

ODOUR RISK ASSESSMENT FOR

5A Meldon Road,
Manchester,
M13 0TZ.

RE: Planning application ref: 137624/FO/2023

This Odour Control report has been completed based on the information provided by the client, and the agreed scope of work. The assessor does not accept liability for any matters arising outside the agreed scope of work, or for changes that may be required due to omissions in the information provided.

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1. Introduction

1.1.1 This report considers the potential for annoyance due to odours from the proposed commercial kitchen at 5A Meldon Road, Manchester, M13 0TZ.

1.1.2 Odours from the kitchen have the potential to impact on the amenity of odour sensitive receptors at local properties. The report has been produced in support of a planning application to extend the premises and retain the use classification as hot food takeaway. This report includes an odour risk assessment, that follows the methodology set out in EMAQ guidance on Control of Odour and Noise from Commercial Kitchen Exhaust Systems (EMAQ, 2018). The risk assessment methodology has been used to determine the level of odour abatement that would be required as part of the kitchen extract system.

2. Odour legislation and Planning Policy

2.1 Legislation

Environmental Protection Act

2.1.1 Nuisances caused by odours are regulated by the statutory nuisance provisions in Part III of the Environmental Protection Act (EPA) (HMSO, 1990). Section 79(1)(d) of the EPA states that a statutory nuisance is:

“dust, steam, smell or other effluvia arising on an industrial, trade and business premises and being prejudicial to health or a nuisance” (Section 79(1)(d))

2.1.2 Local authorities have a duty under the Environmental Protection Act to inspect their districts from time to time for statutory nuisances and to investigate any complaint about an alleged odour nuisance made by a member of the public. If the local authority finds that a statutory nuisance exists, then it must serve an abatement notice.

2.2. Planning Policy

National Policies

2.2.1 The National Planning Policy Framework (NPPF) sets out the Government’s planning policies for England and how these should be applied (Ministry of Housing, Communities & Local Government, 2021). It provides a framework within which locally-prepared plans for development can be produced. At Paragraph 8c, the NPPF states that the purpose of the planning system is to contribute to the achievement of sustainable development and includes an overarching environmental objective:

“To protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.”

2.2.2 At Paragraph 18, the NPPF states that:

“Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development.”

2.2.3 At Paragraph 188, the NPPF goes on to say that:

“The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively. Equally, where a planning decision has been made on a particular development, the planning issues should not be revisited through the permitting regimes operated by pollution control authorities.”

2.2.4 The NPPF is supported by Planning Practice Guidance (PPG) (Ministry of Housing, Communities & Local Government, 2019b). The PPG makes clear that that: *“Odour and dust can also be a planning concern, for example, because of the effect on local amenity”*.

3. Odour Risk Assessment

3.1. Methodology

3.1.1 EMAQ guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems includes a risk assessment methodology for identifying the potential risk of odour impacts from commercial kitchen operations. The results of the risk assessment may then be used to determine a suitable level of odour abatement to be installed into a commercial kitchen.

3.1.2 The risk assessment for odours is split into the following four categories;

- dispersion;
- proximity of receptors;
- size of kitchen; and
- cooking type (odour and grease loading).

3.1.3 A risk rating is scored for each category and the total risk rating, i.e., the sum of the risk rating for each category, is compared with the significance score in **Table 1**. The level of odour control which is likely to be required to prevent the kitchen from causing odour nuisance impacts can then be determined. The risk ratings for each category are shown in **Table 2**.

Table 1: Significance Score and Odour Control Requirement Impact Risk	Odour Control Requirement	Significance Score a
Low to Medium	Low level of odour control	Less than 20
High	High level of odour control	20 to 35
Very High	Very high level of odour control	More than 35

The level of odour control which is likely to be required to prevent the kitchen from causing odour nuisance impacts can then be determined.

The risk ratings for each category are shown in Table 2.

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	Discharging 1 m above eaves at 10-15 m/s.
	Good	5	Discharging 1 m above ridge at 15 m/s.
Proximity of receptors	Close	10	Closest sensitive receptor less than 20 m from kitchen discharge.
	Medium	5	Closest sensitive receptor between 20 and 100 m from kitchen discharge.
	Far	1	Closest sensitive receptor more than 100 m from kitchen discharge.
Size of kitchen	Large	5	More than 100 covers or large sized takeaway.
	Medium	3	Between 30 and 100 covers or medium sized takeaway.
	Small	1	Less than 30 covers or small takeaway.
Cooking Type (odour & grease Load)	Very High	10	Pub (high level of fried food), fried chicken, burgers or fish & chips. Turkish, Middle Eastern or any premises cooking with solid fuel.
	High	7	Kebab, Vietnamese, Thai, Indian, Japanese, Chinese or Steakhouse.
	Medium	4	Cantonese, Italian, French or Pizza (gas fired).
	Low	1	Most pubs (no fried food, mainly reheating and sandwiches etc.), or Tea Rooms. a

Risk Assessment

Dispersion

The risk rating for dispersion relates to the location of the discharge flue of the kitchen extraction system, and the flow rate of the exhaust air at the point of discharge.

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The kitchen extract system will terminate through a high velocity cowl above the roof of the side of the building at a height above the eaves by at least 1 metre. Therefore, based on the information in Table 2, the risk rating for dispersion would be described as **Moderate**.

Proximity to Receptors

The risk rating for proximity to receptors relates to the distance from the point of discharge of the kitchen extraction system to the nearest sensitive receptor. Examples of high sensitivity receptors, as set out in the Institute of Air Quality Management (IAQM) Guidance on the Assessment of Odour for Planning (IAQM, 2018), include residential dwellings.

Residential properties near the commercial unit of the application site will not be within 20m from the flue; therefore, based on the information in Table 2, the risk rating for dispersion would be described as **Medium**.

Size of Kitchen

The risk rating for the size of kitchen relates to the volume of food prepared by the kitchen, as described by the number of covers of a restaurant, or the size of a takeaway.

The unit in question will operate as a small dining establishment only; therefore, based on the information in Table 2, the risk rating for the size of kitchen would be described as **Medium**

Cooking Type

The risk rating for cooking type relates to the type of food prepared in the kitchen, and the cooking methods used.

The restaurant will specialise in fried chicken and fish & chips therefore, based on the information in Table 2, the risk rating for cooking type would be described as **Very High** due to the fried food.

Summary

A summary of the risk assessment and the total risk rating for the establishment is shown in Table 3. With regard to the significance scores set out in Table 1, the overall risk rating for the restaurant is High; therefore, the extraction system would require a High level of odour control to mitigate the potential odour impacts at local sensitive receptors.

Table 3. Risk rating summary

Criteria	Rating	Significance Score	Comments
Dispersion	Moderate	10	Discharging 1 m above eaves at 10-15 m/s.
Proximity of Receptors	Medium	5	Closest sensitive receptor between 20 and 100 m from kitchen discharge
Kitchen Size	Medium	3	More than 30 covers
Cooking Type	Very High	10	Fried Food
Overall Risk Rating	High	28	High

4. Odour Mitigation

4.1.1 The odour risk assessment has identified that the commercial kitchens would require a high level of odour control (see Table 3). The EMAQ guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems outlines that abatement systems offering a high level of odour control may include:

1. Fine filtration or electrostatic precipitator (ESP) followed by carbon filtration (carbon filters rated with a 0.4-0.8 second residence time); or
2. Fine filtration or ESP followed by carbon filtration and by counteractant/neutralising system to achieve the same level of control as 1; or
3. Fine filtration or ESP followed by UV ozone system to achieve the same level of control as 1.

4.1.2 The proposed extract system would include a carbon filtration unit ensuring fine filtration is included prior to the carbon filtration units and a residence time of 0.4-0.8 seconds is maintained, the proposed extract systems would meet the requirements of the EMAQ guidance and there should be no risk of odour effects at local receptors.

4.1.3 In addition to the recommended mitigation measures above, canopy hoods should also be installed above all cooking areas. The canopy hoods should be fitted with washable grease baffle filters. Grease laden air passing through the filter is forced through direction and velocity changes, depositing grease on the vanes, which is then drained from the filter. The use of baffle filters, which typically have a grease removal efficiency of 65-80%, will help prevent contamination of the fine filters. Mesh filters are not recommended as they do not provide a flame barrier.

4.1.4 The extract flow rate of each system should be sufficient to ensure a capture velocity at the extract canopy appropriate to the type of cooking to be undertaken. An adequate capture velocity will also help prevent untreated odour emissions due to leakage from the building, i.e., through doors and windows. Any adjustments to the flow rate of the ventilation air will need to take account of the residence time requirements of the carbon filtration system.

Maintenance

4.1.5 A suitably qualified and experienced ventilation systems engineer should design and install the ventilation systems.

4.1.6 Regular maintenance of the ventilation systems is essential to ensure that they operate effectively and continue to provide adequate mitigation against odour nuisance. Assuming a heavy grease loading and operation for 6-12 hours daily, the EMAQ guidance provides recommended cleaning schedules for extract systems as follows:

- Cooker hoods and grease filters should be cleaned daily;
- Baffle filters should be cleaned weekly as a minimum;
- Ductwork should be cleaned every 3-6 months;
- Fine filters should be changed every 2 weeks;
- Carbon filters should be changed every 4 to 6 months.

4.1.7 Periodic 'deep hygiene cleaning' of the entire ventilation system should be undertaken by a specialist contractor.

5. Conclusions

5.1.1 The odour risk assessment has identified that the commercial kitchens would have a high risk rating with regard to odour effects and that a high level of odour control would be required.

5.1.2 The proposed extract systems will be designed to meet the requirements for a high level of odour control, as set out in the EMAQ guidance, and this will eliminate the risk of odour effects, provided the extract system is installed in accordance with the design and manufacturers specification. With the installation of the specified odour controls, there should be no constraints to the operation of a takeaway at 5A Meldon Road, Manchester, with regard to odour, as the proposed development would be consistent with the relevant parts of the NPPF and PPG.

6. References

EMAQ, 2018. *Control of Odour and Noise from Commercial Kitchen Exhaust Systems*.

HMSO, 1990. *Environmental Protection Act 1990*.

IAQM, 2018. *Guidance on the Assessment of Odour for Planning (v1.1)*.

Ministry of Housing, Communities & Local Government, 2019b. *Guidance Air Quality*.
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Ministry of Housing, Communities & Local Government, 2021. *National Planning Policy Framework*.