

Odour Assessment Control Plan

67 Ecclestone Street. Prescott, Knowsley, L34 5QH

Prepared By

A.Esilini

10 worsley street

Swinton

Manchester

M27 6EY

Table of Content

1- INTERODUCTION.....	3
2- ODOUR ASSESSMENT	4
2.1 Introduction	4
2.2 Nature and Effect	4
2.3 Assessment Methodology	5
2.4 Odour Impact Assessment	5
2.5 Risk Assessment	6
2.6 The Odour Management Plan	7
3- CONCLUSIONS	8

List of Tables

Table 2.1: Odour Risk Assessment – 67 Eccleston Street	6
--	---

List of Appendices

Appendix 1	9
(Site Layout Plan)	
Appendix 2	10
(Proposed Flue and Ducting Location)	
Appendix 3	11
(Classification of Odour and Grease Content of Extract Air from Commercial Kitchens)	
Appendix 4.....	13
(EMAQ Odour Impact Risk Assessment Methodology)	
Appendix 5	15
(Specification for proposed motor, flue and Carbon Filters)	

1- INTRODUCTION

to provide an Odour Management Plan to accompany a Planning Application for the Change of use of vacant retail into restaurant including installation of extraction flue system to side and new signs.

The planning application proposes a new extraction flue system and seeks to identify a scheme for the extraction and treatment of fumes and odours at the site and in parallel to this provides an Odour Management Plan which would adhere to the fumes/odours not being detectable at the site boundary.

2. ODOUR ASSESSMENT

2.1 Introduction

This odour assessment relates to the potential future odour emanating from any kitchen extraction system associated with the change of use development, and the potential odour impacts on any sensitive receptors in close proximity to the extract flue.

2.2 Nature and Effect of Odour

Odour is perceived by our brains in response to chemicals present in the air we breathe. Odour is the effect that those chemicals have upon us. Humans have sensitive senses of smell and they can detect odour even when chemicals are present in very low concentrations. Most odours are a mixture of many chemicals that interact to produce what we detect as an odour.

Different life experiences and natural variation in the population can result in different sensations and emotional responses by individuals to the same odorous compounds. Because the response to odour is synthesised in our brains, other senses such as sight and taste, and even our upbringing, can influence our perception of odour and whether we find it acceptable, objectionable or offensive.

2.3 Assessment Methodology

The assessment of odour takes on the following aspects:

- A qualitative assessment of proposed odour emissions from the change of use development;
- An assessment taking into account the nature of the premises;
- The height and position of any proposed flue;
- The recommended exit velocity from the flue; and
- The distance between the proposed flue and the potential odorous emissions and the distance to the sensitive receptor.

2.3.1 Guidance on Control of Odours from Kitchens

The Department for Environment Food and Rural Affairs (DEFRA) originally published guidance¹ (now withdrawn) on the control of odours from kitchens. That guidance has been subsequently updated by 'Control of Odour and Noise from Commercial Kitchen Exhaust Systems' (EMAQ, July 2018)

Although the guidance is not statutory, it provides very useful information on best practice techniques for the minimisation of odour nuisance from kitchen exhaust systems. This source of guidance and ACCON's own experience form the basis of the assessment to

determine whether nearby occupiers of existing residential properties would consider that odour emanating from the kitchen extract flue is acceptable or not.

2.3.2. General Principles in Controlling Odour

The guidance is generally used for premises where food is cooked for patrons on or off the premises and where a kitchen is used to prepare and cook food. In these instances, a kitchen canopy extract system, are invariably present.

The main purpose of a kitchen canopy is to extract excess heat, steam, fats, smoke and odour arising from cooking processes. Removal of these unwelcome by-products of kitchen activity helps to achieve a reasonably comfortable and safe working environment, protect the working environment, as well as preventing the spread of the products from the kitchen area to other parts of the building.

Odours from cooking are contained both within the solid, liquid and gaseous material which is extracted by the kitchen canopy, and these different phases generally require different abatement techniques to reduce levels of odour to those levels which are acceptable to those in the vicinity. The extent to which any odour mitigation is required is dependent on the type of foods being prepared and cooked.

Commonly the kitchen extract canopy will contain the first line of odour control through the incorporation of coarse grease filters, which take out the largest grease particles from the extracted air stream. Such coarse grease filters tend to be a common feature of almost all kitchen canopy systems.

The type and levels of odour control required downstream of the canopy is very much dependent on a number of factors. The principle ones are:

- Type of food prepared. This is probably the most dominant factor as the type of food, and particularly any spices used, dictates the chemical constituents present in the exhaust air;
- Size of the cooking facility. The number of covers; and
- Types of cooking appliances used. This dictates the level of fat, water droplets and temperature within the ventilation air.

The guidance includes two Tables which classify the odour and grease content of extract air according to the general cooking type and equipment used. These are reproduced in Appendix 3 (Table 2A and Table 2B). The information, in Appendix 3, has been used in his report to carry out the odour risk assessment in respect of the consented change of use development.

Odour Impact Assessment

Based on the observed location of the proposed external extraction system located to the rear side and running along the elevation wall to the ridge, this odour impact assessment and Odour Management Plan has been undertaken in accordance with the EMAQ guidance 'Control of Odour and Noise from Commercial Kitchen Exhaust Systems'.

Risk Assessment

The guidance provides a means of risk assessing the impact of any catering establishment and proposed and existing uses. The key elements of the method are reproduced in Appendix 3. The method relies on scoring the proposal on four different aspects:

- Dispersion – where the extract vents to atmosphere are in relation to the building to which the vent is attached;
- Proximity of receptors – the location of the nearest residents;
- The kitchen size – number of covers, i.e. level of activity; and
- Cooking type – based on grease and odour loading.

The level of odour which is created by a premises will depend on the size of kitchen and type of cooking. These can be determined using categories which have been set out in the guidance and are replicated in Appendix 4.

The scores for each aspect are summed to derive an overall significance score, an impact risk, and a statement about the odour control requirement. The guidance has been utilised where possible to determine the risk of odour nuisance from the proposed change of use development, without any additional odour abatement in place. The risk assessment provided in Table 2.1, is a worst-case scenario.

Table 2.1: Odour Risk Assessment – 67 Eccleston Street

	Descriptor	Score	Impact Risk	Odour Control Requirement
Dispersion	Moderate	10	High	High Level Odour Control
Proximity of Receptors	Close	10		
Size of Kitchen	Medium	3		
Cooking Type (Odour & Grease Load)	High	10		
TOTAL		33		

* Estimated, based on the details provided.

For the proposed flue extract system, it would be discharging 1m above roof at 10-15m/s (Moderate, Score 10). There are receptors within 20m of the proposed flue extract (Close, Score 10). The kitchen will be Medium, Between 30 and 100 covers/Medium kitchen (Medium, Score 3). The main food cooked on site will be Pizza using gas as fuel, the cooking type (odour and grease loading) with also Kebab, Burger and chips using Kebab machine, top flat Grill and Fryer making odour, grease High load. The results of the overall assessment are potentially a High (Score 10) in total.

The Odour Management Plan

Section 2.5 has quantified that as a worst case for the consented change of use development (provided the recommendations are taken into account) there is deemed to be a 'Low to Medium' risk of potential nuisance and ordinarily a Low level of odour mitigation would be recommended.

2.6.1. Proposed Ventilation and Extraction System

The proposals are for the installation of an external high-level flue extract to the rear side of the property). Refer to plans in Appendix 2.

The proposed system is gas fired pizza oven using high temperatures thereby mitigating the formation of smoke and odours. The high temperatures of 270c to 310c and the cooking of pizzas for 180-290 seconds mean fatty meats do not omit grease into the system also kebab machine, grill and fryer are gas fired with standard temperature the formation of smoke and odours will be high.

The canopy is located above the oven specially designed for high temperature ovens. It is proposed carbon filter is installed to (carbon filter with a 0.1 – 0.4 residence time) to prevent any form of odour to be captured under very heavy use.

2.6.2. Maintenance Programme (Type, Frequency and Regime)

To minimize the risk of complaints, it is recommended that:

- A visual inspection of the ventilation system be carried out at least once a week. All metal surfaces should be checked to ensure that there is no accumulation of grease or dirt and that there is no surface damage;
- Cooker hoods and grease filters should be cleaned on a daily basis;
- Baffle type self-draining filters and collection drawers should be cleaned weekly, as a minimum. The cleaning period for canopy should be at least twice a week;
- Cleaning period for extract ductwork should as follows:

Use No. hours use per day Minimum Cleaning Interval

Heavy use 12 – 16 Every 3 months

Moderate Use 6 – 12 Every 6 Months

Light Use 2 – 6 Annually

Based on the information provided, it is likely that the premises will be of Light to Moderate Use, and should be cleaned at least every 6 months;

- Periodic 'deep hygiene cleaning' should be undertaken by a specialist contractor. All accessible main ductwork runs and branches, including fitted equipment should be inspected and cleaned;

- All fans are to be maintained on a regular basis as recommended by the fan manufacturer; and
- Ventilation grilles, where fitted should have easily removable cores to facilitate cleaning.

Recommendations for maintenance of odour control system

For a system employing bag filtration and carbon filtration;

- Change bag filters every two weeks
- Change carbon filters every 6 to 9 months

Daily cleaning keeps the filters working at their optimum efficiency and will greatly reduce the number of service visits required throughout the year.

It will be important that the odour control methods are fully implemented and additionally, that the proposed OMP management measures and frequency of servicing is complied with. With respect to the servicing and maintenance time, audit and service records should be maintained and made available to the Local Authority on demand.

CONCLUSIONS

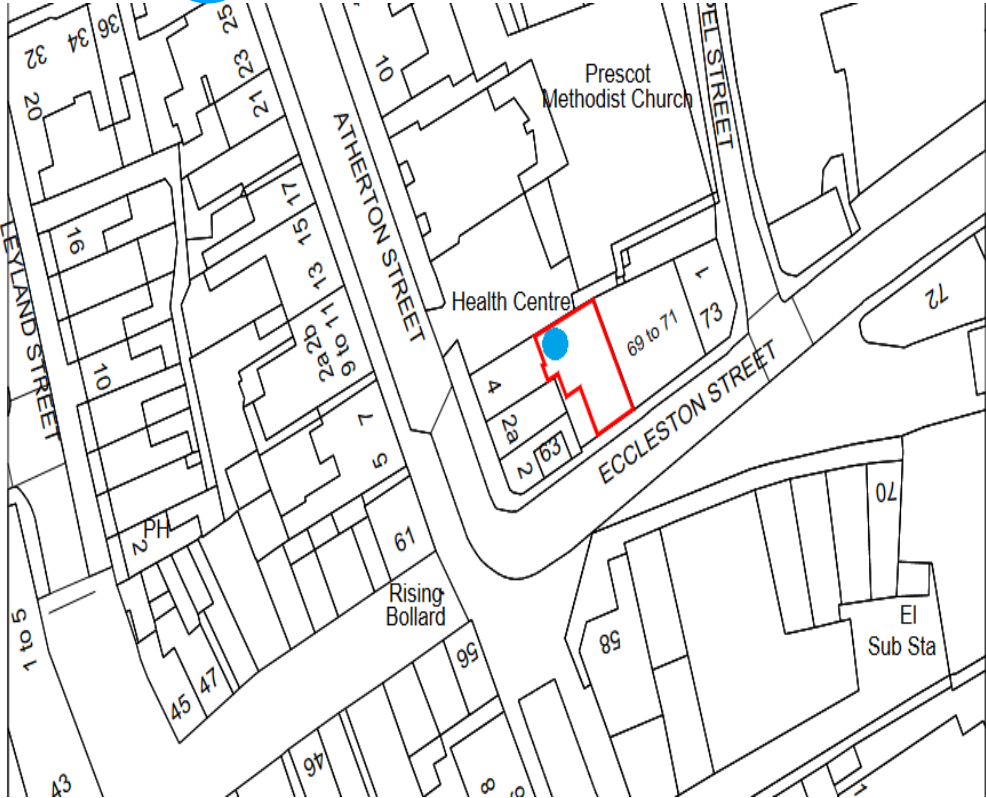
With respect to odour, it has been identified that providing that the recommendations in this Odour Management Plan are taken into account, there should not be a loss of amenity at the existing residential receptors in the vicinity of the extraction flue and as long as the systems recommended in the OMP are implemented, this would consist of using the “best practicable means” and would prevent statutory nuisance occurring.

As long as the proposed extraction system is properly maintained on a regular basis, it is highly unlikely that odour would become an issue in the future.

Appindex1 Site Layout Plan

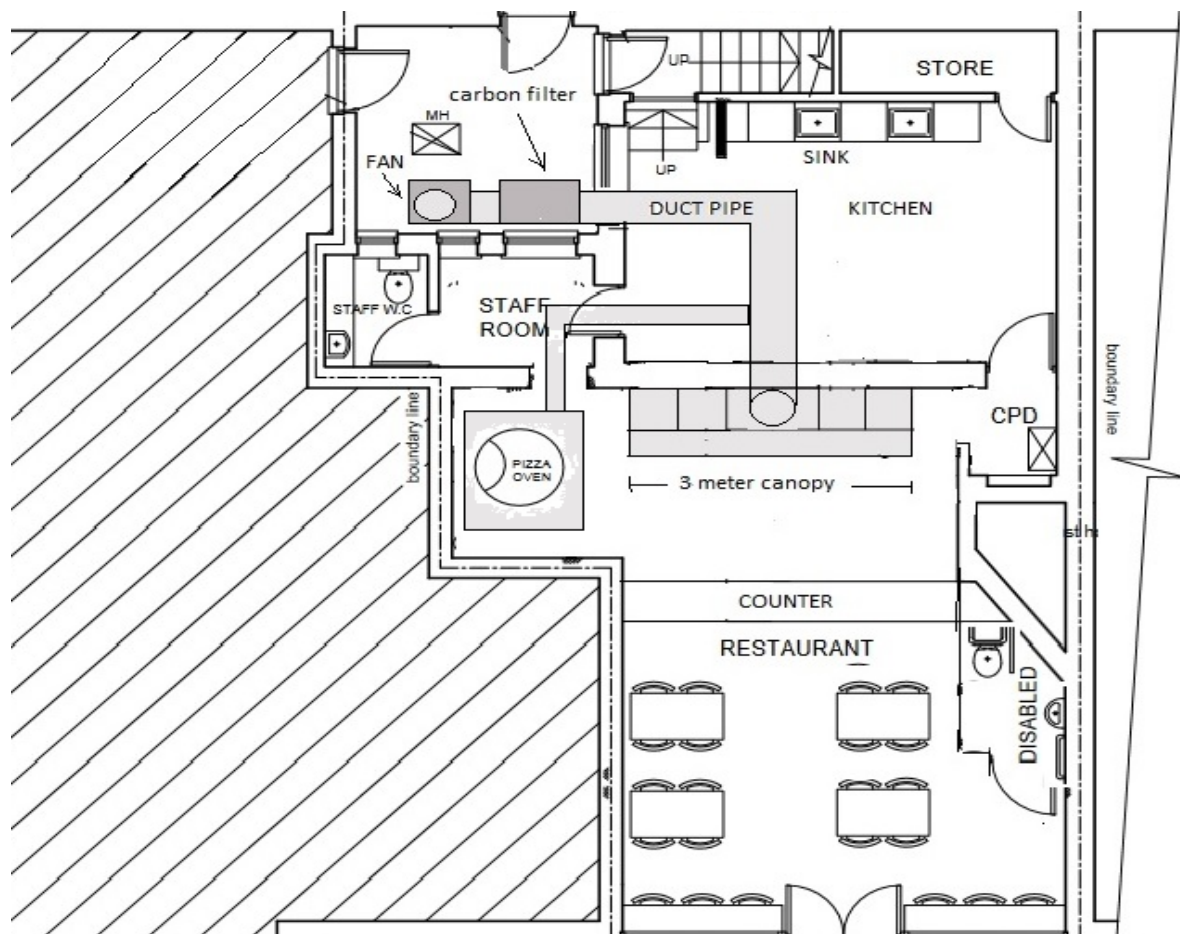
Site: 

Flue Location 



Appendix 2

Proposed Flue and Ducting Location



Appendix 3

Classification of Odour and Grease Content of Extract Air from Commercial Kitchens

Catering Establishment	Description	Odour Content				Grease Content			
		Low	Moderate	High	V. High	Low	Moderate	High	V. High
Tea shop		x				x			
Pizza	Herb		x				x		
Steakhouses	Fat		x				x		
French	Herbs/ garlic		x				x		
Italian	Herbs/ garlic		x				x		
Most pubs Fat	Fat		x				x		
Chinese	Ginger, spices, oil		x					x	
Japanese	Spices, oil		x					x	
Cantonese	Spices, oil		x					x	
Indian	Spices, oil			x				x	
Thai	Spices, oil			x				x	
Vietnamese	Spices, oil			x				x	
Kebab	Fat cooking meat			x				x	
Fried Chicken	Oil, cooking meat				x				x
Pubs (fried)	Oil, cooking meat				x				x
Fish & chip	oil				x				x
Fast food, burger	Oil, cooking meat				x				x

Table 2A: Table detailing the grease and odour content of various types of food

Table 2B: Table detailing the grease & moisture content of various cooking appliances

Cooking appliance	Grease loading			Moisture content		
	Light	Medium	Heavy	Light	Medium	Heavy
Cooking pots	x					x
Bains Marie	x					x
Steam ovens	x					x
Pizza ovens		x			x	
Bratt pans		x				x
Oven ranges		x			x	
Flat top grills		x			x	
Chip fryers		x			x	
Salamanders		x			x	
Charcoal			x		x	
Gas fired open grills			x		x	
Char boilers			x		x	
Chinese wok ranges			x			x

Appendix 4

EMAQ Odour Impact Risk Assessment Methodology

Criteria	Descriptor	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 10m/s
	Moderate	10	Discharging 1m above eaves at 10-15m/s
	Good	5	Discharging 1m above ridge at 15m/s
Proximity of receptors	Close	10	Closest sensitive receptor less than 20 m from kitchen discharge
	Medium	5	Closest sensitive receptor between 20-100m from kitchen discharge
	Far	1	Closest sensitive receptor greater than 100m from kitchen discharge
Size of Kitchen	Large	5	More than 100 covers
	Medium	3	Between 30-100 covers
	Small	1	Less than 30 covers
Cooking Type (odour & grease loading)	Very High	10	Pub (high level of fried food), fried chicken, burgers or fish and chips
	High	7	Kebab, Vietnamese, Thai or Indian
	Medium	4	Cantonese, Japanese or Chinese
	Low	1	Most pubs, Italian, French, pizza or steakhouse

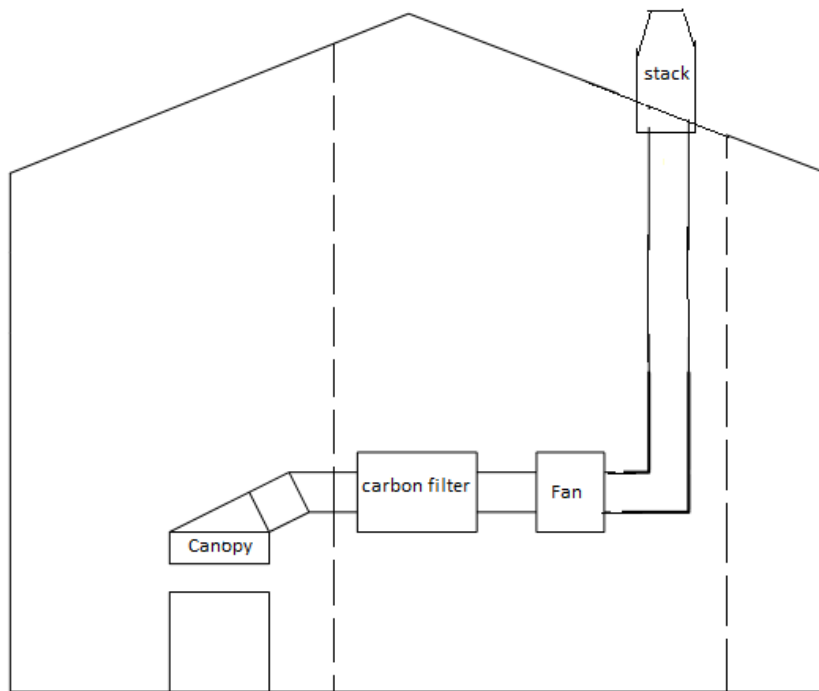
Odour control must be designed to prevent odour nuisance in a given situation. The following score methodology is suggested as a means of determining odour control requirements using a simple risk assessment approach.

Impact Risk	Odour Control Requirement	Significance Score*
Low to Medium	Low Level Odour Control	<20
High	High Level Odour Control	20-35
Very High	Very High level Odour Control	>35

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

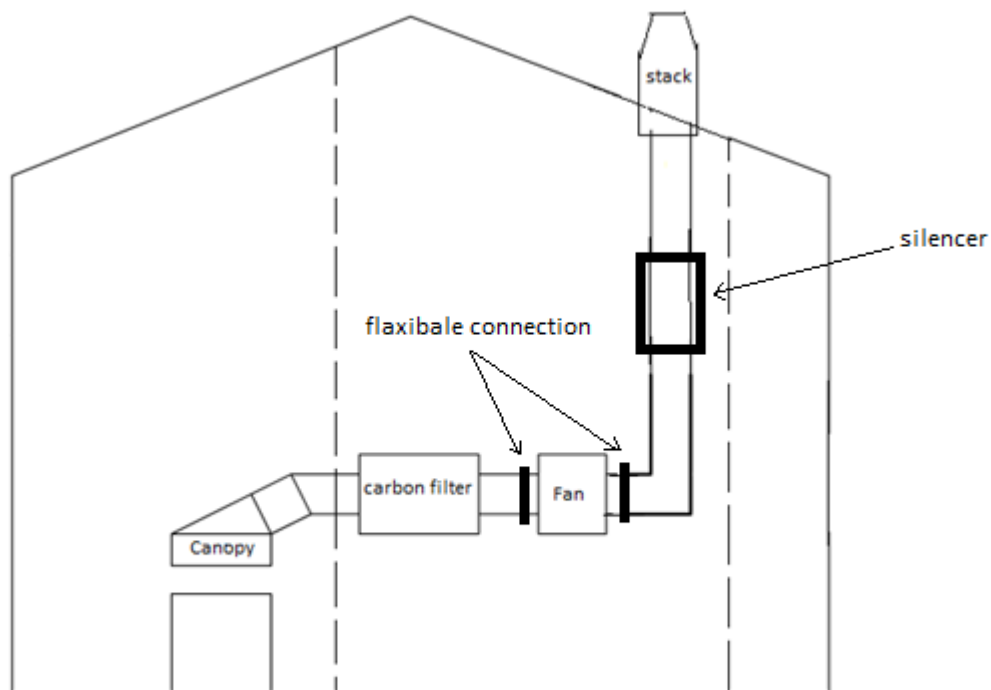
Appendix 5

Specification for proposed motor, flue and Carbon Filter



Noise control to help to reduce the noise to minimum the consideration using low noise extractor fan (Giga BOX Fan) as mentioned before which provide good power and low noise as in the manufacture specification sheet, also will use the silencer to improve and keep noise to the minimum also by using flexible connection to connect the Box fan to the duct pipe to eliminate any vibration and noise may occur as

illustrated below and by using the audio meter can measure to confirm the noise at acceptable range.



As determined from information above the consideration of use high odour control system that by use kitchavent 3000 unit will achieve best result, which contain of grease filter and M5 Bag filter and carbon filter and with the primary grease filter which fitted in canopy to improve grease filtration and the M5 Bag filter for fine particular to provide fine filtration followed by carbon filtration as illustrated in manufacture sheet.

The Cooking Odour Class Above are as classified by Defra in Guidance on the control of odour and Noise