

COMMERCIAL KITCHEN ODOUR RISK ASSESSMENT

on behalf of

68K RED AND BLACK LTD

for

**2-4 CHAPEL STREET, PRESCOT,
KNOWSLEY**

REPORT DATE: 23 NOVEMBER 2023

REPORT NUMBER: 103057

Miller Goodall Ltd
Ground Floor
Ashworth House
Deakins Business Park
Blackburn Road
Egerton
Bolton
Lancashire
BL7 9RP

Tel: 01204 596166

www.millergoodall.co.uk

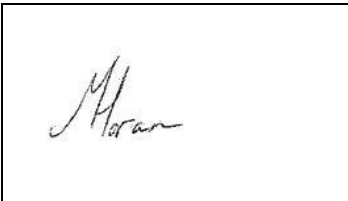
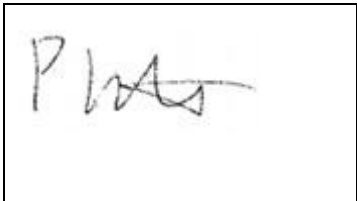
Company registration number 5201673



Summary

This assessment has been undertaken to accompany a planning application for a residential development on 2-4 Chapel Street, Prescot, Knowsley.

There are two restaurants in close proximity to the proposed development. Commercial kitchen odour risk assessments have been undertaken for both restaurants. With a high level of odour control at both restaurants, and the stack relocation and stack replacement at Spice Chilli Prescot, there is no reason for this application to be refused on the grounds of odour.

Prepared By	Melody Horan	Reviewed By	Philip Walton
Signed		Signed	
Date	23 November 2023	Date	23 November 2023

Record of changes

Version	Date	Change	Initials
1	23 November 2023	First issue	MH

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1 Introduction

- 1.1 This kitchen odour assessment has been undertaken to accompany a planning application for a residential development at 2-4 Chapel Street, Prescott, Knowsley. The site lies within the administrative boundary of Knowsley Metropolitan Borough Council (KMBC).
- 1.2 There are a number of factors that influence the magnitude of an odour problem, these include:
- size of the cooking facility – influences the intensity of the odour;
 - type of food being prepared – affects the chemical constituents within the ventilation air;
 - type of cooking appliances used – which the level of fat, water droplets and temperature within the ventilation air; and
 - the location of the premises.
- 1.3 The report provides a commercial kitchen risk assessment and review of the odour associated with nearby restaurants on the proposed residential development, in accordance with established guidance from EMAQ+ ^[1].

2 Site Description

- 2.1 The proposed development is located in Prescott town centre.
- 2.2 There is a vacant plot to the north of the site associated with Mr Ho's, a Cantonese and Vietnamese restaurant. Spice Chilli Prescott, an Indian restaurant, is located to the east of the site. Both of these restaurants are potential odour sources. The stack associated with Mr Ho's is approximately 10 m northeast of the development site. The stack associated with Spice Chilli Prescott is partially within the development site; however, as discussed later in this report the stack will be relocated and its height increased. A commercial establishment The Brazilian Waxing Studio, is located to the south of the site, this is not considered an odour source. Chapel Street runs along the western site boundary.
- 2.3 The site location is shown in **Appendix A**.

3 Proposed Development

- 3.1 The development consists of a three-storey building containing five residential apartments.

4 Policy Context

4.1 National Planning Policy Framework

- 4.1.1 The National Planning Policy Framework² (NPPF) does not specifically mention odour, but it does refer to air and pollution. Paragraph 174 states:

¹ EMAQ+ (2018) *Control of Odour and Noise from Commercial Kitchen Exhaust Systems*.

² Ministry of Housing, Communities and Local Government (MHCLG) (2023) National Planning Policy Framework

“Planning policies and decisions should contribute to and enhance the natural and local environment by:

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, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans.”

- 4.1.2 The role of planning is to ensure that new developments that are capable of creating odour do not cause a significant adverse effect in the local area or impact upon existing sensitive uses nearby. Additionally, the planning system also seeks to ensure sensitive uses introduced at the development would not be adversely affected by existing odorous sources and/or that undue restrictions are not placed on existing odorous businesses that may have operated up to that point without issue.

5 Methodology

5.1 EMAQ+ Risk Assessment Methodology - Odour Control

- 5.1.1 The EMAQ+ guidance includes a risk assessment methodology for odour associated with commercial kitchens, the outcome of which determines the level of odour control required. The risk assessment works on a scoring system based on the sum of the contributions from dispersion, the proximity of receptors, size of kitchen and cooking type. This score is then used to determine the impact risk and level of odour control required, as detailed in **Table 1**.

Table 1: Determining a Score for Odour Control

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

- 5.1.2 **Table 2** shows different measures that can be implemented to achieve the level of odour control required. Maintenance must be regularly carried out to ensure that the performance levels are always achieved.

Table 2: Odour Control

Level of Control		
Low to Medium	High	Very High
1. Fine filtration or electrostatic Precipitator (ESP) followed by carbon filtration (carbon filters rated with 0.1 second residence time).	1. Fine filtration or ESP followed carbon filtration (carbon filters rated with 0.2-0.4 second residence time).	1. Fine filtration or ESP followed carbon filtration (carbon filters rated with 0.4-0.8 second residence time).
2. Fine filtration followed by counteractant/neutralising system to achieve the same level of control as 1.	2. Fine filtration or ESP followed by ultraviolet (UV) ozone system to achieve the same level of control as 1.	2. Fine filtration or ESP followed by counteractant/neutralising system to achieve the same level of control as 1.
		3. Fine filtration or ESP followed by UV ozone system to achieve the same level of control as 1.

6 Commercial Kitchen Odour Risk Assessment

6.1 The risk assessment completed for the proposed kitchen extraction system for the development is shown in **Appendix B**. The resulting significance score has been considered in conjunction with **Table 1** to determine the level of odour control required. The current odour mitigation has not yet been confirmed with either restaurant.

Mr Ho's

6.2 Mr Ho's serves Cantonese and Vietnamese food. Cantonese food is considered a medium cooking type in terms of odour and grease loading. However, Vietnamese food is considered a high cooking type. Therefore, a cooking type for odour and grease loading has been classed as high for a worse case assessment.

6.3 The stack associated with Mr Ho's is shown in **Appendix C**. The dispersion is considered good.

6.4 The size of the kitchen is classed as medium.

6.5 The proposed development is classed as close to the commercial kitchen because the proposed residential dwellings are within 20 m of Mr Ho's.

6.6 The resulting significance score is **25**. The risk assessment concludes that a **high** level of odour control is required for this type of food preparation. Using the data provided in **Table 2**, a **high** level of odour control should include the implementation of one of the following methods:

- Fine filtration or ESP followed by carbon filtration (carbon filters rated with 0.2-0.4 seconds residence time);
- or
- Fine filtration or ESP followed by UV ozone system to achieve the same level of control as bullet point 1 above.

Spice Chilli Prescot

6.7 Spice Chilli Prescot serves Indian food. Indian food is considered a high cooking type. Therefore, a cooking type for odour and grease loading has been classed as high.

- 6.8 The current stack associated with Spice Chilli Prescott is shown in **Appendix D**. This stack has poor dispersion with the surrounding buildings being taller than the stack. Part of the stack is located within the site and the top of the stack is adjacent to the site.
- 6.9 The client has been in touch with the restaurant and they are willing to move the stack³ should the proposed development proceed. This report recommends that the stack discharge 1 m above the ridge of the closest buildings at 15 m/s. With the stack being moved and increased in height at a discharge rate of 15 m/s the dispersion is considered good.
- 6.10 The size of the kitchen is classed as medium.
- 6.11 The proposed development is classed as close to the commercial kitchen because the proposed residential dwellings are within 20 m of Spice Chilli Prescott.
- 6.12 The resulting significance score is **25**. The risk assessment concludes that a **high** level of odour control is required for this type of food preparation. Using the data provided in **Table 2**, a **high** level of odour control should include the implementation of one of the following methods:
- Fine filtration or ESP followed by carbon filtration (carbon filters rated with 0.2-0.4 seconds residence time);
or
 - Fine filtration or ESP followed by UV ozone system to achieve the same level of control as bullet point 1 above.

7 Summary of Impacts and Conclusion

- 7.1 The commercial kitchen odour risk assessment for both restaurants indicates that a high level of odour control is required. With a high level of odour control at both restaurants, and the stack relocation and stack replacement at Spice Chilli Prescott, there is no reason for this application to be refused on the grounds of odour.

³ Email from Aldrock Properties Ltd. to Miller Goodall Ltd on 6th November 2023.

APPENDICES

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Appendix A- Site Location



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Appendix B: Risk Assessment for Cooking Odour

Mr Ho's

Criteria		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
	High	7	Kebab, Vietnamese, Thai or Indian
	Medium	4	Cantonese, Japanese or Chinese.
	Low	1	Most pubs, Italian, French, Pizza or steakhouse.
Total Score		25	A high level of odour control is required.

Spice Chilli Prescot

Criteria		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
	High	7	Kebab, Vietnamese, Thai or Indian
	Medium	4	Cantonese, Japanese or Chinese.
	Low	1	Most pubs, Italian, French, Pizza or steakhouse.
Total Score		25	A high level of odour control is required.

Appendix C: Mr Ho's kitchen extraction stack

Image obtained from Google Streetview



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Appendix D: Spice Chilli Prescott kitchen extraction stack

Image obtained from Google Streetview



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Glossary of Terms

Effects The consequences of the changes in airborne concentration and/or dust deposition for a receptor. These might manifest as annoyance due to soiling, increased morbidity or mortality due to exposure to PM₁₀ or PM_{2.5} or plant dieback due to reduced photosynthesis. The term 'significant effect' has a specific meaning in EIA regulations. The opposite is an insignificant effect. In the context of construction impacts any effect will usually be adverse, however, professional judgement is required to determine whether this adverse effect is significant based in the evidence presented.

Impacts The changes in airborne concentrations and/or dust deposition. A scheme can have an 'impact' on airborne dust without having any 'effects', for instance if there are no receptors to experience the impact.

NPPF National Planning Policy Framework

