

02 July 2024

Decon PM Ltd
5-6 Charlotte Road,
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EC2A 3DH



For the attention of Mr. Alex Chapman

Re: STS1165 – Unit 21 Upper, The Printworks, Withy Grove, Manchester, M4 2BS – HVAC Odour Risk Assessment

The purpose of this document is to provide an odour control risk assessment for the proposed kitchen ventilation system serving the above development.

The risk assessment is required to discharge any condition on the planning approval relating to the control of cooking odour that may cause a statutory nuisance.

The risk assessment has been carried out in accordance with the EMAQ+ Control of Odour and Noise from Commercial Kitchen Exhaust Systems document prepared by Dr. Nigel Gibson dated 5th September 2018. (this is an update to the 2004 report prepared by NETCEN for the Department for Environment, Food and Rural Affairs)

The aim of any ventilation/extraction is to ensure that no nuisance, disturbance or loss of amenity is caused by odour, fumes, food droplets or noise, to adjoining properties and the general environment. Additionally, the impact of the flue to the character and appearance of the area is equally as important.

Please note that there are many different types of odour abatement available (carbon filters, electrostatic precipitation, high dilution and high velocity extraction) not all types are suitable for all cooking methods. In each case, grease filters must be installed. Please note that any reference to minimum standards within this document is for guidance only and more stringent controls may be deemed appropriate. To enable the Council to assess the suitability of a ventilation/extraction scheme the following information should be provided along with the risk assessment attached to the end of this document

Type	Details Required
Information on premises	<p>The following information should be supplied:</p> <ul style="list-style-type: none"> • the number of meals to be served per day; • the method(s) of preparation and cooking; • the types of meal served, • proposed hours of operation of the business and any ventilation plant
Plans and drawings	<p>Provide a scaled plan showing the internal arrangement of the premises and the dimensions/location of the ventilation system. The plan must contain external elevations of the buildings showing the;</p> <ul style="list-style-type: none"> • dimensions; • route; and • exhaust characteristics (i.e. appearance) of the ductwork in relation to the building. <p>The location of all filters and the fan must be clearly marked. Where the location of a filter is shown the type must be clearly identified and cross-referenced to the detailed product specification.</p>
Pre-filters	<p>A copy of the manufacturer's product data sheet should be supplied clearly showing:</p> <ul style="list-style-type: none"> • manufacturer's name; ECOFLEECE • filter name and product code; • dimensions of the pre-filter; 500x400x45 • nature of the filter media; and 100% LAMBSWOOL FITTED TO STAINLESS STEEL BAFFLE FILTER • manufacturer's recommendations on the frequency and type of maintenance of the pre-filter having regard to the conditions that it will be used under. REFER TO ECOFLEECE DOCUMENTATION
Electrostatic precipitators (where proposed)	<p>A copy of the manufacturer's product data sheet should be supplied clearly showing:</p> <ul style="list-style-type: none"> • manufacturer's name; • ESP name and product code; • dimensions of the ESP; • flow rate rating; and • Manufacturer's recommendation on the frequency and type of maintenance of the ESP having regard to the conditions that it will be used under
Carbon Filters (where proposed)	<p>The details and type of carbon filter units should be identified. A copy of the manufacturer's product data sheet should be supplied that clearly shows:</p> <ul style="list-style-type: none"> • manufacturer's name; • filter name and product code; • dimensions of the filter panel; and • the total number of filter panels in the filter bed. The following information should also be included: <ul style="list-style-type: none"> • the nature of the carbon (including product type); • the frequency of replacement of the carbon units having regard to the conditions that it will be used under. The assumptions to this calculation must be clearly stated, including the frequency and duration of use. The manufacturer should provide recommendations on the frequency and type of maintenance required; • total volume of carbon expressed in cubic metres; • total mass of carbon expressed in kilograms; • total surface area of the panels exposed to the exhausted air; and • dwell time of the gases in the filter compartment and the control setting at which this is achieved. The assumptions to this calculation must be clearly stated and should include the air change rate for the setting quoted.

Odour counteractant or neutralising system (where proposed)	<p>The details and type of counteractant or neutralising system should be identified. A copy of the manufacturer's product data sheet should be supplied that clearly shows:</p> <ul style="list-style-type: none"> • manufacturer's name; ECOVERY INNOVATIONS LTD • name of delivery system and product code; CONTROLLED OZONE CVS200 & CMS200 • counteractant or neutralising chemical to be used; • COSHH data sheets for chemical to be used; and • anticipated counteractant or neutralising delivery rate
Cooker hood	<p>The following information on the characteristics of the cooker hood should be supplied that clearly shows the:</p> <ul style="list-style-type: none"> • length that the cooker hood overhangs the appliances; 300MM MINIMUM • face velocity at the cooker hood, expressed in metres per second; and • dimensions of the opening of the cooker hood.
System Operation	<p>In addition to the specification of the components the following must be provided about the system:</p> <ul style="list-style-type: none"> • extract rate (expressed as m³/s) at the proposed rate of extract; • dwell time of the gases in the carbon filtration zone; • volume of the kitchen; and • efflux velocity 15M/S Note: The system performance is dependant upon the extract rate of the air. Where the rate can be adjusted by the use of dampers or a variable speed fan, then the conditions under which the extract rate can be achieved must be described
Flue Design	<p>The height and velocity of the final discharge are the two important factors. Generally, the greater the flue height, the better the dispersion and dilution of odours. The discharge of air should be at a minimum height of 1m above the roof ridge, especially if there are buildings nearby that may affect odour dispersion and dilution, although consideration will need to be given to the impact on the character and appearance of the area. Where this is not possible (e.g. because of ownership or structural constraints), additional techniques will be required in order to reduce odours, such as an increase in efflux velocity and additional filters, etc. The final discharge should be vertically upwards, unimpeded by flue terminals. The number of bends in the ducting should be minimised and the ducting should have a smooth internal surface</p>
Noise Levels	<p>Data on the noise produced by the system as a whole should be provided including:</p> <ul style="list-style-type: none"> • sound power levels or sound pressure levels at given distances (the assumptions to this calculation must be clearly stated); • an octave band analysis of the noise produced by the system should also be provided, where possible; and • hours of operation of the ventilation system (where this differs from the hours of opening).
Maintenance	<p>A schedule of maintenance must be provided including details for:</p> <ul style="list-style-type: none"> • cleaning of washable grease filters; - • frequency of inspection and replacement of all filters (grease filters, prefilters and carbon filters where proposed); • inspection and servicing of fans; and - • if schedule is not based on manufacturer's instructions include the reasons why.

Additional notes for guidance	The air inlets must not permit pests to enter the kitchen. Fly screens are an example of how this can be achieved. Sufficient air must be permitted into the premises to replace air extracted. The method for supplying this make-up air should be detailed. The route of the air into the kitchen must not result in its contamination, for example passage through a toilet. Separate provision must be made for ventilation of a toilet. There must be sufficient access points to permit adequate cleaning of all the ductwork
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Risk Assessment for Odour:

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.

Impact Risk	Odour Control Requirement	Significance Score*
Low to medium	Low level odour control	Less than 20
High	High level odour control	20 to 35
Very High	Very high-level odour control	more than 35

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Risk Assessment Score Table

Criteria	Score	Score	Details	Score
Dispersion	Very poor	20	Low level discharge, discharge into courtyard or restriction on stack	5
	Poor	15	Not low level but below eaves, or discharge at 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 receptors	Close	10	Closest sensitive receptor less than 20m from kitchen discharge	10
	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 of large sized take away	3
	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	1
	High	7	Kebab, Vietnamese, Thai or Indian	
	Medium	4	Cantonese, Japanese or Chinese	
	Low	1	Most pubs, Italian, French, Pizza or Steakhouse	
TOTAL:				19

Based on the sum of contributions from dispersion, proximity of receptors, size of kitchen and cooking type, a low level of odour control is required.



Odour arrestment plant performance

Low level odour control may include:

1. Fine filtration or ESP followed by carbon filtration (carbon filters rated with a 0.1 second residence time)
Or
2. Fine filtration (G4 / F6 / H10) followed by counteractant/neutralising system to achieve the same level as 1
3. Ecofleece filters followed by controlled ozone injection system. **Click on links below for details**

[Ecofleece Filters - Naturally smart grease control | Ecofleece Filters](#)

[Purified-Air-ESP-Autowash-Brochure-2024-2.pdf \(purifiedair.com\)](#)

[Controlled Ozone SystemHome | Ecovery Innovations Ecovery InnovationsControlled Ozone SystemProductsControlled Ozone SystemControlled OzoneControlled Ozone SystemFiltersControlled Ozone SystemGrease ControlControlled Ozone System Energy Saving](#)

Maintenance must be carried out to ensure these performance levels are always achieved. The servicing intervals are typically dependent on the volume and type of cooking carried out. This should be reviewed after each odour control service to ensure optimum performance.

This risk assessment has been carried out by Craig Ballantyne of Spiritus Technical Services Ltd. Craig has in excess of 15 years experience in the kitchen ventilation design and installation sector so meets the requirements of a competent person to carry out the risk assessment.

Regards

Craig Ballantyne

Mr Craig Ballantyne
Spiritus Technical Services Ltd