

1. Kitchen Ventilation Systems Description

1.1 3 x canopies Extract Ventilation System

The 3 x separate canopies are:-

Canopy 1 (existing Canopy) which has a calculated extract rate of 1.915m³/s

Canopy 2 (island canopy) which has a calculated extract rate of 1.085m³/s

Canopy 3 (fryer canopy) which has a calculated extract rate of 0.796m³/s

The total extract volume is 3.796m³/s with duct velocities, no higher than 9m/s

The EMAQ risk assessment for the kitchen extract system, would indicate a very high level of odour control, due to exhaust being at low level.

The kitchen extract fan would be a Flakt Woods Estoc Targe (Powerbox) model 102-630-3, high temperature rated with the motor out of the airstream, and with an external pressure availability of 700pa, however, once the final ductwork route has been established/confirmed, the system pressure should be recalculated, if different from the design drawing layout,

The fan should have a high temperature rated sound attenuator at the outlet of the extract fan.

The fan should have a speed controller.

Extract ventilation ductwork, would be manufactured and installed in accordance with the HVCA DW172 specification for commercial kitchens, with suitable access/cleaning doors, and where the ductwork exists the kitchen into the lower ground/basement floor, it will be 2 hour fire rated by the application of FireMac FM120.

The 2 x new canopies would be manufactured from 20swg 304 grade stainless steel, with a continuous perimeter condense channel, standard baffle type grease filters, and a high temperature rated LED strip light within.

Odour Control will include 1 x UVO1000 module with a 150mm dia duct connection, at each of the 3 canopies, 4 x ESP4500 modules in a stacked and 'double pass' configuration, and a carbon filter module, containing 18 x site safe carbon cassettes, each cassette measuring 600mm x 600mm x 200mm (nominal) and contained in a purpose built housing.

The odour control equipment should be manufactured by Purified Air Ltd

The exhaust terminal, should be a standard louvre, approx. 2000mm high x 1000mm wide, providing an exhaust velocity of approx.

1.2 Fresh (replacement) Air Ventilation System

As the cookline is gas fired, DEFRA guidelines call for fresh replacement air ventilation, at a rate of 80% of the extract air, so the fresh air volume is calculated at 3.0m³/s

The fresh air fan would be a Flakt Woods ePowerbox 80-630-3-4 with an external pressure availability of 450pa, however, once the final ductwork route has been established/confirmed, the system pressure should be recalculated, if different from the design drawing layout,

The fan should have 3 x sound attenuators at each of the window replacement fresh air intake louvres and have a speed controller.

The fresh air ductwork would be manufactured and installed in accordance with the HVCA DW144 specification, with access doors at each item of equipment.

Air would be supplied to the kitchen via the perforated stainless steel face diffusers on each canopy, and by dampered air nozzles as shown on drawings C726/5 and C726/6

The system should have an in-line electric heater battery, with fully integrated controls, that can raise 3.0m³/s of air by 21°C

The heater should have a temperature/air pressure probe, to allow the heater to be activated when there is proven airflow, and to stop the heater from operating when a set duct temperature of +20°C is measured.

A standard G4 filter module, to prevent ingress of insects/dust should be positioned between the large intake plenum and the electric heater.

The intake louvres would be window replacement units approx. 900mm x 600mm each, providing intake velocities of less than 2.5m/s