



MFG Levenshulme Odour Assessment

Odour Assessment

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Basis of Report

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1.0 Introduction

SLR Consulting Ltd (SLR) has been commissioned by Motor Fuel Group Limited (the 'Client') to undertake an odour assessment to appraise a planning application for a proposed hot food takeaway within the existing sales building and minor external alterations (the 'Proposed Development') at Levenshulme Service Station, 1081 Stockport Road, Manchester, M19 2RA (the 'Site'). The Site currently comprises an existing petrol filling station (PFS) and associated sales building only.

1.1 Background

A planning application for a hot food takeaway at the Site was previously submitted to Manchester City Council (MCC) (planning reference: 136176/FO/2023), which was subsequently withdrawn. MCC's Environmental Health Officer (EHO) provided formal consultation comments on the previous application, including the following of relevance to odour:

"2.1 Fumes and odours – The applicant will need to consult with a suitably qualified ventilation engineer and submit a kitchen fume extract strategy report for approval. The strategy should include risk assessments for odour and noise and be based on appropriate guidance such as that published by EMAQ titled 'Control of Odour and Noise from Commercial Kitchen Exhaust Systems' dated May 2022. Details should also be provided in relation to replacement air. For further details refer to MCC's Environmental protection information for developers (GD 03) document."

As such, this odour risk assessment has been prepared to assess the potential for food-related cooking odours resulting from the Proposed Development to impact upon amenity at nearby receptors. The assessment would also identify whether any further odour abatement measures are required (if any).

1.2 Scope

The assessment of odours has been undertaken in application of the risk-based assessment methodology outlined within the EMAQ+ 'Control of odour and noise from commercial kitchen exhaust systems' guidance¹ supplemented by reference to the Institute of Air Quality Management's *guidance on the assessment of odour for planning*² ('IAQM Odour Guidance'). The assessment has been undertaken as follows:

- Review of the local exhaust ventilation (LEV) system proposed to be installed;
- Assessment of odour risk in accordance with appropriate guidance; and
- Recommendations for additional odour control, where necessary.

¹ EMAQ+ (2018) Control of odour and noise from commercial kitchen exhaust systems guidance.

² IAQM (2018) Guidance on the assessment of odour for planning.



2.0 Relevant Legislation and Guidance

The following section provides background information relevant to this assessment.

2.1 Planning Policy

2.1.1 National Policy

2.1.1.1 National Planning Policy Framework

The December 2023 update to the National Planning Policy Framework³ (NPPF) sets out planning policy for England. The NPPF states that the planning system should contribute to and enhance the natural and local environment, by preventing new development from contributing to or being adversely affected by unacceptable concentrations of air pollution and development should, wherever possible, help to improve local environmental conditions such as air quality.

In specific relation to odour policy, the NPPF states:

Chapter 15 - Conserving and Enhancing the Natural Environment

“Para 180 (e): preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible where to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans.”

and

“Para 191: 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.”

The NPPF is accompanied by web based supporting Planning Practice Guidance (PPG)⁴ which includes guiding principles on how planning can take account of the impacts of new development on odour. In regard to odour, the PPG states:

“Odour and dust can also be a planning concern, for example, because of the effect on local amenity.”

“Considerations that may be relevant to determining a planning application include whether the development would: [...]

Expose people to harmful concentrations of air pollutants, including dust. This could be by building new homes, schools, workplaces or other development in places with poor air quality;”

“Assessments need to be proportionate to the nature and scale of development proposed and the potential impacts (taking into account existing air quality conditions), and because of this are likely to be locationally specific. The scope and

³ National Planning Policy Framework, Ministry of Housing, Communities & Local Government. 2023.

⁴ Planning Practice Guidance: Air Quality, Ministry of Housing, Communities and Local Government. November 2019.



content of supporting information is best discussed and agreed between the local planning authority and applicant before it is commissioned.”

The guidance within the Planning Practice Guidance specifically relating to odour has been considered as part of this Odour Risk Assessment.

The PPG sets out the information that may be required within the context of a supporting odour assessment, stating that “Assessments need to be proportionate to the nature and scale of development proposed and the potential impacts (taking into account existing air quality conditions)” [...] “Mitigation options will need to be locationally specific, will depend on the proposed development and need to be proportionate to the likely impact.”

2.1.2 Local Policy

The Manchester Local Plan guides development within Manchester. It was previously known as the Local Development Framework. The Manchester Local Plan consists of a number of documents including the Places for Everyone (PfE) Joint Development Plan 2022-2039⁵, the Manchester Core Strategy 2012-2027⁶ and the Addendum to the Manchester Core Strategy 2024⁷ which was published subsequent to the PfE. The PfE was adopted on 21st March 2024 and partially replaces a number of policies within the Manchester Core Strategy.

The Manchester Core Strategy is the key document in the Manchester Local Plan. The Manchester Core Strategy sets out the long-term strategic policies for Manchester’s future development and forms the framework that planning applications will be assessed against.

Within the Core Strategy the following policy makes reference to odour:

“Policy DM1 Development Management

All development should have regard to the following specific issues for which more detailed guidance may be given within a supplementary planning document:- [...]

Effects on amenity, including [...] odours.”

The above policy has not been replaced by PfE policies and remains part of the Manchester Core Strategy.

Within the PfE Joint Development Plan, the following policy makes reference to amenity (and therefore odour):

“Policy JP-P1 Sustainable Places: We aim to become one of the most liveable city regions in the world, consisting of a series of beautiful, healthy and varied places, each having the following key attributes that all development, wherever appropriate, should be consistent with: [...]

15. Comfortable and inviting, with indoor and outdoor environments:

A. Offering a high level of amenity that minimises exposure to pollution.”

2.2 General Nuisance Regulation

The main requirements with respect to odour control from premises that are not permitted under the Environmental Permitting (England and Wales) Regulations (2007), and

⁵ Manchester City Council, Places for Everyone (PfE) Joint Development Plan for Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford and Wigan 2022 to 2039, Adopted 21st March 2024.

⁶ Manchester City Council, Core Strategy 2012-2027, Adopted 11th July 2012.

⁷ Manchester City Council, Addendum to Manchester Core Strategy 2024.



subsequent amendments, is that provided in Section 79 of Part III of the Environmental Protection Act (1990). The Act defines nuisance as:

“any dust steam, smell or other effluvia arising on industrial trade or business premises and being prejudicial to health or a nuisance.”

Enforcement of the Act, in regard to nuisance, is currently under the jurisdiction of the local Environmental Health Department, whose officers are deemed to provide an independent evaluation of nuisance. If the Local Authority (LA) is satisfied that a statutory nuisance exists, or is likely to occur or happen again, it must serve an abatement notice under Part III of the Environmental Protection Act (1990). Enforcement can insist that there be no malodour beyond the boundary of the works. A defence is to show that the process to which the nuisance has been attributed and its operation are being controlled according to Best Practicable Means (BPM).

2.3 Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust System

This guidance was prepared by EMAQ+ in 2018⁸ to provide clear guidance to the regulation process of commercial kitchens and the issues of odour and noise emissions from associated exhausts. The guidance is not a statutory document but provides information on best practice techniques for the minimisation of odour and noise from kitchen exhaust systems.

The EMAQ+ guidance identifies that the factors that influence the magnitude of potential odour from kitchens as:

- The size of the cooking facility;
- The type of food prepared; and
- The type of cooking appliances used.

Reference should be made to Appendix B for presentation of the scoring and significance criteria outlined within the EMAQ+ guidance.

2.4 Guidance on the Assessment of Odour for Planning

The IAQM Odour Guidance provides clear guidance to assist practitioners involved in odour assessments for planning purposes to determine potential amenity impacts.

The IAQM Odour Guidance defines the possible effects of environmental odours as:

“Most odours are mixtures of many chemicals that interact to produce what we detect as a smell. A distinction should be made between: odour-free air, containing no odorous chemicals; and fresh air, usually perceived as being air that contains no chemicals or contaminants that are unpleasant (i.e. air that smells ‘clean’). Fresh air may contain odorous chemicals, but these odours will usually be pleasant in character, such as freshly mown grass or sea spray. Perceptions of an odour - whether it is found to be acceptable, objectionable or offensive - are partly innate and hard-wired, and partly determined through life experiences and hence can be subjective to the individual.”

Odour effects can contribute to a reduced quality of life for the individuals who are exposed to the odour. An individual’s response to and perception of odour can be judged in terms of

⁸ EMAQ+ (2018) Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems.



the FIDOL factors, defined as Frequency, Intensity, Duration, Offensiveness and Location (Receptor).

- The frequency is a measure of how often an individual is exposed to a specific odour within a period of time;
- The intensity is the perceived strength of an odour;
- The duration is the length of exposure to an odour;
- The odour offensiveness, also termed 'hedonic tone', is a subjective measure of how pleasant or unpleasant an odour is deemed to be; and
- The location (receptor sensitivity) of an odour is a consideration of both the land-use surrounding an odorous source, and the sensitivity of surrounding receptors.

To facilitate the assessment of the significance of predicted odour exposure on amenity, the guidance defines receptor sensitivity. Reference should be made to Appendix A for presentation of the guidance criteria to determine potential sensitive receptors to odour.



3.0 Site Setting

3.1 Surrounding Area

The Site is located off the A6 Stockport Road at approximate National Grid Reference (NGR): x387820, y393365. The Site is bounded by:

- Residential properties along Cringle Road directly to the north and east;
- Residential and commercial properties to the south along the A6 Stockport Road; and
- Residential and commercial properties to the west along Hardicker Street and Halls Street.

The Site setting is presented in Figure 3-1.



Figure 3-1: Site Setting and Proposed Kitchen Extract

It is noted that the EMAQ+ guidance does not differentiate between the differing levels of receptors sensitivity. The IAQM Odour Guidance considers receptor sensitivity to potential odour impacts based upon a combination of the frequency and duration of time individual receptors are likely to be present to witness a potential impact, and requirements for amenity in that location. For example, residential dwellings (where a high level of amenity would be expected, in combination with a likelihood for continuous or long-term potential exposure) are classified as receptors of 'high' sensitivity. In contrast, footpaths / recreational areas (where a low level of amenity would be expected, and potential exposure is likely to be on a transient basis) are classified as receptors of 'low' sensitivity.



Therefore, the IAQM Odour Guidance has been used to identify an appropriate classification of receptor sensitivity for each sensitive receptor that has been identified in the locale of the Site.

Table 3-1 presents the potential sensitive receptors within the locale of the Site, their distance from the Site, and the sensitivity of receptors based upon the IAQM Odour Guidance.

Table 3-1: Sensitive Receptors in the Vicinity of the Site

Receptor	Approximate Distance and Direction from Site Boundary	Sensitivity to Odours
8-10 Cringle Road	5m east	High
Jetts 24 hour Gym	10m south	Medium
A6 Stockport Road footpath	2m west	Low

3.2 Kitchen Details

The Proposed Development is for a 'hot food takeaway', however the specific vendor and nature of cooking has not been determined at this early stage. As such, the cooking method and food type considered is the grilling and oven-cooking of burgers and other fried foods, representing a reasonable worst-case assumption for the generation of odours from a 'hot food takeaway'. It is anticipated that the hot food takeaway would produce approximately 200-220 meals per day.

At this stage, the exact specifications of the kitchen have not been finalised. It is anticipated that odorous air would be extracted from the kitchen and treated via an Electrostatic Precipitator (ESP) to remove smoke and grease particles followed by an Ultraviolet (UV) module to abate potential cooking odours. The following treatment by the EPS-UV system, treated air would be vertically discharged to atmosphere at roof-level (1m above roof ridge). A separate ventilation system would supply fresh ('make up') air via a supply air louvre located on the east of the building, discharging into the kitchen.



4.0 Assessment of Odour Impact

The EMAQ+ guidance provides an approach to determine odour control requirements by way of risk-based methodology (as presented in Appendix B). The odour assessment has considered the anticipated cooking operations and kitchen configuration as outlined in Section 3.3.

4.1 Significance Score

A summary of the Odour Risk Assessment following this 'risk-based methodology' for the proposed use and cooking-related food odour is presented within Table 4-1. The significance score has been determined in reference to the criteria outlined in Table B-1 (transposed from Appendix 3 of the EMAQ+ guidance).

Table 4-1: EMAQ+ Scoring Criteria – Hot Food Takeaway Kitchen Extraction

Category	Significance Score	Detail
Dispersion	5	Extraction air is routed to roof level via an ESP-UV system and discharged vertically. The height of the kitchen extract stack is 1m above the roof ridge. As such, dispersion is classified as 'good'.
Proximity of the receptors	10	The closest sensitive receptor is located <20m from the kitchen discharge. As such, proximity of receptors is classified as 'close'.
Size of kitchen	5	It is anticipated that the hot food takeaway would produce approximately 200-220 covers (meals) per day. As such, the kitchen size is classified as 'large'.
Cooking type	10	The hot food takeaway is anticipated to undertake grilling or oven cooking of burgers and other fried foods. As such, the associated odour and grease loading is classified as 'very high'.
Total score	30	

As presented in Table 4-1 the significance score is 30, with the most significant contributors being the odour and grease loading associated with the cooking type ('very high') and the 'close' proximity of receptors.

4.2 Odour Control Requirement

The significance score of 30 corresponds to a 'high' associated requirement for odour control, determined in reference to the criteria outlined in Table B-2 (transposed from Appendix 3 of the EMAQ+ guidance).

The EMAQ+ guidance states that to achieve satisfactory odour control, the ventilation system should include an adequate level of:

- "1. Particulate and odour control; and*
- 2. Stack dispersion.*

The overall performance of an odour abatement system will represent a balance of 1 and 2."



and

“Discharge stack:

- 1. Discharge the extracted air not less than 1m above the roof ridge of any building within 15m of the vent serving the commercial kitchen. Additional odour control measures may still be required depending on the cooking type and frequency.”*

As presented within Table 4-1 and in reference to the drawings for the Proposed Development (drawing number: 13671-P06 Rev.A) the ESP-UV extract discharges air via the roof mounted high temperature kitchen extract fan at 1m above the roof ridge.

The mitigation measures outlined within the EMAQ+ guidance corresponding to a ‘high’ associated requirement for odour control are either:

1. Fine filtration or an Electrostatic Precipitator (ESP) followed by carbon filtration (carbon filters rated with a 0.2 – 0.4 second residence time); or
2. Fine filtration or ESP followed by a Ultraviolet (UV) ozone system, to achieve the same level of control as option 1 above.

As detailed in Section 3.2, an ESP-UV system is proposed.



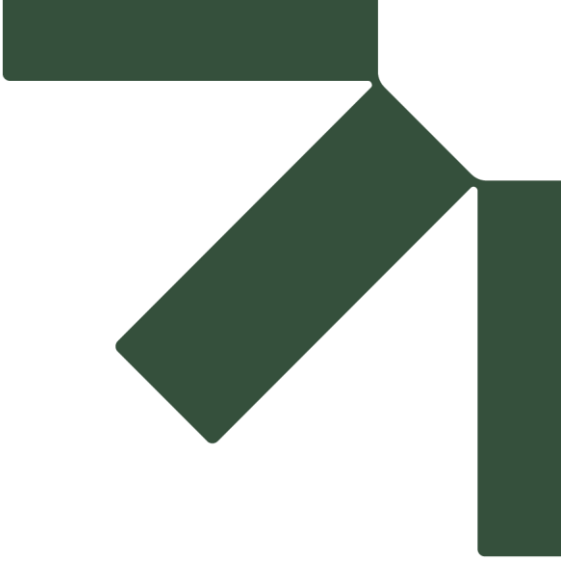
5.0 Conclusions

SLR Consulting Ltd has been commissioned by Motor Fuel Group Limited to undertake a kitchen odour assessment for a proposed hot food takeaway at Levenshulme Service Station.

A review of the existing baseline conditions within the vicinity of the Site has been undertaken as well as the potential for odour from the kitchen within the Proposed Development.

The methodology provided by the EMAQ+ guidance indicates the cooking operations and kitchen extract system proposed at the Site would have a 'high' significance score. Therefore, a corresponding 'high' level of odour control would be required to protect the amenity of nearby sensitive receptors as a result of potential odours from the Proposed Development. As detailed in Section 3.2 an ESP-UV system is proposed and the kitchen extract stack is to discharge 1m above the roof ridge, aligning to a 'high' level of odour control as outlined within the EMAQ+ guidance.





Appendix A IAQM Receptor Sensitivity to Odours

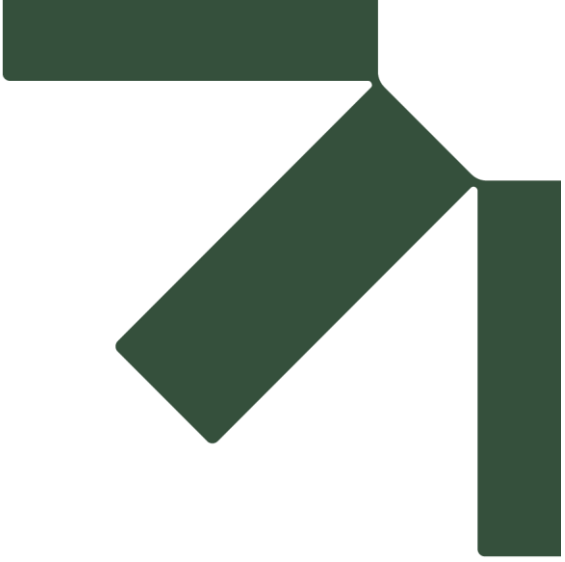
To facilitate the assessment of the significance of predicted odour exposure on amenity, the guidance defines receptor sensitivity and proposes 'odour effect descriptors' which combine the relative sensitivity of the receptors, the nature (or offensiveness) of the odour with quantitative predicted odour exposure levels.

The IAQM receptor sensitivity types are summarised in Table A-1.

Table A-1: IAQM Odour Guidance - Receptor Sensitivity to Odours

Receptor Sensitivity	Example Land-uses
High Sensitivity Receptor	<p>Surrounding land where:</p> <ul style="list-style-type: none"> • Users can reasonably expect enjoyment of a high level of amenity; and • People would reasonably be expected to be present here continuously, or at least regularly for extended periods, as part of the normal pattern of use of the land. <p>Examples may include residential dwellings, hospitals, schools/education and tourist/cultural.</p>
Medium Sensitivity Receptor	<p>Surrounding land where:</p> <ul style="list-style-type: none"> • Users would expect to enjoy a reasonable level of amenity, but wouldn't reasonably expect to enjoy the same level of amenity as in their home; or • People wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of land use. <p>Examples may include places of work, commercial/retail premises and playing/recreation fields.</p>
Low Sensitivity Receptor	<p>Surrounding land where:</p> <ul style="list-style-type: none"> • The enjoyment of amenity would not be reasonably be expected; or • There is transient exposure, where people would reasonably be expected to be present only for limited periods of time as part of the normal pattern of use of the land. <p>Examples may include industrial use, farms, footpaths and roads.</p>





Appendix B EMAQ+ Scoring and Significance Criteria

The EMAQ+ guidance for the control of odour from commercial kitchen exhaust systems provides the following methodology for determining odour control requirements for kitchen exhausts.

Table B-1: EMAQ+ Scoring Criteria

Criteria	Score		Example Land-uses
Dispersion	Very Poor	20	Low level discharge, discharge into courtyard or restriction on stack.
	Poor	15	Not low level but 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 20m from kitchen discharge.
	Medium	5	Closest sensitive receptor between 20 and 100m from kitchen discharge.
	Fair	1	Closest sensitive receptor more than 100m from kitchen discharge.
Size of Kitchen	Large	5	More than 100 covers or large sized take away.
	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 or grease loading)	Very High	10	Pub (high level of fried food), fried chicken, burgers or fish & chips.
	High	7	Kebab, Vietnamese, Thai or Indian.
	Medium	4	Cantonese, Japanese or Chinese.
	Low	1	Most pubs, Italian, French, Pizza or steakhouse.

Based on the summation of the contributions from dispersion, proximity of receptors, size of kitchen and cooking type the odour control required, and risk of impact is determined using the criteria in Table B-2.

Table B-2: Determination of Significance Score

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 of odour control	More than 35





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