



1rO10083

REPORT FOR

ODOUR ASSESSMENT

AT

220 UPPER BROOK STREET MANCHESTER

PREPARED FOR

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OO-LIFE LTD

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Date

28/07/2023

QUALITY ASSURANCE

Issue / Revision	Issue	Revision 1	Revision 2
Remarks	Issue 1		
Date	28/07/2023		
Prepared By	Lewis Ellison		
Job Title	Technical Director		
Signature			
Project Number	1rO10083		

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EXECUTIVE SUMMARY

The following Kitchen Odour Risk Assessment has been undertaken and produced by Planning and Environmental Consultants (PEC) Ltd on behalf of OO-Life Ltd, in support of the proposed Chinese Takeaway at 220 Upper Brook Street M13 9LY.

A planning application has been submitted for an installed kitchen extraction unit to support the 23m² takeaway. Following the submission of the application, it has been requested that an Assessment of the potential cooking odours from the takeaway is undertaken.

The proposed kitchen extraction is situated in close proximity to existing sensitive residential and medical receptors. As such, a Kitchen Odour Risk Assessment has been undertaken in order to consider the potential impacts and set out the required controls.

Based on the results of the risk assessment and the proposed implementation of kitchen exhaust filters, alongside good dispersion and associated plant maintenance design, it is considered that the proposed kitchen exhaust is acceptable without the requirement for additional abatement. It is therefore considered that the odour emissions from the kitchen are unlikely to cause loss of amenity to nearby sensitive receptors.

1 INTRODUCTION

1.1 BACKGROUND

Planning and Environmental Consultants (PEC) Ltd have been commissioned by OO-Life Ltd, hereafter referred to as “the Client” to undertake a Kitchen Odour Risk Assessment in support of a planning application at 220 Upperbrook Street, M13 9LY, herein after referred to as the “Proposed Development”.

1.2 SITE LOCATION AND CONTEXT

The application site is located at 220 Upperbrook Street, M13 9LY at approximate National Grid Reference (NGR) 385080, 396390, Reference should be made to Figure 1 within Appendix I for a location plan.

The proposal comprises of the removal of the existing hair dressers and addition of a Chinese takeaway unit alongside associated kitchen extract, the proposal subsequently has the potential to cause odour emission impacts at nearby receptors.

A Kitchen Odour Risk Assessment was therefore required in order to assess the risk of odour impacts from the site and, if necessary, recommend required odour controls. The assessment will be undertaken in accordance with the requirements of the National Planning Policy Framework (NPPF) and the Manchester City Council (MCC) Local Planning Policy.

1.3 LIMITATIONS

This report has been produced in accordance with PEC Ltd standard terms of engagement. This report is solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from PEC Ltd at which point a charge may be levied against such approval.

2 LEGISLATION, GUIDANCE AND POLICY

The following legislation, guidance and policy will be considered and adhered to during the preparation of the Odour Risk Assessment:

- Odour Guidance for Local Authorities, Department for Environment, Food and Rural Affairs, 2010¹.
- The National Planning Policy Framework (NPPF), updated on 19th February 2019);
- The National Planning Practice Guidance (NPPG), relevant chapters produced on 1st November 2019;
- 2018 EMAQ document 'Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems'²

2.1 ODOUR DEFINITION

The 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."

Odours that are universally considered as offensive such as decaying animal matter are more likely to cause annoyance than odours of a less offensive character. Odours from coffee roasters are generally considered as on the non-offensive scale of hedonic tones. However it is noted that any odour has the potential to cause loss of amenity if a sensitive receptor considers the odour as 'unwanted'.

¹ Odour Guidance for Local Authorities, Department for Environment, Food and Rural Affairs, 2010

² Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems, EMAQ, 2018. Update to the 2004 report.

3 METHODOLOGY

The exhaust outlet that serves the kitchen has the potential to cause odour emissions. An odour risk assessment was undertaken based on Annex C of the 2018 EMAQ document 'Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems' prepared for the Department for Environment, Food and Rural Affairs².

This utilises the criteria shown in Table 1 to assess the potential for adverse odour impacts at sensitive receptors in the vicinity of the site.

Table 1: Odour Risk Significance Score

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 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.
	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 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. Turkish, Middle Eastern or any premises cooking with solid fuel
	High	7	Vietnamese, Thai, Indian, Japanese, Chinese, steakhouse
	Medium	4	Cantonese, Italian, French, Pizza (gas fired)
	Low	1	Most pubs (no fried food, mainly reheating and sandwiches etc), Tea rooms

The score calculated in Table 1 can then be used to inform the indicative level of odour or grease control required as shown in Table 2.

Table 2: Odour Control Requirement

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

4 ASSESSMENT

4.1 EMAQ ODOUR RISK ASSESSMENT

The score for the proposed kitchen using the EMAQ Guidance Criteria given in Table 1 is calculated in Table 3.

The kitchen is situated on the ground floor of 220 Upperbrook Street and is within the 23m² unit. The small kitchen is primarily serving Chinese takeaway food which often involves fried items. The kitchen is understood to be operational in the afternoon into the evening, in which the extraction fan is expected to be used throughout this period.

The stack termination point should be situated 1m above the eave to the rear of the unit to improve dispersion. As the units directly above and adjacent to 220 Upperbrook Street are commercial they are not considered to be high sensitivity receptors in line with the IAQM guidance on the assessment of odour for planning. The closest sensitive receptors are located approximately 40m from the site, Manchester Royal Infirmary and Grafton Street Student Accommodation.

Subsequently, the new ESP 1500EI kitchen ventilation and exhaust system that is proposed to be installed will include a stack termination point situated at least 1m above eave of the building. Based on this information, Table 3 shows the odour risk score for the new kitchen extraction unit.

Table 3: Odour Risk Significance Score

Criteria	Score	Details
Dispersion	10	Discharging 1m above eaves.
Proximity of Receptors	5	Closest sensitive receptor between 20 and 100m from kitchen discharge.
Size of Kitchen (Facility)	1	small take away.
Cooking Type	7	Vietnamese, Thai, Indian, Japanese, Chinese, steakhouse
Total	23	High Impact Risk - High Level Odour Controls

This score is taken without consideration of any filters installed and is used to inform the required level of controls.

4.2 DISCUSSION

The EMAQ risk assessment indicated, based on the initial information provided, that the odour risk is assessed as in the High Impact Category. Therefore according to the guidance, High Level Odour Controls would normally be required to render odour impacts as not significant.

4.2.1. KITCHEN EXHAUST DISPERSION

The full specification of the extraction flue was not available at the time of writing, however it has been confirmed that a Purified Air ESP 1500EI (or better) will be installed at the site which provides a flow rate of at least 0.7m³/s or 7m/s with a flue diameter of 355mm. Due to the distance from the kitchen to nearby sensitive receptors, it has been recommended that the flue discharge at 1m above the level of the eaves to improve odour dispersion.

4.2.2. FURTHER ODOUR CONTROLS

In addition to flue dispersion improvements, sufficient odour controls will require odour abatement technologies on the exhaust vent.

Grease particles are a major source of the entrainment of odours in exhaust flues. The provision of an exhaust system that includes the provision of a baffle filter with close coupled baffle sections would provide a good level of grease removal and provide the required fire protection.

To achieve a high level of odour control EMAQ guidance² suggests the following options:

1. Fine filtration or Electro Static Precipitation (ESP) followed by carbon filtration (carbon filters rated with a 0.4 - 0.8 second residence time);
2. Fine filtration or ESP followed by UV ozone system to achieve the same level of control as 1.

It has been confirmed that fine filtration provisions are to be installed within the proposed new kitchen vent, which will adequately filter and remove odourous fumes from the extracted air. The addition of further filters within the ducting systems have the potential to decrease the overall discharge rate output and therefore have not been considered further.

It should also be noted that the site will operate at a small scale serving between 20 and 50 people per day. Based on the above assessment, the installation of the new exhaust vent, with installation of the fine filtration unit will aid the dispersion away from sensitive receptors and would offer abatement to reduce the impact on the surrounding sensitive areas.

4.2.3. SUMMARY

Given the results of the risk assessment and its locality to **highly-sensitive receptors**, it is considered that the odour emissions from the proposed kitchen has the potential to cause loss of amenity to nearby sensitive receptors. Notwithstanding this, the installation and maintenance of the fine filtration system is therefore considered appropriate and sufficient for this kitchen extract.

5 CONCLUSION

PEC Ltd were commissioned by OO-Life Limited, hereafter referred to as “the Client” to undertake an Odour Risk Assessment in relation to an existing kitchen extraction unit at 220 Upperbrook Street, M13 9LY

A planning application has been submitted which includes the installation of a kitchen extraction unit. As such, a Kitchen Odour Risk Assessment was required in order to consider the potential odour impacts at sensitive receptors and the effectiveness of the proposed odour controls on the proposed kitchen exhaust flue.

The EMAQ risk assessment indicated that due to the location and nature of the exhaust vent and cooking type that the risk of odour impacts is ‘high’. Therefore, according to the guidance, a ‘high’ level of odour control is required.

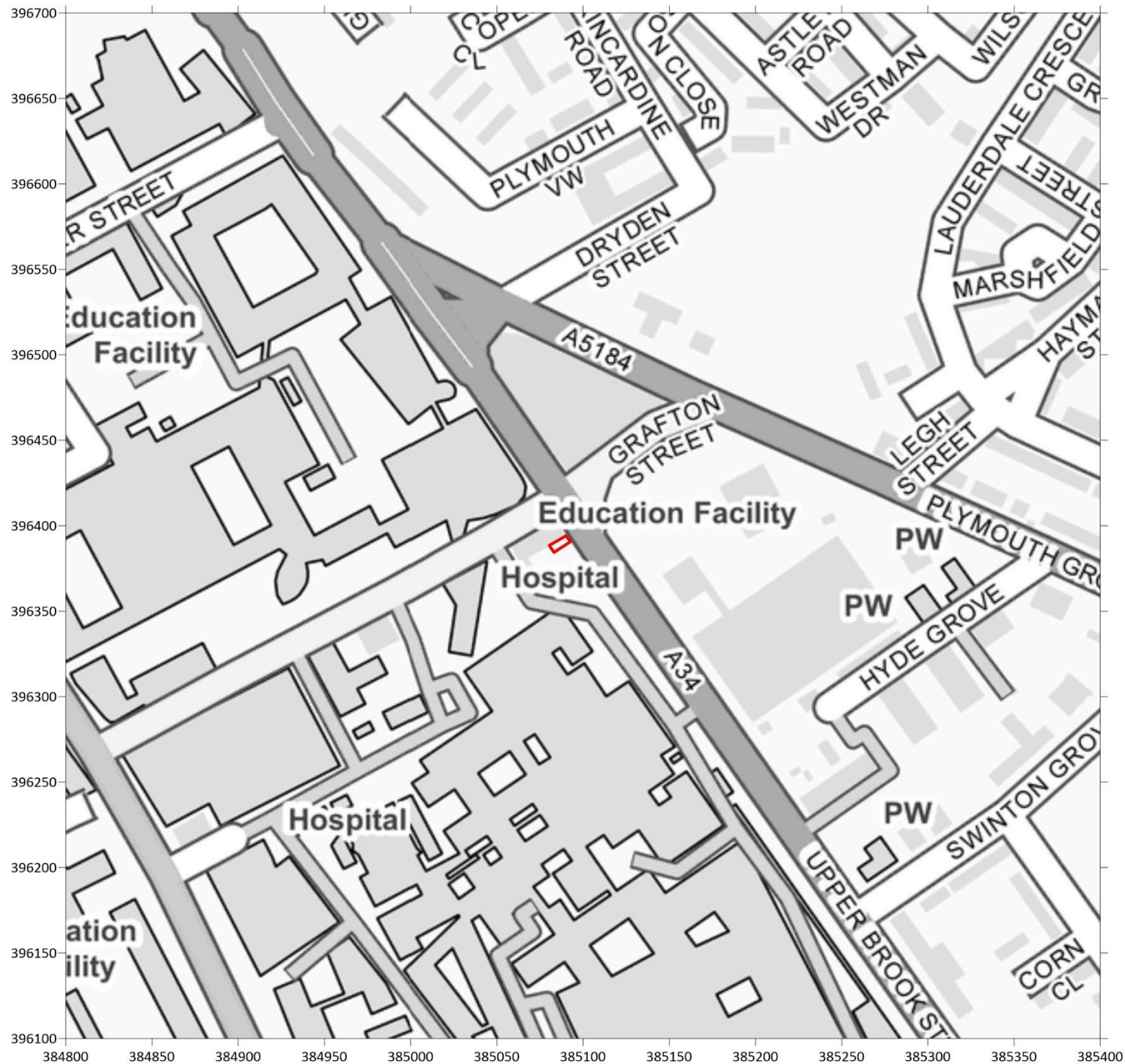
The proposed kitchen exhaust is to discharge at a level 1m above the eave of the building to maximise odour dispersion. Additional odour abatement in the form of a fine filtration system is also to be installed to provide a good level of odour control.

Given the results of the risk assessment and the proposed implementation of kitchen exhaust filters, alongside good dispersion and associated plant maintenance design, it is considered that the proposed kitchen exhaust is acceptable without the requirement for additional abatement beyond what has been detailed within this report. It is therefore considered that the odour emissions from the kitchen are unlikely to cause loss of amenity to nearby sensitive receptors.

APPENDIX A – ABBREVIATIONS

DEFRA	Department for Environment, Food and Rural Affairs
LAQM	Local Air Quality Management
MCC	Manchester City Council
NGR	National Grid Reference
NPPF	National Planning Policy Framework

APPENDIX B - FIGURES



Site Boundary

Figure 1
Site Location

Project Number
AQ10083

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Legend

-  Site Boundary
-  20m from Site
-  100m from Site

Title

Figure 2
Receptor Proximity

Project

220 Upperbrook Street

Project Number

AQ10083

Contains Ordnance Survey Data
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Lewis Ellison Technical Director MOcean, AMIEnvSc, MIAQM
KEY EXPERIENCE Lewis is a Technical Director with specialist experience in the air quality sectors. His key capabilities include: • Production of Air Quality Assessments to the Department for Environment, Food and Rural Affairs (DEFRA), Environment Agency and Environmental Protection UK (EPUK) methodologies for clients from the residential, retail and commercial sectors. • Detailed dispersion modelling of road vehicle emissions using ADMS-Roads. Studies have included impact assessment of pollutant concentrations at various floor levels and assessment of suitability of development sites for proposed end-use. • Assessment of dust impacts from construction sites to the Institute of Air Quality Management (IAQM) methodology. • Assessment of Odour Impact from commercial and industrial processes in line with Environment Agency (EA) and IAQM methodologies and guidance • Quantification of Ecological Impacts associated with Nitrogen and Acid Deposition from industrial processes • Production of air quality mitigation strategies for developments throughout the UK.
SELECT PROJECTS SUMMARY Permit Application Support • Elliot Hire Salford • Elliot Hire Wakefield • Elliot Hire Scunthorpe ES Chapters • Lyle Park West, Newham – residential development in close proximity to an active industrial estate. • Deansgate, Manchester – residential multistorey development in the centre of Manchester. • Land West of Stevenage – 1350 residential unit development with the potential to negatively impact local air quality Air Quality • Goulton Street Hull – Outline planning permission for 7 industrial units within Hull • Empire Cinema, Birmingham – Diffusion tube survey and air quality assessment for an assisted living accommodation • Tirrell's Lane, Tenbury Wells – residential assessment in the village of Tenbury Wells. Odour Assessments • Gowanbank, Forfar – Odour survey to support a residential development in close proximity to Gowanbank recycling centre • Squires Close, Pocklington – Odour risk assessment in support of a residential in close proximity to a sewage treatment works • Hawthorn Fields, Rufforth - Odour risk assessment in support of a residential in close proximity to a waste water treatment works Dust Assessment • Liverpool Docks – Construction dust monitoring survey • Lyle Park West – Dust impact assessment from adjacent concrete batching plant • High Street, Burton – Construction dust risk assessment London Experience • Gurnell Leisure Centre – mixed use development including residential, sports and commercial land use • Springfield Village Wandsworth – residential development and extension to the existing hospital building • Evelyn House, Greenwich – residential apartment block Monitoring & Surveying Experience • Liverpool Waters – Frisbee Dust gauge monitoring • Gownbank, Forfar – Field odour survey “sniff test” • Empire Cinema Birmingham – Diffusion tube survey
QUALIFICATIONS • Masters of Geological Oceanography • Odour Acuity Certified Master of Science