-01	MATERIAL:	R3	
			R2	revised to comments
			R1	FOR APPROVAL
			REVISION:	



CAVERSHAM ROSE MILLER & CARTER
with approximate at 20m radius from kitchen
extract discharge.



Data from: Tripadvisor · Chefandbrewer