Odour Assessment

Oxford Road, Manchester

Client: Soller Eight Ltd

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Report Issue

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Executive Summary

Redmore Environmental Ltd was commissioned by Soller Eight Ltd to undertake an Odour Assessment in support of a café/restaurant space at 137 Oxford Road, Manchester.

The proposals have the potential to cause odour impacts at sensitive locations in the vicinity of the site. As such, an Odour 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 **very 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 **very 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 Soller Eight Ltd to undertake an Odour Assessment in support of a cafe/restaurant space at 137 Oxford Road, Manchester.

1.1.2 The proposals have the potential to result in odour emissions and associated impacts at sensitive locations in the vicinity of the site. As such, an Odour Assessment was undertaken 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 proposed development is located at 137 Oxford Road, Manchester, at approximate National Grid Reference (NGR): 384370, 397100. Reference should be made to Figure 1 for a map of the site and surrounding area.

1.2.2 The development is bordered to the west by Oxford Road and to the south by Grosvenor Street. Land use in the immediate area surrounding the site comprises a mix of residential and commercial.

1.2.3 The proposals comprise the conversion of the ground floor to a café/restaurant space. The upper floors of the building will also be converted to Purpose Built Student Accommodation (PBSA). Reference should be made to Figure 2 for a layout plan of the ground floor.

1.2.4 The proposals have the potential to result in odour emissions as a result of food preparation activities on the premises and associated impacts at sensitive locations in the vicinity of the site. As such, an Odour Assessment has been undertaken in order to determine potential effects and identify any necessary mitigation to control impacts to an acceptable level. This is detailed in the following report.

1.2.5 It should be noted that details of the specific cuisine types that will be prepared at the premises were not available at the time of assessment and options are being considered for applicable ventilation systems. As such, appropriate worst-case assumptions have

been utilised throughout the assessment in order to ensure robust appraisal of potential effects and to inform identification of the necessary mitigation measures to prevent adverse impacts.

2.0 ODOUR BACKGROUND

2.1 Odour Definition

2.1.1 The Institute of Air Quality Management (IAQM) guidance[1] 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[2] 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**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.

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

[2] 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 commercial kitchens, 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[3] (NPPF) was published in December 2023 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.

[3] NPPF, Ministry of Housing, Communities and Local Government, 2023.

2.5 Local Planning Policy

2.5.1 The Core Strategy[4] was adopted by Manchester City Council (MCC) on 11th July 2012. A review of the Core Strategy indicated 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 […]."

2.5.2 The above policy was taken into consideration throughout the undertaking of the assessment.

2.5.3 The Places for Everyone Plan (PfEP)[5] was produced by the nine Greater Manchester Combined Authorities (GMCAs), Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford and Wigan, and became part of the statutory development plan for each of the councils on 21st March 2024. Review of the PfEP was undertaken. No policies of relevance were identified for use in this assessment.

4 Core Strategy Development Plan Document, MCC, 2012.

5 PfEP, GMCA, 2024.

3.0 METHODOLOGY

3.1 Introduction

3.1.1 The proposals have 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)[6]. This document provides an update to the 2005 guidance[7] 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

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

7 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 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[8].

[8] 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[9]. The results are summarised in Table 3.

Table 3 Odour Risk

Criteria	Score	Score	Notes
Dispersion	Poor	15	The ventilation strategy for the café/restaurant space has not yet been finalised. As such, the highest risk score prescribed for dispersion within the EMAQ+ and DEFRA guidance was applied in order to provide a precautionary assessment
Proximity of receptors	Close	10	The closest residential receptors will be those associated with the development and will be located on the first floor of the building
Size of kitchen	Small	1	The number of covers was not known at the time of assessment. However, based on the layout and area of the proposed café/restaurant space, the kitchen size was classified as small
Cooking type (odour and grease loading)	Very High	10	Details of the specific cuisine types that will be prepared at the premises were not available at the time of assessment. As such, a 'very high' score was applied to ensure a worst-case appraisal of potential odour and grease loading

4.1.2 As shown in Table 3, the odour risk from the proposed café/restaurant space was scored as 36. The risk was therefore classified as **very high**, in accordance with the EMAQ+ and DEFRA criteria.

4.2 Odour Control

4.2.1 Based on the assessment results, the development requires mitigation suitable for a **very high** level of odour risk. There are a number of options for abatement identified within the

[9] Control of Odour and Noise from Commercial Kitchen Exhaust Systems, EMAQ+, 2022.

EMAQ+ and DEFRA guidance[10] 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. Alternatively, Electrostatic Precipitators (ESPs) may be used;
- Fine dust filter - Bag, fan or High-Efficiency Particulate Arrestance (HEPA) filter should be included for removal of particulates from the air stream. Alternatively, ESPs may be used;
- Gaseous phase - An activated carbon filter rated with a 0.4 - 0.8 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. The location of the stack should be positioned no less than 1 metre above the eaves of the building and positioned at least 2 metres away from any openable window.

4.2.2 Of the above options it is recommended that an extraction hood, grease filter, fine filter, then carbon filter is installed on site. This specification is likely to offer the most economical abatement option and is suggested within the EMAQ+ and DEFRA guidance[11] for cooking activities with a **very 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.

[10] Control of Odour and Noise from Commercial Kitchen Exhaust Systems, EMAQ+, 2022.

[11] Control of Odour and Noise from Commercial Kitchen Exhaust Systems, EMAQ+, 2022.

5.0 CONCLUSION

5.1.1 Redmore Environmental Ltd was commissioned by Soller Eight Ltd to undertake an Odour Assessment in support of a café/restaurant space at 137 Oxford Road, Manchester.

5.1.2 The proposals have the potential to result in odour emissions and associated impacts at sensitive locations in the vicinity of the site. As such, an Odour 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 **very 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.

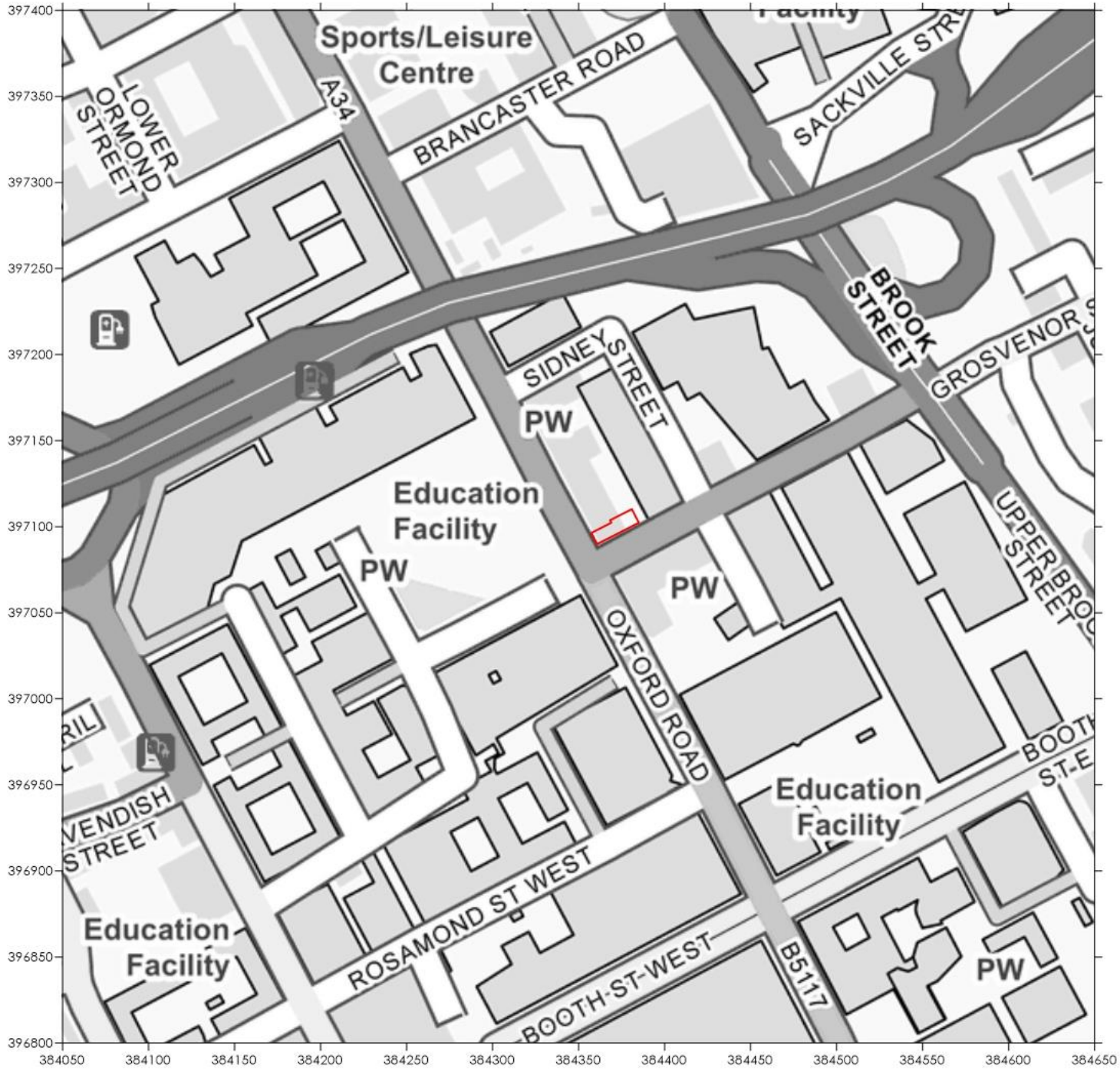
5.1.4 The recommended abatement options for the site have been specified in line with EMAQ+ and DEFRA guidance for kitchens with a **very high** risk of impact. It therefore follows that with this mitigation in place, potential odour impacts at nearby sensitive receptors would be reduced to an acceptable 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
ESP	Electrostatic Precipitation
GMCA	Greater Manchester Combined Authorities
HEPA	High-Efficiency Particulate Arrestance
IAQM	Institute of Air Quality Management
MCC	Manchester City Council
NGR	National Grid Reference
NPPF	National Planning Policy Framework
PBSA	Purpose Built Student Accommodation
PfEP	Places for Everyone Plan

Figures



Legend

Site Boundary

Title
Figure 1 - Site Location Plan

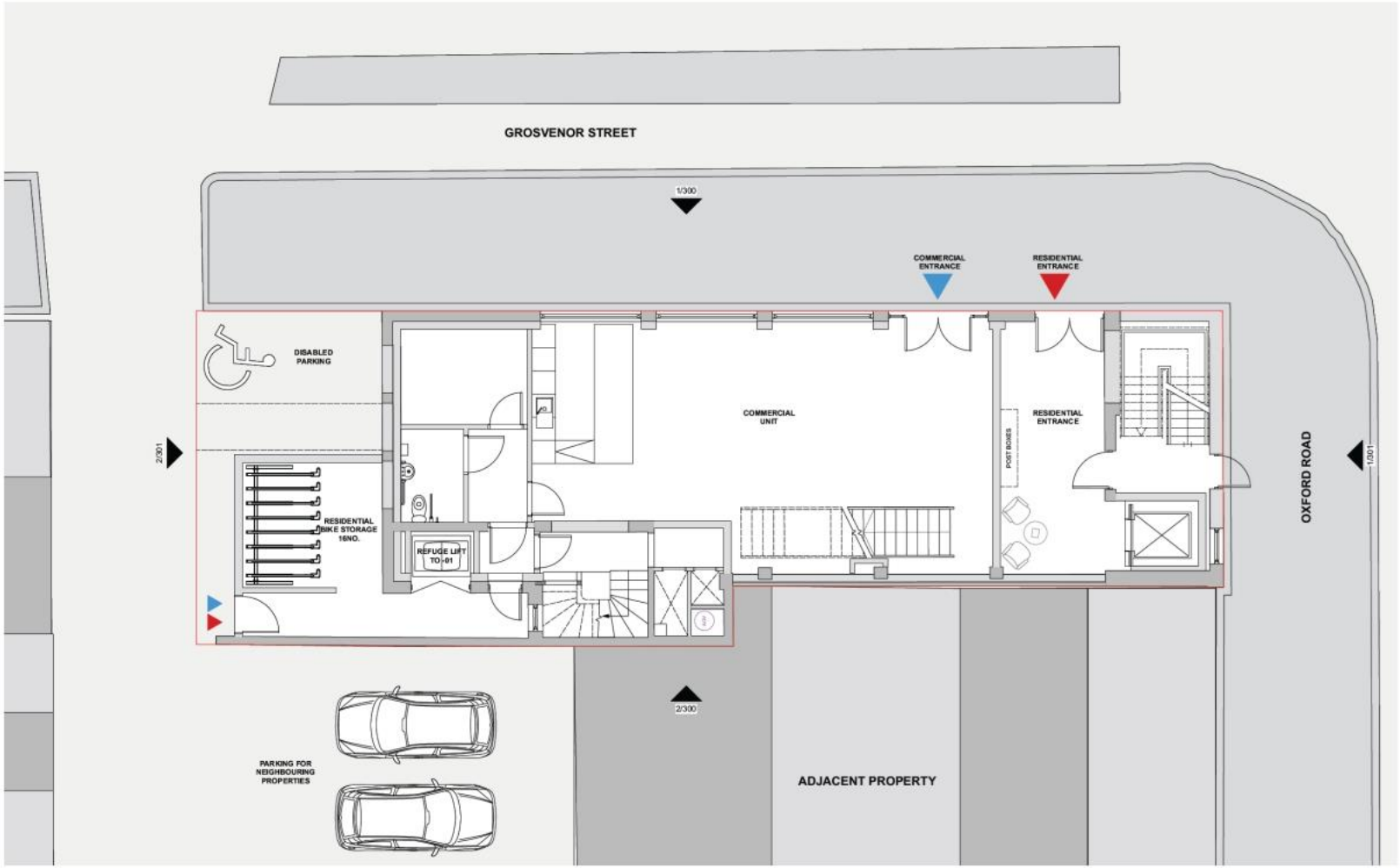
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Legend

Title
Figure 2 - Site Layout Plan of Ground Floor

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