

**Odour Impact Assessment**  
**Faulkner Street, Manchester**

**Client: Tang & Associates Ltd**

**Reference: 6027r1**

**Date: 21<sup>st</sup> December 2022**



## **Report Issue**

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## **Executive Summary**

Redmore Environmental Ltd was commissioned by Tang & Associates Ltd to undertake an Odour Impact Assessment in support of a proposed bubble tea café at 41 to 43 Faulkner Street, Manchester

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

An assessment using the standard industry methodology was undertaken 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 options have 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 impacts 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 Tang & Associates Ltd to undertake an Odour Impact Assessment in support of a proposed bubble tea café at 41 to 43 Faulkner Street, Manchester.

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

### **1.2 Site Location and Context**

1.2.1 The site is located at Faulkner Street, Manchester, at approximate National Grid Reference (NGR): 384223, 398020. Reference should be made to Figure 1 for a map of the site and surrounding area.

1.2.2 The proposed development is located within a building complex on Faulkner Street. The site is bounded to the north-east and south-west by existing restaurants and nearby land uses include further restaurants and office buildings. The closest residential receptors are located approximately 35m south-west of the development.

1.2.3 The proposals comprise the conversion of the ground floor of 41 to 43 Faulkner Street from a betting shop to a bubble tea café. Reference should be made to Figure 2 for a layout plan of the café.

1.2.4 The proposed opening hours of the café are 12:00 - 21:00 Monday to Saturday inclusive. The café will initially serve bubble tea with the possibility of hot food in the future. It is likely that a gas or induction hob will be used as part of food preparation, should it be required. The number of covers to be served at the café per day is currently unknown. However, it is anticipated that a significant proportion of the total will be takeaways and will not be consumed at the premises.

- 1.2.5 In the event that food is served during operation of the café, this will be prepared within the kitchen to the rear of the premises. Emissions generated by food preparation activities will be removed via a wall mounted extractor within the kitchen and then discharged to atmosphere at the rear of the building on Reyner Street. Reference should be made to Figure 2 for the location of the proposed extract point.
- 1.2.6 The preparation of hot food within the kitchen may result in odour emissions. These have the potential to cause impacts at sensitive locations within the vicinity of the site. As such, an Odour Impact Assessment has been undertaken in order to evaluate potential effects and identify any necessary mitigation to reduce impacts to an acceptable level. This is detailed within the following report.

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## 2.0 ODOUR BACKGROUND

### 2.1 Odour Definition

2.1.1 The Institute of Air Quality Management (IAQM) guidance<sup>1</sup> defines odour as:

"[...] the human olfactory response (perception followed by psychological appraisal) to one, or more often a complex mixture of, chemical species in the air."

2.1.2 The stated definition is considered to be relevant in the context of this 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 **FIDOL** acronym, is a useful reminder of the factors that will determine the degree of odour pollution. These are described by the IAQM<sup>2</sup> as follows:

- **F**requency - how often an individual is exposed to odour;
- **I**ntensity - the individual's perception of the strength of the odour;
- **D**uration - the overall duration that individuals are exposed to an odour over time;
- **O** odour unpleasantness - odour unpleasantness describes the character of an odour as it relates to the 'hedonic tone' (which may be pleasant, neutral or unpleasant) at a given odour concentration/ intensity. This can be measured in the laboratory as the hedonic tone, and when measured by the standard method and expressed on a standard nine-point scale it is termed the hedonic score; and,
- **L**ocation - the type of land use and nature of human activities in the vicinity of an odour source. Tolerance and expectation of the receptor. The 'Location' factor can be considered to encompass the receptor characteristics, receptor sensitivity, and socio-economic factors.

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<sup>1</sup> Guidance on the Assessment of Odour for Planning v1.1, IAQM, 2018.

<sup>2</sup> Guidance on the Assessment of Odour for Planning v1.1, IAQM, 2018.

2.2.2 It is important to note that even infrequent emissions may cause loss of amenity if odours are perceived to be particularly intense or offensive.

2.2.3 The **FIDOL** factors can be further considered in relation to the following and 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 The main requirement with respect to odour control from premises not controlled under the Environmental Permitting (England and Wales) Regulations (2016) and subsequent amendments, such as cafés and takeaways, 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."

2.3.2 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 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). 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.

- 2.3.3 The legislative controls described above were considered as necessary throughout the undertaking of the assessment.

## **2.4 National Planning Policy**

- 2.4.1 The revised National Planning Policy Framework<sup>3</sup> (NPPF) was published in July 2021 and sets out the Government's planning policies for England and how these are expected to be applied.

- 2.4.2 The purpose of the planning system is to contribute to the achievement of sustainable development. In order to ensure this, the NPPF recognises three overarching objectives including the following of relevance to odour:

"c) An 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."

- 2.4.3 Chapter 12 of the NPPF details objectives in relation to achieving well-designed place. It states that:

"Planning policies and decisions should ensure that developments:

f) create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users; and where crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesions and resilience."

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

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<sup>3</sup> NPPF, Ministry of Housing, Communities and Local Government, 2021.

## **2.5 Local Planning Policy**

2.5.1 The Manchester Local Development Framework consists of a series of planning documents of which the Core Strategy<sup>4</sup> 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 A review of the Core Strategy identified the following policy of relevance to this report:

"Policy DM 1 - 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 The implications of the above policy have been taken into consideration throughout the assessment.

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<sup>4</sup> 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. An assessment has therefore been undertaken in accordance with guidance document 'Control of Odour and Noise from Commercial Kitchen Exhaust Systems' prepared by EMAQ+ for the Department for Environmental, Food and Rural Affairs (DEFRA)<sup>5</sup>. The methodology, as outlined below, was agreed with Laura Miller, Environmental Protection Officer at MCC, on 16<sup>th</sup> December 2022.

3.1.2 The relevant process is summarised in the following Sections.

#### 3.2 **Assessment Methodology**

3.2.1 The EMAQ+ and 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 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       |

<sup>5</sup> Control of Odour and Noise from Commercial Kitchen Exhaust Systems, EMAQ+, 2022.

| Criteria                                | Score     | Score | Details                                                                                                                                 |
|-----------------------------------------|-----------|-------|-----------------------------------------------------------------------------------------------------------------------------------------|
|                                         | 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 takeaway                                                                                            |
|                                         | Medium    | 3     | Between 30 and 100 covers or medium sized takeaway                                                                                      |
|                                         | 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 or steakhouse                                                                               |
|                                         | Medium    | 4     | Cantonese, Italian, French, Pizza (gas fired)                                                                                           |
|                                         | Low       | 1     | Most pubs (no fried food, mainly reheating and sandwiches etc) or Tea rooms                                                             |

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 EMAQ+ and DEFRA guidance<sup>6</sup>.

<sup>6</sup> Control of Odour and Noise from Commercial Kitchen Exhaust Systems, EMAQ+, 2022.

## 4.0 ASSESSMENT

### 4.1 Odour Risk

4.1.1 The odour risk associated with the proposals was rated in accordance with the EMAQ+ and DEFRA methodology<sup>7</sup>. The results are summarised in Table 3.

**Table 3 Odour Risk**

| Criteria                                | Score     | Score | Notes                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------|-----------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dispersion                              | Very poor | 20    | Air will be removed from the kitchen via an extractor fan positioned above the proposed hob location. Emissions will be exhausted to atmosphere at the rear of the development on Reyner Street. Specific dispersion arrangements were not known at the time of reporting. As such, the maximum score which corresponds to 'very poor' dispersion was applied to provide a worst-case assessment of potential impacts |
| Proximity of receptors                  | Medium    | 5     | The closest residential receptors are located approximately 35m from the kitchen discharge point. These include retirement housing on Faulkner Street                                                                                                                                                                                                                                                                 |
| Size of kitchen                         | Small     | 1     | The number of covers to be served per day was not known at the time of assessment. However, based on the development layout, the kitchen size was classified as small                                                                                                                                                                                                                                                 |
| Cooking type (odour and grease loading) | Low       | 1     | Cuisine type to be prepared on site will be bubble tea, with the potential for some hot food in the future. Cooking processes are only anticipated to include reheating with no fried food. As such, 'low' odour and grease loading potential was applied in accordance with the EMAQ+ and DEFRA criteria                                                                                                             |

4.1.2 As shown in Table 3, the odour risk from the proposed kitchen facility was scored as 27. The risk was therefore classified as **high**, in accordance with the EMAQ+ and DEFRA criteria.

<sup>7</sup> Control of Odour and Noise from Commercial Kitchen Exhaust Systems, EMAQ+, 2022.

## 4.2 Odour Control

4.2.1 Based on the assessment results, the development requires mitigation suitable for a **high** level of odour risk. There are a number of options for abatement identified within the EMAQ+ and DEFRA guidance<sup>8</sup> that provide this level of control. These include:

- Emission collection - Odour should be collected via extraction hoods situated above the hot food preparation area;
- Grease filtration system - Mesh type grease filters, such as baffle or cartridge filters, should be included for the purpose of grease filtration. These are suitable for heavy grease loads and would provide a robust control of emissions from the cooking processes at the proposed kitchen;
- Fine dust filter - Bag, fan or High-Efficiency Particulate Arrestance (HEPA) filter;
- Gaseous phase - An activated carbon filter rated with a 0.2 - 0.4 second residence time should be included for odour removal. Alternatively, an oxidation system such as ultraviolet light or ozone may be used; and,
- Dispersion - Emissions should be discharged vertically through a stack, high enough to ensure adequate dilution.

4.2.2 Of the above options, it is recommended that a baffle filter, then fine filter, then carbon filter system is installed on site. This specification is likely to offer the most economical abatement option and is suggested within the EMAQ+ and DEFRA guidance<sup>9</sup> for cooking activities with a **high** risk of impact. As such, it is considered a suitable approach to reduce potential effects to an acceptable level.

4.2.3 The above mitigation could be secured through a planning condition if deemed necessary by MCC.

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<sup>8</sup> Control of Odour and Noise from Commercial Kitchen Exhaust Systems, EMAQ+, 2022.

<sup>9</sup> Control of Odour and Noise from Commercial Kitchen Exhaust Systems, EMAQ+, 2022.

## 5.0 CONCLUSION

- 5.1.1 Redmore Environmental Ltd was commissioned by Tang & Associates Ltd to undertake an Odour Impact Assessment in support of a proposed bubble tea café at 41 to 43 Faulkner Street, Manchester.
- 5.1.2 The development has the potential to cause odour impacts as a result of emissions from the proposed cooking processes. As such, an Odour Impact Assessment was undertaken in order to assess potential effects as a result of the scheme and identify any necessary mitigation measures to prevent adverse impacts.
- 5.1.3 The results of the assessment indicated the odour risk was classified as **high**. It should be noted that 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 may be required to reduce potential effects to an acceptable level.
- 5.1.4 The recommended abatement options for the site have been specified in line with EMAQ+ and DEFRA guidance for kitchens with a **high** risk of impact. It therefore follows that with this mitigation in place, potential odour impacts at nearby sensitive receptors would be reduced to an acceptable level.
- 5.1.5 Based on the findings of the assessment, it is considered that odour should not be viewed as a constraint to planning consent for the development, subject to the installation of the specified mitigation.

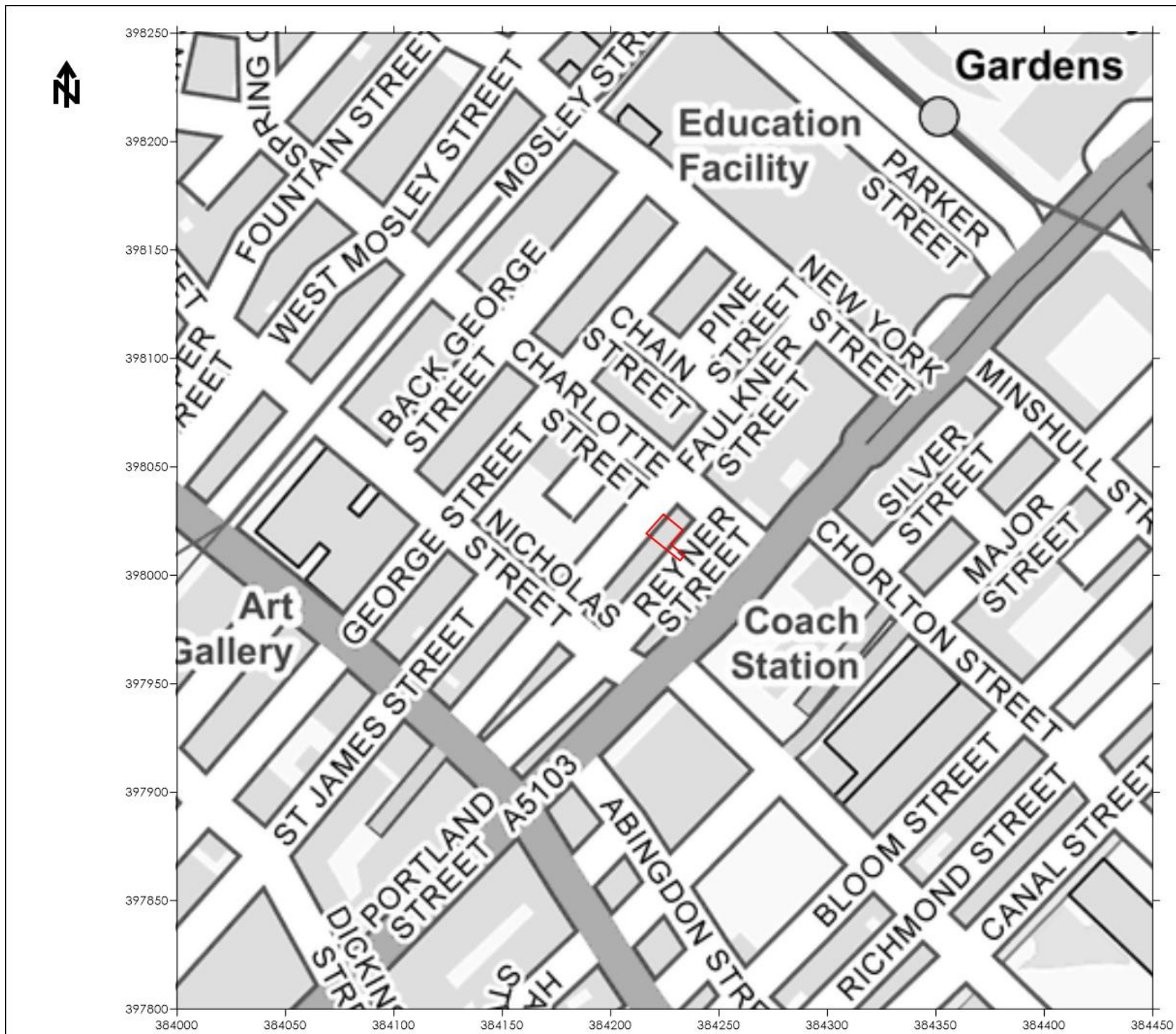
## **6.0    ABBREVIATIONS**

|       |                                                    |
|-------|----------------------------------------------------|
| DEFRA | Department for Environment, Food and Rural Affairs |
| HEPA  | High-Efficiency Particulate Arrestance             |
| IAQM  | Institute of Air Quality Management                |
| MCC   | Manchester City Council                            |
| NGR   | National Grid Reference                            |
| NPPF  | National Planning Policy Framework                 |

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**Figures**

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#### Legend



Site Boundary

#### Title

Figure 1 - Site Location Plan

#### Project

Odour Impact Assessment  
Faulkner Street, Manchester

#### Project Reference

6027

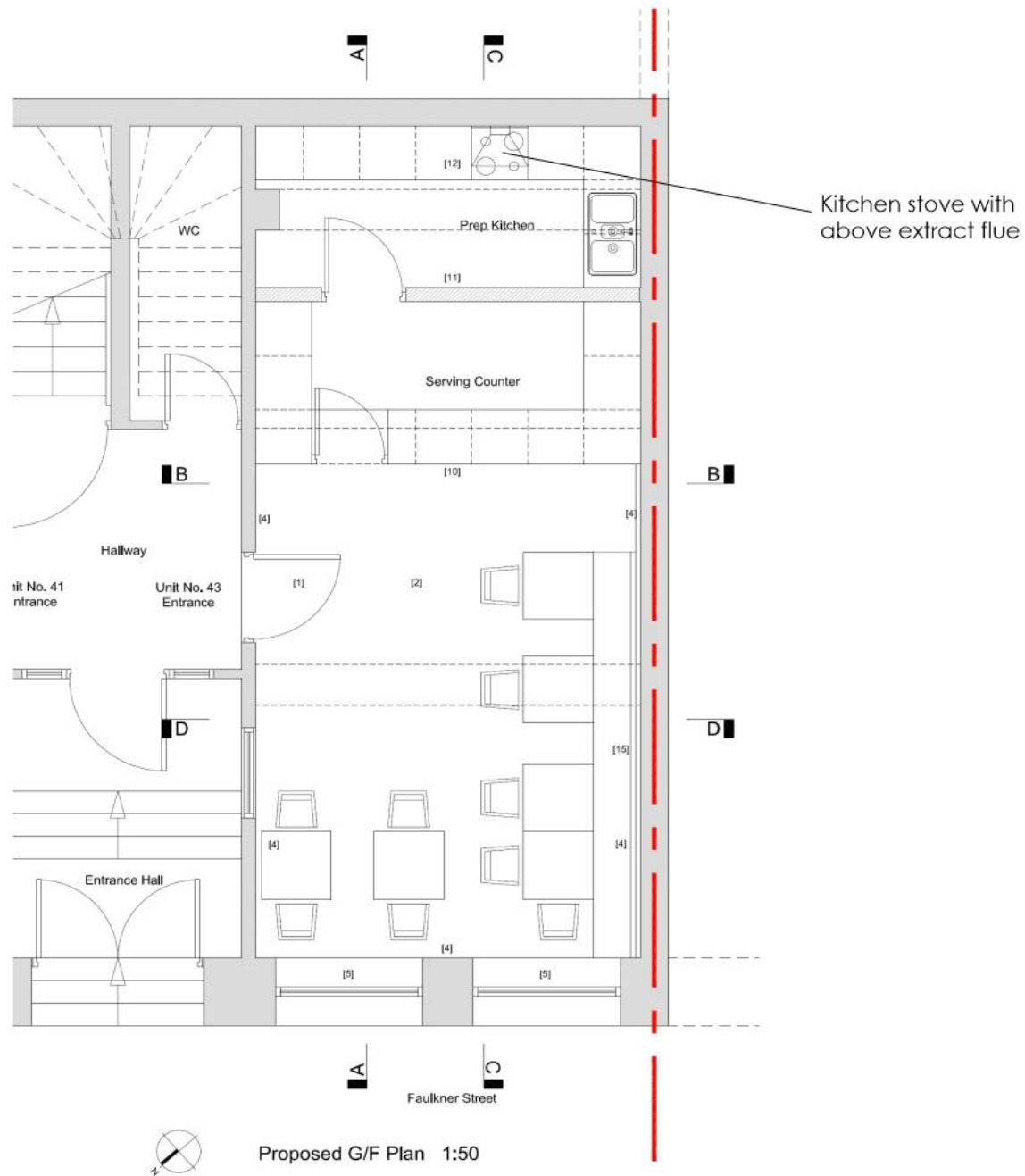
#### Client

Tang & Associates Ltd

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# Legend

**Title**  
Figure 2 - Site Layout Plan

**Project**  
Odour Impact Assessment  
Faulkner Street, Manchester

**Project Reference**  
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