Odour Impact Assessment

Drury Lane, London

Client: Chaudhery Jawad

Reference: 4426r1

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Report Issue

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Prepared by	Alicia Dale			
Position	Air Quality Consultant			
Reviewed by	Emily Bell			
Position	Air Quality Consultant			
Authorised by	Ger Parry			
Position	Associate Director			
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Comments	-			

Taylor Road, Manchester, M41 7JQ

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

Executive Summary

Redmore Environmental Ltd was commissioned by Chaudhery Jawad to undertake an Odour Impact Assessment in support of a proposed hot food takeaway at 183 Drury Lane, London.

A planning application has been submitted for the change of use of the basement and ground floors of a former tattoo studio at 183 Drury Lane, to a hot food takeaway. Correspondence received from Camden Council highlighted concerns regarding impacts associated with odour emissions from proposed cooking activities on the premises. As such, an Odour Impact Assessment was requested in order to evaluate potential effects as a result of the scheme and identify suitable mitigation techniques to control emissions to an acceptable level.

An assessment using the standard industry 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 options are required to reduce potential effects to an acceptable level.

The recommended abatement option has been specified in accordance 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 Chaudhery Jawad to undertake an Odour Impact Assessment in support of a planning application for a proposed hot food takeaway at 183 Drury Lane, London.

1.1.2 A planning application (reference: 2020/4550/P) has been submitted for the change of use of the premises from a tattoo studio to a hot food takeaway. Correspondence received from Nora-Andrea Constantinescu, Senior Planning Officer at Camden Council (CC)[1], highlighted concerns regarding impacts associated with odour emissions from cooking activities on the premises. As such, an Odour Impact Assessment was requested in order to evaluate 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 183 Drury Lane, London, at approximate National Grid Reference (NGR): 530311, 181313. Reference should be made to Figure 1 for a map of the site and surrounding area.

1.2.2 The development site is an existing end of terrace property which consists of two storeys. The ground floor is a former tattoo studio, which was vacated in January 2020. The first floor is a residential apartment. Reference should be made to Figure 2 for a site layout plan.

1.2.3 The proposals comprise the conversion of the existing building to provide a hot food takeaway which will serve a range of meals including kebabs, chips and wraps. The proposed opening hours are 12:00 to 22:00, seven days per week and cooking methods will include grilling, frying and doner kebab rotisserie. It is anticipated that the takeaway will serve less than 30 meals per day.

[1] Email Correspondence with CC, 2021.

1.2.4 Emissions from cooking processes will be collected using an extraction canopy and discharged vertically to atmosphere via a dedicated flue positioned on the western façade of the building. The flue will feature an accelerator cowl in order to achieve an efflux velocity between 12 and 15 m/s at the point of termination. Reference should be made to Figure 3 for an elevation drawing showing the proposed extract arrangements.

1.2.5 Cooking odours emitted from the extract flue have the potential to cause impacts at sensitive locations within the vicinity of the site. These have the therefore been assessed within the following report.

2.0 ODOUR BACKGROUND

2.1 Odour Definition

2.1.1 Department for Environment, Food and Rural Affairs (DEFRA) guidance[2] 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 guidance[3] 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 **FIDOL** acronym (also stated as **FIDOR** in Environment Agency (EA) guidance[4]) is a useful reminder of the

[2] Odour Guidance for Local Authorities, DEFRA, 2010.

[3] Odour Guidance for Local Authorities, DEFRA, 2010.

[4] H4: Odour Management, EA, 2011.

factors that will determine the degree of odour pollution. These are described by the Institute of Air Quality Management (IAQM)[5] as follows:

- **F**requency of detection - frequent odour incidents are more likely to result in complaints;
- **I**ntensity - the individual's perception of the strength of odour;
- **D**uration - The overall duration that individuals are exposed to an odour over time;
- **O**dour 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.

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 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

[5] Guidance on the Assessment of Odour for Planning v1.1, IAQM, 2018.

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 the proposed development, 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[6] (NPPF) was published in February 2019 and sets out the Government's planning policies for England and how these are expected to be applied.

2.4.2 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:

[6] NPPF, Ministry of Housing, Communities and Local Government, 2019.

[…]

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."

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

2.5 Local Planning Policy

2.5.1 CC adopted the Local Plan[7] on 3rd July 2017. This provides the basis for planning decisions and development within the borough over the period 2016 to 2031. A review of the Local Plan indicated the following policy of relevance to this report:

"Policy A1 Managing the impact of development

The Council will seek to protect the quality of life of occupiers and neighbours. We will grant permission for development unless this causes unacceptable harm to amenity.

We will:

a. seek to ensure that the amenity of communities, occupiers and neighbours is protected;
b. seek to ensure development contributes towards strong and successful communities by balancing the needs of development with the needs and characteristics of local areas and communities;
c. resist development that fails to adequately assess and address transport impacts affecting communities, occupiers, neighbours and the existing transport network; and
d. require mitigation measures where necessary

The factors we will consider include:

[7] Local Plan, LBoC, 2017.

[…]

k. odour, fumes and dust;

[…]"

2.5.2 The implications of the above policy were taken into consideration throughout the assessment.

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 the 'Control of Odour and Noise from Commercial Kitchen Exhaust Systems' guidance document prepared by EMAQ+ for DEFRA[8]. This document provides an update to the 2005 guidance[9] produced by DEFRA.

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

[8] Control of Odour and Noise from Commercial Kitchen Exhaust Systems, EMAQ+, 2018.

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

Criteria	Score	Score	Details
	Medium	5	Closest sensitive receptor between 20m 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[10].

[10] Control of Odour and Noise from Commercial Kitchen Exhaust Systems, EMAQ+, 2018.

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[11]. The results are summarised in Table 3.

Table 3 Odour Risk

Criteria	Score	Score	Notes
Dispersion	Moderate	10	Emissions from cooking processes collected using an extraction canopy and discharged vertically to the atmosphere via a dedicated flue positioned on the western facade of the building. The flue will feature an accelerator cowl in order to achieve an efflux velocity between 12 and 15 m/s at the point of termination
Proximity of receptors	Close	10	There are residential properties located less than 20m from the discharge point. These include a residential apartment on the first floor of the property
Size of kitchen	Small	1	It is anticipated that the takeaway will serve less than 30 meals per day. The size of the takeaway was therefore classified as small
Cooking type (odour and grease loading)	Very high	10	Hot food items to be cooked on the premises will include kebabs, chips and wrap using grilling, frying and rotisserie cooking methods A proportion of the cooking methods identified are considered to have a very high level of risk for odour and grease loading. The highest score has therefore been assumed to provide a robust assessment

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 EMAQ+ and DEFRA criteria.

[11] Control of Odour and Noise from Commercial Kitchen Exhaust Systems, EMAQ+, 2018.

4.2 Odour Control

4.2.1 Based on the assessment results, mitigation suitable for a **high** level of odour risk is required. This should include removal of both potential particulate and gaseous phase pollutants. The following odour control system has therefore been specified based on the measures outlined in the relevant guidance[12]:

- Extraction canopy - Stainless steel extraction canopy with baffle grease filters. The canopy will have a velocity of medium loading equivalent to 0.35 m/s;
- Grease filtration system - primary stage will include 4 No. stainless steel baffle filters and the second stage will involve an ESP unit which will omit the grease and smoke from the airflow;
- Carbon filtration - carbon filter rated with a 0.2 to 0.4 second residence time;
- Odour Neutralisation - for further odour abatement, an OC2 unit will be installed which will use ozone to neutralise the odours from the air stream; and
- Ducting and extract fan - galvanised steel spiral duct 450mm diameter with fittings, constructed in accordance with Heating, Ventilation and Air Conditioning (HVAC) specifications. The system will be terminated with an accelerator cowl to achieve an efflux velocity between 12 - 15 m/s.

4.2.2 The above system achieves the requirements for kitchens with a **high** risk of impact. As such, it is considered suitable for a development of this nature.

[12] Control of Odour and Noise from Commercial Kitchen Exhaust Systems, EMAQ+, 2018.

5.0 CONCLUSION

5.1.1 Redmore Environmental Ltd was commissioned by Chaudhery Jawad to undertake an Odour Impact Assessment in support of the planning application for a proposed hot food takeaway at 183 Drury Lane, London.

5.1.2 The development has the potential to cause odour impacts as a result of emissions from hot food preparation activities. 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 An assessment using the EMAQ+ and DEFRA methodology was undertaken in order to identify the odour risk associated with the proposals. This was based on a number of site-specific inputs.

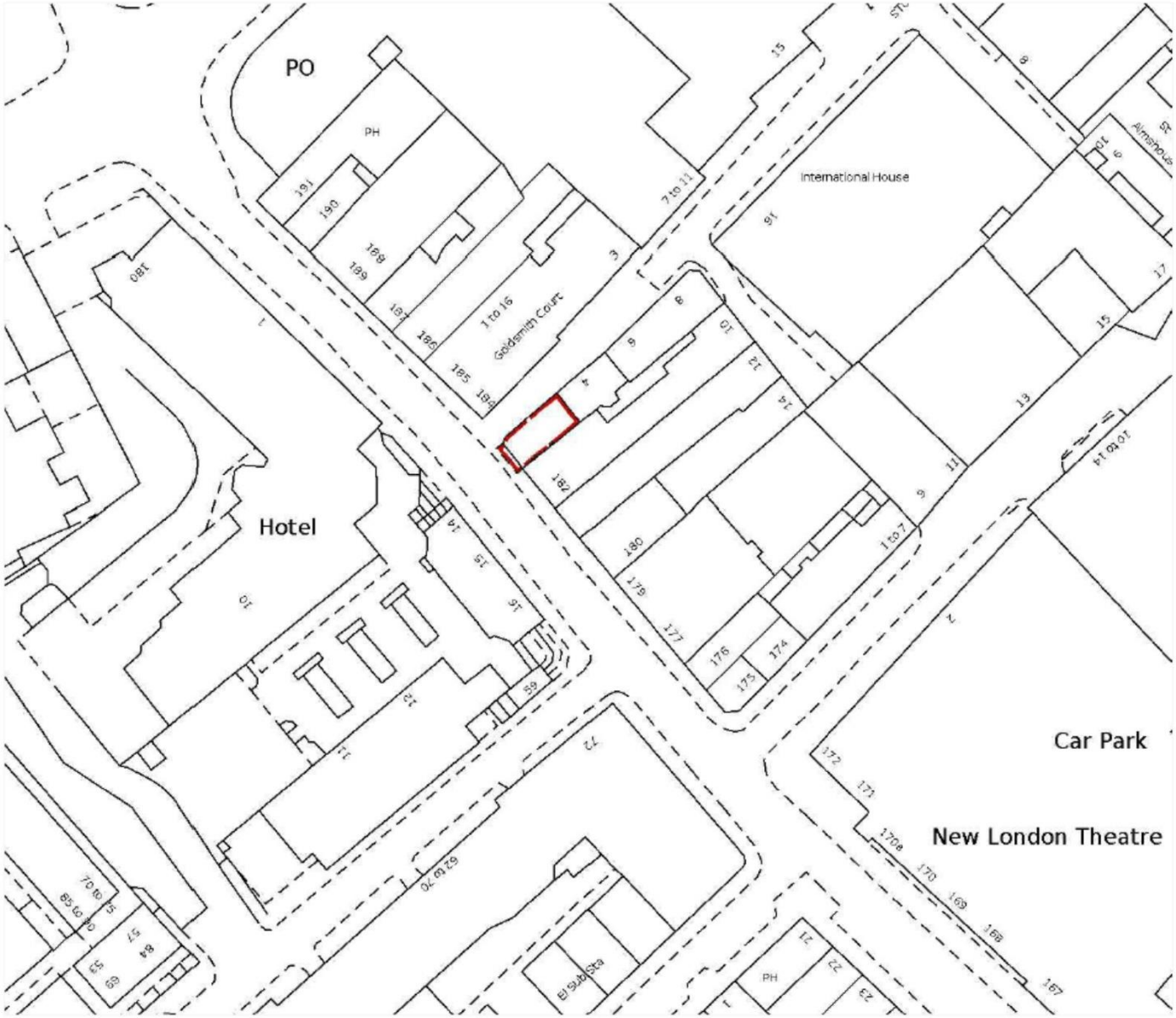
5.1.4 The results of the assessment indicated the odour risk was classified as **high**. This prediction does not infer that significant odour impacts would occur or local amenity levels would be affected. However, it does suggest that appropriate mitigation is required to reduce potential effects to an acceptable level.

5.1.5 The odour abatement strategy has 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 impact would be reduced to an acceptable level. As such, the proposed mitigation is considered to be suitable for a development of this nature.

6.0 ABBREVIATIONS

DEFRA	Department for Environment, Food and Rural Affairs
EA	Environment Agency
CC	Camden Council
HVAC	Heating, Ventilation and Air Conditioning
IAQM	Institute of Air Quality Management
NGR	National Grid Reference
NPPF	National Planning Policy Framework

Figures



Legend

Title
Figure 1 - Site Location Plan

Project
Odour Impact Assessment
Drury Lane, London

Project Reference
4426

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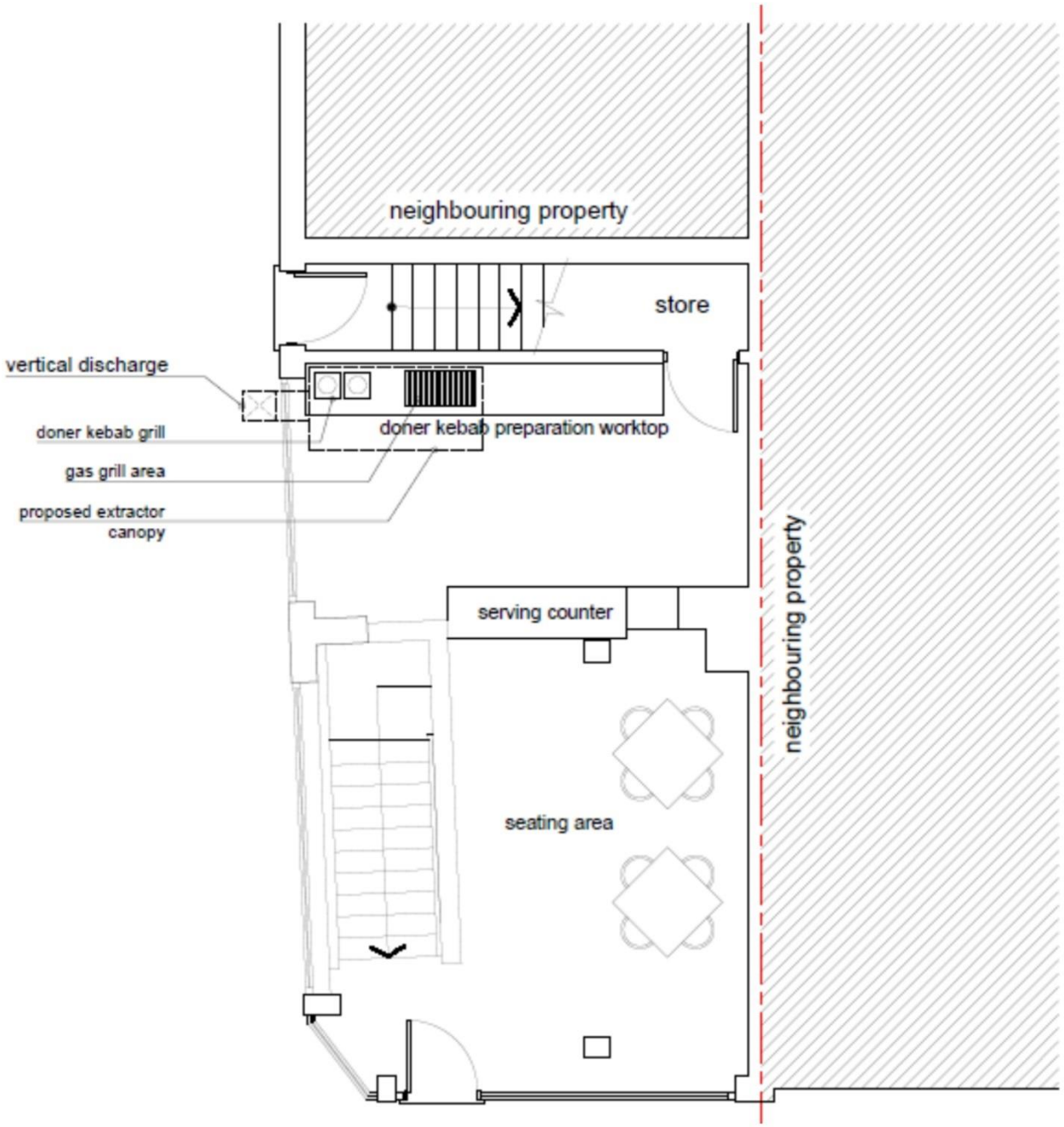

Legend

Title
Figure 2 - Proposed Ground Floor Plan

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Odour Impact Assessment
Drury Lane, London

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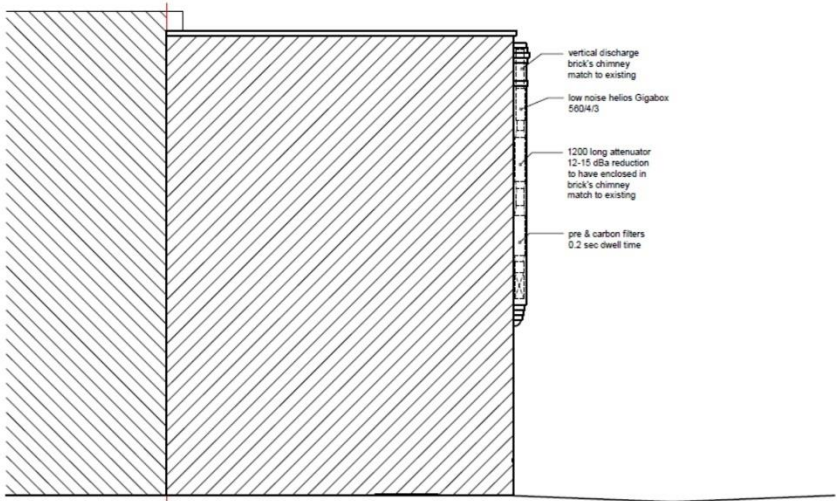
Proposed Side Elevation



Proposed Rear Elevation

Legend

Title
Figure 3 - Proposed Elevations and Chimney Location

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