



IN REFERENCE TO 60 OLDHAM STREET, MANCHESTER, M4 1LE.

NOVEMBER 18, 2021 – Commercial Kitchen Exhaust System

Attached to this letter is "2321-1 – Odour Impact Assessment – 60 Oldham Street, Manchester" in relation to Manchester City Council planning application "120878/FO/2018". Please see APPENDIX 1

In the Odour Impact Assessment, as accepted by Manchester City Council on 21 September 2018, the following mitigation options were advised to reduce the potential effects to an acceptable level. The DEFRA Assessment Methodology was used.

Mitigation Options

Based on the assessment results, the development requires mitigation suitable for a high level of odour risk. This should include removal of both potential particulate and gaseous phase pollutants. There are a number of options for each of the three recommended abatement steps identified within the DEFRA guidance that provides this level of control. These include:

- Grease Filtration System: Cartridge filters are suitable for heavy grease loads and such would provide robust control of emissions from the cooking processes at the proposed kitchen. A water wash system may also be selected.
- Fine Dust Filtration: Bag, fan or High Efficiency Particulate Arrestance (HEPA) filter.
- Gaseous Phase: An activated carbon filter. Alternatively, an oxidation system such as ultraviolet light or ozone may be used.

It is also recommended that a cowl is not fitted on the proposed flue of 14.5m as this inhibits the dispersion of odour.

Mitigation Installation

Based on the above mitigation options advised using DEFRA Assessment Methodology the following mitigation was installed:

- Grease Filtration System: Six cartridge filters installed within the kitchen canopy to capture any initial heavy grease loads.
- Fine Dust Filtration: A HEPA filter has been installed before the exhaust fan.
- Gaseous Phase: Activated carbon filter.

Although a traditional cowl with rain cover was not advised, we opted to install a high velocity jet cowl by Hydroponics to ensure fast, vertical dispersion. These cowls use a drainage pipe to prevent water ingress rather than a rain cover.

The installation of sound attenuators before and after the exhaust fan within this system ensures the mitigation of excessive noise and that the externally mounted equipment falls 5dB below the existing background level at the nearest noise sensitive location.

Conclusion

In conclusion, all mitigation requirements initially accepted by Manchester City Council have been met to reduce the potential effects of the commercial kitchen exhaust to an acceptable level.

There are a number of areas where this system could still be improved as agreed by both Kyodo Group Ltd and Reform Developments Ltd. This includes extending the height of the flue beyond the initially advised 14.5m and potentially upgrading the activated carbon filter to an ozone system such as an ESP by Purified Air.

Danny Collins

APPENDIX 1

Odour Impact Assessment
Oldham Street, Manchester

Client: 60 Oldham Street Ltd

Reference: 2321-1r1

Date: 27th July 2018



Report Issue

Report Title: Odour Impact Assessment - Oldham Street, Manchester

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Prepared by	Oliver Hanlon			
Position	Graduate Air Quality Consultant			
Issued by	Jethro Redmore			
Position	Director			
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Heliport Business Park, Liverpool Road, Manchester, M30 7RU

info@red-env.co.uk | 0161 706 0075 | www.red-env.co.uk

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Executive Summary

Redmore Environmental Ltd was commissioned by 60 Oldham Street Ltd to undertake an Odour Impact Assessment in support of the planning application for the proposed redevelopment of 60 Oldham Street, Manchester, to provide an eating and drinking establishment and eight residential units.

The development has the potential to cause odour impacts as a result of emissions from cooking processes from the proposed eating and drinking establishment. As such, an Odour Impact Assessment was undertaken in order to assess potential effects as a result of the scheme and identify the necessary mitigation measures to prevent adverse impacts.

An assessment using standard methodology was undertaken in order to identify the odour risk associated with the proposals. This was based on a number of site specific inputs.

The results of the assessment indicated the odour risk was classified as **high**. This prediction does not infer that the proposed development would result in significant odour impact or affect local amenity levels. However, it does suggest that appropriate mitigation is required to reduce potential effects to an acceptable level.

The recommended abatement option has been specified in line with the relevant guidance for kitchens with a **high** risk of impact. It therefore follows that with this mitigation in place, potential odour impact at nearby sensitive receptors would be reduced to an acceptable level.

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1.0 INTRODUCTION

1.1 Background

- 1.1.1 Redmore Environmental Ltd was commissioned by 60 Oldham Street Ltd to undertake an Odour Impact Assessment in support of the planning application for the redevelopment of 60 Oldham Street, Manchester.
- 1.1.2 The development has the potential to cause odour impacts as a result of emissions from food preparation. As such, an Odour Impact Assessment was undertaken in order to assess potential effects as a result of the scheme and identify the necessary mitigation measures to prevent adverse impacts.

1.2 Site Location and Context

- 1.2.1 The site is located at 60 Oldham Street, Manchester, at approximate National Grid Reference (NGR): 384501, 398440. Reference should be made to Figure 1 for a map of the site and surrounding area.
- 1.2.2 The proposals involve the redevelopment of the existing building to provide an eating and drinking establishment across lower and ground floor level and eight residential units.
- 1.2.3 The proposed development is located in a terrace setting bound by Spear Street to the front and Oldham Street to the rear. The surrounding buildings include several cafes, restaurants, bars, retail units and apartments. Residential receptors are located on the first floor and above of several units within the terrace, as well as from ground floor upwards within the proposals.
- 1.2.4 The proposed kitchen will be located on the lower ground floor of the premises. Extract air from the cooking processes will be discharged to atmosphere through a dedicated flue located in the courtyard within the centre of the site. The exhaust system will discharge air at a height of 14.5m, approximately 60cm above the eaves of the building's north-western elevation and below the eaves of the building's south-eastern elevation. Reference should be made to Figure 2 for a location plan of the extraction stack.
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- 1.2.5 Information provided by the applicant indicated the establishment will be serving a small plates style menu prepared using induction hobs. As such, a high level of odour and grease loading is not anticipated.
- 1.2.6 The operation of cooking facilities may result in odour emissions. These have the potential to cause impacts at sensitive locations within the vicinity of the site and have therefore been assessed within this report.
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2.0 ODOUR BACKGROUND

2.1 Odour Definition

2.1.1 Department for Environment, Food and Rural Affairs (DEFRA) guidance¹ defines odour as:

"An odour is the organoleptic attribute perceptible by the olfactory organ on sniffing certain volatile substances. It is a property of odorous substances that make them perceptible to our sense of smell. The term odour refers to the stimuli from a chemical compound that is volatilised in air. Odour is our perception of that sensation and we interpret what the odour means. Odours may be perceived as pleasant or unpleasant. The main concern with odour is its ability to cause a response in individuals that is considered to be objectionable or offensive.

Odours have the potential to trigger strong reactions for good reason. Pleasant odours can provide enjoyment and prompt responses such as those associated with appetite. Equally, unpleasant odours can be useful indicators to protect us from harm such as the ingestion of rotten food. These protective mechanisms are learnt throughout our lives. Whilst there is often agreement about what constitutes pleasant and unpleasant odours, there is a wide variation between individuals as to what is deemed unacceptable and what affects our quality of life."

2.1.2 Although it is recognised that the DEFRA guidance² has been formally withdrawn, the definition of odour provided within the document is still considered to be relevant in the context of the assessment.

2.2 Odour Impacts

2.2.1 The magnitude of odour impact depends on a number of factors and the potential for complaints varies due to the subjective nature of odour perception. The **FIDOR** acronym, as outlined below, is a useful reminder of the factors that will determine the degree of odour pollution:

¹ Odour Guidance for Local Authorities, DEFRA, 2010.

² Odour Guidance for Local Authorities, DEFRA, 2010.

- **F**requency of detection - frequent odour incidents are more likely to result in complaints;
- **I**ntensity as perceived - intense odour incidents are more likely to result in complaints;
- **D**uration of exposure - prolonged exposure is more likely to result in complaints;
- **O**ffensiveness - more offensive odours have a higher risk of resulting in complaints; and,
- **R**eceptor sensitivity - sensitive areas are more likely to have a lower odour tolerance.

2.2.2 The FIDOR factors can be further considered to provide the following issues in regards to the potential for an odour emission to cause a nuisance:

- The rate of emission of the compound(s);
- The duration and frequency of emissions;
- The time of the day that this emission occurs;
- The prevailing meteorology;
- The sensitivity of receptors to the emission i.e. whether the odorous compound is more likely to cause nuisance, such as the sick or elderly, who may be more sensitive;
- The odour detection capacity of individuals to the various compound(s); and,
- The individual perception of the odour (i.e. whether the odour is regarded as unpleasant). This is greatly subjective, and may vary significantly from individual to individual. For example, some individuals may consider some odours as pleasant, such as petrol, paint and creosote.

2.3 **Legislative Control**

2.3.1 Should odour impacts occur as a result of the development additional powers beyond those provided through planning are available to the Local Authority. These are detailed in Section 79 of Part III of the Environmental Protection Act (1990) (hereafter the Act). If the Local Authority is satisfied that a statutory nuisance exists, or is likely to occur or happen again, it can serve an Abatement Notice under Part III of the Act. Enforcement can insist that there be no odour sensed beyond the boundary of the works. The only 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.

2.4 National Planning Policy

2.4.1 The revised National Planning Policy Framework³ (NPPF) was published in July 2018 and sets out the Government's planning policies for England and how these are expected to be applied.

2.4.2 A core principle relating to air quality effects from development is that planning should:

"contribute to conserving and enhancing the natural environment and reduce pollution".

2.4.3 In achieving this, it states that:

"The planning system should contribute to and enhance the natural and local environment by:

[...]

preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability [...]"

2.4.4 With regard to assessing cumulative effects the NPPF states:

"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"

2.4.5 The implications of the NPPF have been considered throughout this assessment.

³ NPPF, Ministry of Housing, Communities and Local Government, 2018.

2.5 Local Planning Policy

2.5.1 The Manchester Local Development Framework consists of a series of planning documents of which the Core Strategy⁴ is central. This was adopted by Manchester City Council (MCC) on 11th July 2012 and provides policies which guide the determination of planning applications within the city.

2.5.2 Review of the Core Strategy identified the following policy of relevance to this assessment:

"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 privacy, light, noise, vibration, air quality, odours, litter, vermin, birds, road safety and traffic generation. This could also include proposals which would be sensitive to existing environmental conditions such as noise.

[...]"

2.5.3 This policy has been considered throughout this assessment by considering potential odour effects as a result of the proposals.

⁴ Core Strategy, MCC, 2012.

3.0 **METHODOLOGY**

3.1 **Introduction**

3.1.1 The proposed development has the potential to cause odour impacts as a result of emissions from cooking processes. Impacts have therefore been assessed using the DEFRA methodology⁵. Although it is recognised that this document has been formally withdrawn, it has not been superseded and has therefore been utilised in lieu of other guidance.

3.1.2 The relevant process is summarised in the following Sections.

3.2 **DEFRA Assessment Methodology**

3.2.1 The DEFRA methodology provides an approach for identifying the risk of odour impact associated with food preparation premises and defining an appropriate level of mitigation to control potential effects to an acceptable level.

3.2.2 The first stage in the process is to score the proposed premises in accordance with the criteria outlined in Table 1.

Table 1 Risk Scoring Criteria

Criteria	Score	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 or 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

⁵ Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems, DEFRA, 2005.

Criteria	Score	Score	Details
	Far	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 and 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

3.2.3 The score obtained using the values shown in Table 1 is subsequently used to define the associated risk and odour control requirement. The relevant criteria are summarised in Table 2.

Table 2 Odour Control Requirement

Significance Score	Impact Risk	Odour Control Requirement
Less than 20	Low to Medium	Low level odour control
20 to 35	High	High level odour control
More than 35	Very high	Very high level odour control

3.2.4 A suitable odour control system can then be identified from the techniques summarised in the DEFRA guidance⁶.

⁶ Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems, DEFRA, 2005.

4.0 **ASSESSMENT**

4.1 **Odour Risk**

4.1.1 The odour risk associated with the proposals was rated in accordance with the DEFRA methodology⁷. The results are summarised in Table 3.

Table 3 Odour Risk

Criteria	Score	Score	Notes
Dispersion	Poor	15	The kitchen is located in the centre of the building at lower ground floor level. Emissions from the cooking processes will be discharged to the atmosphere through a dedicated flue, located in the courtyard in the middle of the site. The flue will discharge air at a height of 14.5m, approximately 60cm above the eaves of the building's north-western elevation and below the eaves of the building's south-eastern elevation
Proximity of receptors	Close	10	The closest sensitive receptors are less than 20m from the proposed kitchen and associated extract flue
Size of kitchen	Large	5	The number of covers is not known at this stage. Based on the size of the establishment in combination with the kitchen's operational hours, the kitchen size was classified as large
Cooking type (odour and grease loading)	Low	1	Information provided by the applicant indicated the establishment will be serving a small plates style menu prepared using induction hobs. As such, a high level of odour and grease loading is not anticipated

4.1.2 As shown in Table 3, the odour risk from the proposed kitchen facility was scored as 31. The risk was therefore classified as **high**, in accordance with the DEFRA criteria.

4.2 **Odour Control**

4.2.1 Based on the assessment results, the development requires mitigation suitable for a **high** level of odour risk. This should include removal of both potential particulate and gaseous

⁷ Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems, DEFRA, 2005.

phase pollutants. There are a number of options for each of the three recommended abatement steps identified within the DEFRA guidance that provide this level of control. These include:

- Grease filtration system - Cartridge filters are suitable for heavy grease loads and such would provide robust control of emissions from the cooking processes at the proposed kitchen. A water wash system may also be selected;
- Fine dust filter - Bag, fan or High-Efficiency Particulate Arrestance (HEPA) filter; and,
- Gaseous phase - An activated carbon filter. Alternatively, an oxidation system such as ultraviolet light or ozone may be used.

4.2.2 It is understood that the proposals include the provision of a carbon filter to treat the air before discharge. As outlined above, this should follow after the installation of a grease filter and fine dust filtration system. It is also recommended that a cowl is not fitted on the proposed flue as this inhibits the dispersion of odour. This filtration system is likely to offer the most economical abatement option and is suggested within the DEFRA guidance for kitchens with a **high** risk of impact. As such, it is considered a suitable approach to reduce impact at residential locations of concern.

5.0 CONCLUSION

- 5.1.1 Redmore Environmental Ltd was commissioned by 60 Oldham Street Ltd to undertake an Odour Impact Assessment in support of the planning application for the redevelopment of 60 Oldham Street, Manchester.
- 5.1.2 The development has the potential to cause odour impacts as a result of emissions from cooking processes. As such, an Odour Impact Assessment was undertaken in order to assess potential effects as a result of the scheme and identify the necessary mitigation measures to prevent adverse impacts.
- 5.1.3 An assessment using standard methodology was undertaken in order to identify the odour risk associated with the proposals. This was based on a number of site specific inputs.
- 5.1.4 The results of the assessment indicated the odour risk was classified as **high**. This prediction does not infer that the proposed development would result in significant odour impact or affect local amenity levels. However, it does suggest that appropriate mitigation options are required to reduce potential effects to an acceptable level.
- 5.1.5 The recommended abatement option has been specified in line with DEFRA guidance for kitchens with a **high** risk of impact. It therefore follows that with this mitigation in place, potential odour impact at nearby sensitive receptors would be reduced to an acceptable level.
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6.0 ABBREVIATIONS

DEFRA

Department for Environment, Food and Rural Affairs

HEPA

High Efficiency Particulate Arrestance

MCC

Manchester City Council

NGR

National Grid Reference

NPPF

National Planning Policy Framework

Figures



Legend



Title

Figure 1 - Site Location Plan

Project

Odour Impact Assessment
Oldham Street, Manchester

Project Reference

2321-1

Client

60 Oldham Street Ltd

Contains Ordnance Survey Data
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