Air Quality Assessment

Kilburn High Road, London

Client: Judith Taylor

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Executive Summary

Redmore Environmental Ltd was commissioned by Judith Taylor to undertake an Air Quality Assessment in support of a mixed-use development at 238 Kilburn High Road, London.

The proposals comprise the demolition of an existing two storey building at the site and construction of a four storey building with recessed rooftop to provide commercial space at ground floor level alongside five new residential apartments at first floor and above. Two existing studios and one 1-Bed unit at 240 Kilburn High Road will also be upgraded through extension towards 238 Kilburn High Road and conversion into 2-Bed family sized units with private amenity space.

The development may lead to the exposure of future occupants to elevated pollution levels, as well as adverse air quality impacts at sensitive locations. As such, an Air Quality Assessment was undertaken in order to determine baseline conditions at the site, consider its suitability for the proposed end-use and assess potential impacts associated with the scheme.

Potential construction phase air quality impacts from fugitive dust emissions were assessed as a result of demolition, earthworks, construction and trackout activities. It is considered that the use of good practice control measures would provide suitable mitigation for a development of this size and nature and reduce potential impacts to an acceptable level.

There is the potential for the exposure of future occupants to elevated pollution levels. Dispersion modelling was therefore undertaken in order to predict concentrations across the proposed development as a result of emissions from the highway network. Results were subsequently verified using local monitoring data.

The results of the assessment indicated that predicted pollutant levels were below the relevant criteria at all residential apartments. As such, the site is considered suitable for the proposed end use from an air quality perspective.

During the operational phase of the development there is the potential for air quality impacts as a result of traffic exhaust emissions associated with vehicles travelling to and from the site. These were assessed using standard screening criteria. As the proposals are predicted to be car-free, road traffic impacts were not predicted to be significant.

Potential emissions from the development were reviewed in the context of the air quality neutral requirements of the London Plan. This indicated an acceptable level of emissions from the scheme.

Based on the assessment results, air quality factors are not considered a constraint to planning consent for the proposals.

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1.0 INTRODUCTION

1.1 Background

1.1.1 Redmore Environmental Ltd was commissioned by Judith Taylor to undertake an Air Quality Assessment in support of a mixed-use development at 238 Kilburn High Road, London.

1.1.2 The development may lead to the exposure of future occupants to elevated pollution levels, as well as adverse air quality impacts at sensitive locations. As such, an Air Quality Assessment was undertaken in order to determine baseline conditions, consider site suitability for the proposed end-use and assess potential impacts as a result of the scheme.

1.2 Site Location and Context

1.2.1 The site is located at 238 Kilburn High Road, London, at approximate National Grid Reference (NGR): 525002,184209. Reference should be made to Figure 1 for a site location plan.

1.2.2 The proposals comprise the demolition of an existing two storey building at the site and construction of a four storey building with recessed rooftop to provide commercial space at ground floor level alongside five new residential apartments at first floor and above. Two existing studios and one 1-Bed unit at 240 Kilburn High Road will also be upgraded through extension towards 238 Kilburn High Road and conversion into 2-Bed family sized units with private amenity space.

1.2.3 An Air Quality Management Area (AQMA) has been declared by the London Borough of Camden (LBoC) due to exceedences of the Air Quality Objectives (AQOs) for annual mean nitrogen dioxide (NO_2) and 24-hour mean particulate matter with an aerodynamic diameter of less than 10µm (PM_{10}) concentrations. The site is located within the AQMA. As such, there is the potential for the exposure of future occupants to elevated pollution levels. An Air Quality Assessment was therefore undertaken in order to determine baseline conditions and define any requirement for mitigation. Potential impacts associated with the scheme have also been assessed using standard screening methodologies. This is detailed in the following report.

2.0 LEGISLATION AND POLICY

2.1 Legislation

2.1.1 The Air Quality Standards Regulations (2010) came into force on 11th June 2010 and include Air Quality Limit Values (AQLVs) for the following pollutants:

- NO_2;
- Sulphur dioxide;
- Lead;
- PM_{10};
- Particulate matter with an aerodynamic diameter of less than 2.5µm ($PM_{2.5}$);
- Benzene; and,
- Carbon monoxide.

2.1.2 Air Quality Target Values (AQTV) have also been provided for several additional pollutants. It should be noted that the AQLV for $PM_{2.5}$ stated in the Air Quality Standards Regulations (2010) was amended in the Environment (Miscellaneous Amendments) (EU Exit) Regulations (2020).

2.1.3 The Air Quality Strategy (AQS) was produced by the Department for Environment, Food and Rural Affairs (DEFRA) and published on 28th April 2023[1]. The document contains standards, objectives and measures for improving ambient air quality, including a number of Air Quality Objectives (ASQOs). These are maximum ambient pollutant concentrations that are not to be exceeded either without exception or with a permitted number of exceedences over a specified timescale. These are generally in line with the AQLVs, although the requirements for the determination of compliance vary.

2.1.4 The Environmental Improvement Plan 2023[2] was published in January 2023, providing long term and Interim Targets in order to reduce population exposure to $PM_{2.5}$. The concentration target for 2040 was subsequently adopted in the Environmental Targets (Fine Particulate Matter) (England) Regulations (2023).

[1] AQS: Framework for Local Authority Delivery, DEFRA, 2023.

[2] Environmental Improvement Plan 2023, DEFRA, 2023.

2.1.5 Table 1 presents the AQOs, AQLVs and Interim Target for pollutants considered within this assessment.

Table 1 Air Quality Objectives

Pollutant	Air Quality Objective	
	Concentration (µg/m³)	Averaging Period
NO_2	40	Annual mean
	200	1-hour mean, not to be exceeded on more than 18 occasions per annum
PM_{10}	40	Annual mean
	50	24-hour mean, not to be exceeded on more than 35 occasions per annum
$PM_{2.5}$	20(a)	Annual mean
	12(b)	Annual mean

Note: (a) Current AQLV.
(b) Interim Target to be achieved by end of January 2028.

2.1.6 Table 2 summarises the advice provided in the Greater London Authority (GLA) guidance[3] on where the AQOs for pollutants considered within this report apply.

Table 2 Examples of Where the Air Quality Objectives Apply

Averaging Period	Objective Should Apply At	Objective Should Not Apply At
Annual mean	All locations where members of the public might be regularly exposed Building façades of residential properties, schools (including all of playgrounds), hospitals (and their grounds), care homes (and their grounds) etc.	Building façades of offices or other places of work where members of the public do not have regular access Hotels, unless people live there as their permanent residence Gardens of residential properties Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term

3 London Local Air Quality Management (TG19), Technical Guidance 2019 (LLAQM.TG (2019)), GLA, 2019.

Averaging Period	Objective Should Apply At	Objective Should Not Apply At
24-hour mean	All locations where the annual mean objective would apply, together with hotels Gardens of residential properties	Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term
1-hour mean	All locations where the annual mean and 24 and 8-hour mean objectives apply. Kerbside sites (for example, pavements of busy shopping streets) Those parts of car parks, bus stations and railway stations etc which are not fully enclosed, where members of the public might reasonably be expected to spend one hour or more Any outdoor locations where members of the public might reasonably be expected to spend one hour or longer	Kerbside sites where the public would not be expected to have regular access

2.2 Local Air Quality Management

2.2.1 Local Authorities (LAs) are required to periodically review and assess air quality within their area of jurisdiction under the system of Local Air Quality Management (LAQM). This review and assessment of air quality involves comparing present and likely future pollutant concentrations against the AQOs. If it is predicted that levels at locations of relevant exposure, as summarised in Table 2, are likely to be exceeded, the LA is required to declare an AQMA. For each AQMA the LA is required to produce an Air Quality Action Plan (AQAP), the objective of which is to reduce pollutant concentrations in pursuit of the AQOs.

2.3 Dust

2.3.1 The main requirements with respect to dust control from industrial or trade premises not regulated under the Environmental Permitting (England and Wales) Regulations (2016) and subsequent amendments, such as construction sites, 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 LA 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.

2.4 National Planning Policy

2.4.1 The revised National Planning Policy Framework[4] (NPPF) was published in September 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 air quality:

> "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 15 of the NPPF details objectives in relation to conserving and enhancing the natural environment. It states that:

> '"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

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

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 […]"

2.4.4 The NPPF specifically recognises air quality as part of delivering sustainable development and states that:

"Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan."

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

2.5 National Planning Practice Guidance

2.5.1 The National Planning Practice Guidance[5] (NPPG) web-based resource was launched by the Department for Communities and Local Government on 6th March 2014 and updated on 1st November 2019 to support the NPPF and make it more accessible. The air quality pages are summarised under the following headings:

1. What air quality considerations does planning need to address?
2. What is the role of plan-making with regard to air quality?
3. Are air quality concerns relevant to neighbourhood planning?
4. What information is available about air quality?
5. When could air quality considerations be relevant to the development management process?

[5] https://www.gov.uk/guidance/air-quality--3.

6. What specific issues may need to be considered when assessing air quality impacts?
7. How detailed does an air quality assessment need to be?
8. How can an impact on air quality be mitigated?

2.5.2 These were reviewed and the relevant guidance considered as necessary throughout the undertaking of this assessment.

2.6 Local Planning Policy

The London Plan

2.6.1 The London Plan 2021[6] is the Spatial Development Strategy for Greater London. It sets out a framework for how London will develop over the next 20-25 years and the Mayor's vision for Good Growth. Review of this document indicated the following of relevance to this report:

"Policy SI 1 - Improving Air Quality

A. Development plans, through relevant strategic, site specific and area-based policies should seek opportunities to identify and deliver further improvements to air quality and should not reduce air quality benefits that result from the Mayor's or boroughs' activities to improve air quality.

B. To tackle poor air quality, protect health and meet legal obligations the following criteria should be addressed.

1. Development proposals should not:

a) lead to further deterioration of existing poor air quality

b) create any new areas that exceed air quality limits, or delay the date which compliance will be achieved in areas that are currently in exceedence of legal limits

c) create unacceptable risk of high levels of exposure to poor air quality.

2. In order to meet the requirements of Part 1, as a minimum:

a) development proposals must be at least Air Quality Neutral

[6] The London Plan - March 2021, GLA, 2021.

b) development proposals should use design solutions to prevent or minimise increased exposure to existing air pollution and make provision to address local problems of air quality in preference to post-design or retro-fitted mitigation measures.
c) major development proposals must be submitted with an Air Quality Assessment. Air quality assessments should show how the development will meet the requirements of B1.
d) development proposals in Air Quality Focus Areas or that are likely to be used by large numbers of people particularly vulnerable to poor air quality, such as children or older people, should demonstrate that design measures have been used to minimise exposure.

C. Masterplans and development briefs for large-scale development proposals subject to an Environmental Impact Assessment should consider how local air quality can be improved across the area of the proposal as part of an air quality positive approach. To achieve this a statement should be submitted demonstrating:
    a) How proposals have considered ways to maximise benefits to local air quality, and
    b) What measures or design features will be put in place to reduce exposure to pollution, and how they will achieve this.

D. In order to reduce the impact on air quality during the construction and demolition phase development proposals must demonstrate how they plan to comply with the Non-Road Mobile Machinery Low Emission Zone and reduce emissions from the demolition and construction of buildings following best practice guidance.

E. Development proposals should ensure that where emissions need to be reduced to meet the requirements of Air Quality Neutral or to make the impact of development on local air quality acceptable, this is done on-site. Where it can be demonstrated that emissions cannot be further reduced by on-site measures, off-site measures to improve local air quality may be acceptable, provided that equivalent air quality benefits can be demonstrated within the area affected by the development."

2.6.2 The requirements of these policies have been considered throughout this Air Quality Assessment.

Local Plan

2.6.3 LBoC adopted the Local Plan[7] on 3rd July 2017. This provides the basis for planning decisions and development in the borough, covering the period from 2016 to 2031. A review of the Local Plan indicated the following policy of relevance to this report:

> "Policy CC4 Air Quality
>
> The Council will ensure that the impact of development on air quality is mitigated and ensure that exposure to poor air quality is reduced in the borough.
>
> The Council will take into account the impact of air quality when assessing development proposals, through the consideration of both the exposure of occupants to air pollution and the effect of the development on air quality. Consideration must be taken to the actions identified in the Council's Air Quality Action Plan.
>
> Air Quality Assessments (AQAs) are required where development is likely to expose residents to high levels of air pollution. Where the AQA shows that a development would cause harm to air quality, the Council will not grant planning permission unless measures are adopted to mitigate the impact. Similarly, developments that introduce sensitive receptors (i.e. housing, schools) in locations of poor air quality will not be acceptable unless designed to mitigate the impact.
>
> Development that involves significant demolition, construction or earthworks will also be required to assess the risk of dust and emissions impacts in an AQA and include appropriate mitigation measures to be secured in a Construction Management Plan."

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

7 Camden Local Plan, LBoC, 2017.

3.0 METHODOLOGY

3.1 Introduction

3.1.1 The proposed development has the potential to cause air quality impacts, as well as expose future occupants to elevated pollution levels. These issues were assessed in accordance with the following methodology.

3.2 Construction Phase Assessment

3.2.1 There is the potential for fugitive dust emissions to occur as a result of construction phase activities. These have been assessed in accordance with the methodology outlined within the Mayor of London's 'The Control of Dust and Emissions during Construction and Demolition Supplementary Planning Guidance'[8].

3.2.2 Activities on the proposed construction site have been divided into four types to reflect their different potential impacts. These are:

- Demolition;
- Earthworks;
- Construction; and,
- Trackout.

3.2.3 The potential for dust emissions was assessed for each activity that is likely to take place and considered three separate dust effects:

- Annoyance due to dust soiling;
- Harm to ecological receptors; and,
- The risk of health effects due to a significant increase in exposure to PM_{10}.

3.2.4 The assessment steps are detailed below.

[8] The Control of Dust and Emissions During Construction and Demolition Supplementary Planning Guidance, The Mayor of London, 2014.

Step 1

3.2.5 Step 1 screens the requirement for a more detailed assessment. Should human receptors be identified within 350m from the boundary or 50m from the construction vehicle route up to 500m from the site entrance, then the assessment proceeds to Step 2. Additionally, should ecological receptors be identified within 50m of the site or the construction vehicle route up to 500m from the site entrance, then the assessment also proceeds to Step 2.

3.2.6 Should sensitive receptors not be present within the relevant distances then **negligible** impacts would be expected and further assessment is not necessary.

Step 2

3.2.7 Step 2 assesses the risk of potential dust impacts. A site is allocated a risk category based on two factors:

- The scale and nature of the works, which determines the magnitude of dust arising as: small, medium or large (Step 2A); and,
- The sensitivity of the area to dust impacts, which can be defined as low, medium or high sensitivity (Step 2B).

3.2.8 The two factors are combined in Step 2C to determine the risk of dust impacts without mitigation applied.

3.2.9 Step 2A defines the potential magnitude of dust emission through the construction phase. The relevant criteria are summarised in Table 3.

Table 3 Construction Dust - Magnitude of Emission

Magnitude	Activity	Criteria
Large	Demolition	• Total building volume greater than 50,000m^3 • Potentially dusty construction material (e.g. concrete) • On-site crushing and screening • Demolition activities greater than 20m above ground level

Magnitude	Activity	Criteria
	Earthworks	• Total site area greater than 10,000m^2 • Potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size) • More than 10 heavy earth moving vehicles active at any one time • Formation of bunds greater than 8m in height • More than 100,000 tonnes of material moved
	Construction	• Total building volume greater than 100,000m^3 • On site concrete batching • Sandblasting
	Trackout	• More than 50 Heavy Duty Vehicle (HDV) trips per day • Potentially dusty surface material (e.g. high clay content) • Unpaved road length greater than 100m
Medium	Demolition	• Total building volume 20,000m^3 to 50,000m^3 • Potentially dusty construction material • Demolition activities 10m to 20m above ground level
	Earthworks	• Total site area 2,500m^2 to 10,000m^2 • Moderately dusty soil type (e.g. silt) • 5 to 10 heavy earth moving vehicles active at any one time • Formation of bunds 4m to 8m in height • Total material moved 20,000 tonnes to 100,000 tonnes
	Construction	• Total building volume 25,000m^3 to 100,000m^3 • Potentially dusty construction material (e.g. concrete) • On site concrete batching
	Trackout	• 10 to 50 HDV trips per day • Moderately dusty surface material (e.g. high clay content) • Unpaved road length 50m to 100m
Small	Demolition	• Total building volume under 20,000m^3 • Construction material with low potential for dust release (e.g. metal cladding or timber) • Demolition activities less than 10m above ground level

Magnitude	Activity	Criteria
	Earthworks	• Total site area less than 2,500m^2 • Soil type with large grain size (e.g. sand) • Less than 5 heavy earth moving vehicles active at any one time • Formation of bunds less than 4m in height • Total material moved less than 20,000 tonnes • Earthworks during wetter months
	Construction	• Total building volume less than 25,000m^3 • Construction material with low potential for dust release (e.g. metal cladding or timber)
	Trackout	• Less than 10 HDV trips per day • Surface material with low potential for dust release • Unpaved road length less than 50m

3.2.10 Step 2B defines the sensitivity of the area around the development to potential dust impacts. The influencing factors are shown in Table 4.

Table 4 Construction Dust - Examples of Factors Defining Sensitivity of an Area

Receptor Sensitivity	Examples	
	Human Receptors	Ecological Receptors
High	• Users expect high levels of amenity • High aesthetic or value property • People expected to be present continuously for extended periods of time • Locations where members of the public are exposed over a time period relevant to the AQO for PM_{10}. e.g. residential properties, hospitals, schools and residential care homes	• Internationally or nationally designated site e.g. Special Area of Conservation
Medium	• Users would expect to enjoy a reasonable level of amenity • Aesthetics or value of their property could be diminished by soiling • People or property wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land e.g. parks and places of work	• Nationally designated site e.g. Sites of Special Scientific Interest

Receptor Sensitivity	Examples	
	Human Receptors	Ecological Receptors
Low	• Enjoyment of amenity would not reasonably be expected • Property would not be expected to be diminished in appearance • Transient exposure, where people would only be expected to be present for limited periods. e.g. public footpaths, playing fields, shopping streets, farmland, short term car parks and roads	• Locally designated site e.g. Local Nature Reserve

3.2.11 The guidance also provides the following factors to consider when determining the sensitivity of an area to potential dust impacts:

- Any history of dust generating activities in the area;
- The likelihood of concurrent dust generating activity on nearby sites;
- Any pre-existing screening between the source and receptors;
- Any conclusions drawn from analysing local meteorological data which accurately represent the area and if relevant the season during which works will take place;
- Any conclusions drawn from local topography;
- Duration of the potential impact, as a receptor may become more sensitive over time; and,
- Any known specific receptor sensitivities which go beyond the classifications given in the document.

3.2.12 These factors were considered in the undertaking of this assessment.

3.2.13 The criteria for determining the sensitivity of the area to dust soiling effects on people and property is summarised in Table 5.

Table 5 Construction Dust - Sensitivity of the Area to Dust Soiling Effects on People and Property

Receptor Sensitivity	Number of Receptors	Distance from the Source (m)			
		Less than 20	Less than 50	Less than 100	Less than 350
High	More than 100	High	High	Medium	Low
	10 - 100	High	Medium	Low	Low

Receptor Sensitivity	Number of Receptors	Distance from the Source (m)			
		Less than 20	Less than 50	Less than 100	Less than 350
	1 - 10	Medium	Low	Low	Low
Medium	More than 1	Medium	Low	Low	Low
Low	More than 1	Low	Low	Low	Low

3.2.14 Table 6 outlines the criteria for determining the sensitivity of the area to human health impacts.

Table 6 Construction Dust - Sensitivity of the Area to Human Health Impacts

Receptor Sensitivity	Background Annual Mean PM_{10} Concentration	Number of Receptors	Distance from the Source (m)				
			Less than 20	Less than 50	Less than 100	Less than 200	Less than 350
High	Greater than 32µg/m^3	More than 100	High	High	High	Medium	Low
		10 - 100	High	High	Medium	Low	Low
		1 - 10	High	Medium	Low	Low	Low
	28 - 32µg/m^3	More than 100	High	High	Medium	Low	Low
		10 - 100	High	Medium	Low	Low	Low
		1 - 10	High	Medium	Low	Low	Low
	24 - 28µg/m^3	More than 100	High	Medium	Low	Low	Low
		10 - 100	High	Medium	Low	Low	Low
		1 - 10	Medium	Low	Low	Low	Low
	Less than 24µg/m^3	More than 100	Medium	Low	Low	Low	Low
		10 - 100	Low	Low	Low	Low	Low
		1 - 10	Low	Low	Low	Low	Low
Medium	Greater than 32µg/m^3	More than 10	High	Medium	Low	Low	Low
		1 - 10	Medium	Low	Low	Low	Low

Receptor Sensitivity	Background Annual Mean PM_{10} Concentration	Number of Receptors	Distance from the Source (m)				
			Less than 20	Less than 50	Less than 100	Less than 200	Less than 350
	28 - 32µg/m^3	More than 10	Medium	Low	Low	Low	Low
		1 - 10	Low	Low	Low	Low	Low
	24 - 28µg/m^3	More than 10	Low	Low	Low	Low	Low
		1 -10	Low	Low	Low	Low	Low
	Less than 24µg/m^3	More than 10	Low	Low	Low	Low	Low
		1 - 10	Low	Low	Low	Low	Low
Low	-	1 or more	Low	Low	Low	Low	Low

3.2.15 Table 7 outlines the criteria for determining the sensitivity of the area to ecological impacts.

Table 7 Construction Dust - Sensitivity of the Area to Ecological Impacts

Receptor Sensitivity	Distance from the Source (m)	
	Less than 20	Less than 50
High	High	Medium
Medium	Medium	Low
Low	Low	Low

3.2.16 Step 2C combines the dust emission magnitude with the sensitivity of the area to determine the risk of unmitigated impacts.

3.2.17 Table 8 outlines the risk category from demolition activities.

Table 8 Construction Dust - Dust Risk Category from Demolition Activities

Receptor Sensitivity	Dust Emission Magnitude		
	Large	Medium	Small
High	High	Medium	Medium
Medium	High	Medium	Low
Low	Low	Low	Negligible

3.2.18 Table 9 outlines the risk category from earthworks and construction activities.

Table 9 Construction Dust - Dust Risk Category from Earthworks and Construction Activities

Receptor Sensitivity	Dust Emission Magnitude		
	Large	Medium	Small
High	High	Medium	Low
Medium	Medium	Medium	Low
Low	Low	Low	Negligible

3.2.19 Table 10 outlines the risk category from trackout activities.

Table 10 Construction Dust - Dust Risk Category from Trackout Activities

Receptor Sensitivity	Dust Emission Magnitude		
	Large	Medium	Small
High	High	Medium	Low
Medium	Medium	Low	Negligible
Low	Low	Low	Negligible

Step 3

3.2.20 Step 3 requires the identification of site specific mitigation measures within the Mayor of London's guidance[9] to reduce potential dust impacts based upon the relevant risk categories identified in Step 2. For sites with **negligible** risk, mitigation measures beyond those required by legislation are not required. However, additional controls may be applied as part of good practice.

Step 4

3.2.21 Once the risk of dust impacts has been determined and the appropriate mitigation measures identified, the final step is to determine the significance of any residual impacts. For almost all construction activity, the aim should be to control effects through the use of effective mitigation. Experience shows that this is normally possible. Hence the residual effect will normally be **not significant**.

3.2.22 The determination of significance relies on professional judgement and reasoning should be provided as far as practicable. The Mayor of London's guidance suggests the provision of details of the assessor's qualifications and experience. These are provided in Appendix 2.

3.3 Operational Phase Assessment

Potential Future Exposure

3.3.1 The proposal has the potential to expose future occupants to elevated pollution levels. In order to assess NO_2, PM_{10} and $PM_{2.5}$ concentrations across the development site, detailed dispersion modelling was undertaken. Reference should be made to Appendix 1 for a full description of the assessment input data.

3.3.2 The results of the assessment were compared against the Air Pollution Exposure Criteria (APEC) contained within the London Councils Air Quality and Planning Guidance[10]. These

9 The Control of Dust and Emissions During Construction and Demolition Supplementary Planning Guidance, The Mayor of London, 2014.

10 London Councils Air Quality and Planning Guidance, London Councils, 2007.

are outlined in Table 11 and allow determination of the significance of predicted pollution levels and associated exposure.

Table 11 Future Exposure Assessment Criteria

Category	Applicable Range		Recommendation
	Annual Mean NO_2 or PM_{10}	24-hour PM_{10}	
APEC - A	Below 5% of the annual mean AQO	> 1-day less than AQO	No air quality grounds for refusal; however, mitigation of any emissions should be considered
APEC - B	Between 5% below or above the annual mean AQO	Between 1-day above or below AQO	May not be sufficient air quality grounds for refusal, however appropriate mitigation must be considered e.g., Maximise distance from pollutant source, proven ventilation systems, parking considerations, winter gardens, internal layout considered and internal pollutant emissions minimised
APEC - C	Above 5% of the annual mean AQO	> 1-day more than AQO	Refusal on air quality grounds should be anticipated, unless the LA has a specific policy enabling such land use and ensure best endeavours to reduce exposure are incorporated. Worker exposure in commercial/industrial land uses should be considered further. Mitigation measures must be presented with air quality assessment, detailing anticipated outcomes of mitigation measures

3.3.3 It should be noted that a significant area of London would fall under APEC - C due to high NO_2 concentrations throughout the city. As such, a presumption against planning consent in these locations may result in large areas of land becoming undevelopable and prevent urban regeneration. The inclusion of suitable mitigation measures to protect future site users is therefore considered a suitable way to progress sustainable schemes in these locations and has been considered within this assessment.

Potential Development Impacts

3.3.4 The development has the potential to increase concentrations of NO_2, PM_{10} and $PM_{2.5}$ as a result of road traffic exhaust emissions associated with vehicles travelling to and from the site during the operational phase. A screening assessment was therefore undertaken using the criteria contained within the Institute of Air Quality Management (IAQM) 'Land-

Use Planning & Development Control: Planning for Air Quality'[11] guidance document to determine the potential for trips generated by the development to affect local air quality.

3.3.5 The IAQM guidance[12] provides the following criteria to help establish when an assessment of potential impacts on the local area is likely to be considered necessary:

A. If any of the following apply:

- 10 or more residential units or a site area of more than 0.5ha; or,
- more than 1,000 m^2 of floor space for all other uses or a site area greater than 1ha.

B. Coupled with any of the following:

- the development has more than 10 parking spaces; or,
- the development will have a centralised energy facility or other centralised combustion process.

3.3.6 Should these criteria not be met, then the IAQM guidance[13] considers air quality impacts associated with a scheme to be **not significant** and no further assessment is required.

3.3.7 Should screening of the relevant data indicate that the above criteria are met, then potential impacts at sensitive receptor locations can be assessed by calculating the change in pollutant concentrations as a result of the proposed development. The significance of predicted impacts can then be determined in accordance with the methodology outlined in the IAQM guidance[14].

11 Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.

12 Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.

13 Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.

14 Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.

4.0 BASELINE

4.1 Introduction

4.1.1 Existing air quality conditions in the vicinity of the proposed development were identified in order to provide a baseline for assessment. These are detailed in the following Sections.

4.2 Local Air Quality Management

4.2.1 As required by the Environment Act (1995), as amended by the Environment Act (2021), LBoC has undertaken Review and Assessment of air quality within their area of jurisdiction. This process has indicated that annual mean concentrations of NO_2 and 24-hour mean concentrations of PM_{10} are above the AQOs within the borough. As such, one AQMA has been declared which is described as:

"The whole borough."

4.2.2 The development is located within the AQMA. As such, there is the potential for the exposure of future occupants to poor air quality, as well as vehicles travelling to and from the site to increase pollution levels in this sensitive area. This has been considered throughout the assessment.

4.2.3 The site is lies approximately 12m east of the London Borough of Brent's (LBoB's) administrative extents. LBoB has also undertaken Review and Assessment of air quality within their area of jurisdiction. This process has indicated that annual mean concentrations of NO_2 and 24-hour mean concentrations of PM_{10} are above the relevant AQOs within the borough. One AQMA has therefore been declared. This is described as follows:

"The whole borough."

4.2.4 The site is located approximately 12m east of the AQMA. As such, there is the potential for vehicles travelling to and from the site to increase pollution levels in this sensitive area. This has been considered throughout the assessment.

4.2.5 LBoC and LBoB have concluded that concentrations of all other pollutants considered within the AQS are currently below the relevant AQOs. As such, no further AQMAs have been designated.

4.3 Air Quality Monitoring

4.3.1 Monitoring of pollutant concentrations is undertaken by LBoC and LBoB throughout their areas of jurisdiction. Recent NO_2 results recorded in the vicinity of the development are shown in Table 12. Exceedences of the relevant AQO are shown in **bold**.

Table 12 Monitoring Results

Monitoring Site		Monitored NO_2 Concentration (µg/m^3)			
		2019	2020	2021	2022
BRT 57	Kilburn Bridge	**41.7**	33.8	39.6	37.4

4.3.2 As shown in Table 12, annual mean NO_2 concentrations were above the AQO at the BRT 57 - Kilburn Bridge monitor in 2019. As this site is situated at a roadside location within an AQMA, exceedences are to be expected. Levels have since reduced to below the AQO. Reference should be made to Figure 2 for a map of the survey position.

4.3.3 LBoC and LBoB do not undertake monitoring of PM_{10} or $PM_{2.5}$ concentrations within the vicinity of the site.

4.4 Background Pollutant Concentrations

4.4.1 Predictions of background pollutant concentrations on a 1km by 1km grid basis have been produced by DEFRA for the entire of the UK to assist LAs in their Review and Assessment of air quality. The proposed development site is located in grid square NGR: 525000, 184000. Data for this location was downloaded from the DEFRA website[15] for the purpose of this assessment and is summarised in Table 13.

15 https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2018.

Table 13 Background Pollutant Concentrations

Pollutant	Predicted Background Pollutant Concentration (µg/m³)		
	2019	2023	2025
NO_2	25.96	22.46	21.31
PM_{10}	18.01	16.88	16.46
$PM_{2.5}$	11.70	10.97	10.68

4.4.2 As shown in Table 13, predicted background concentrations are below the relevant AQOs and AQLV at the development site.

4.5 Sensitive Receptors

4.5.1 A sensitive receptor is defined as any location which may be affected by changes in air quality as a result of a development. Receptors sensitive to potential dust impacts during demolition, earthworks and construction were identified from a desk-top study of the area up to 350m from the development boundary. These are summarised in Table 14.

Table 14 Demolition, Earthworks and Construction Dust Sensitive Receptors

Distance from Site Boundary (m)	Approximate Number of Human Receptors	Approximate Number of Ecological Receptors
Up to 20	More than 100	0
Up to 50	More than 100	0
Up to 100	More than 100	-
Up to 350	More than 100	-

4.5.2 Receptors sensitive to potential dust impacts from trackout were identified from a desk-top study of the area up to 50m from the road network within 500m of the site access. These are summarised in Table 15.

Table 15 Trackout Dust Sensitive Receptors

Distance from Site Access Route (m)	Approximate Number of Human Receptors	Approximate Number of Ecological Receptors
Up to 20	More than 100	0

Distance from Site Access Route (m)	Approximate Number of Human Receptors	Approximate Number of Ecological Receptors
Up to 50	More than 100	0

4.5.3 There are no ecological receptors within 50m of the development boundary or the access route within 500m of the site entrance. As such, ecological impacts have not been assessed further within this report.

4.5.4 A number of additional factors have been considered when determining the sensitivity of the surrounding area. These are summarised in Table 16.

Table 16 Additional Area Sensitivity Factors to Potential Dust Impacts

Guidance	Comment
Whether there is any history of dust generating activities in the area	The desk-top study did not indicate any dust generating activities in the local area
The likelihood of concurrent dust generating activity on nearby sites	There are a number of developments that have been granted planning consent in the vicinity of the site. It is therefore possible that there will be concurrent dust generation in the area should the construction phases of these schemes and the proposals overlap
Pre-existing screening between the source and the receptors	There is no pre-existing screening between the development site and surrounding receptors
Conclusions drawn from analysing local meteorological data which accurately represent the area: and if relevant the season during which works will take place	As shown in Figure 3, the predominant wind bearing at the site is from the south-west. As such, receptors to the north-east of the boundary are most likely to be affected by dust releases
Conclusions drawn from local topography	There are no significant topographical constraints to dust dispersion
Duration of the potential impact, as a receptor may become more sensitive over time	Information provided by the applicant indicated that construction works are estimated to extend up to a period of two years
Any known specific receptor sensitivities which go beyond the classifications given in the document	No specific receptor sensitivities identified during the baseline assessment

4.5.5 Based on the criteria shown in Table 4, the sensitivity of the receiving environment to potential dust impacts was determined as **high**. This was because the identified receptors included residential properties.

4.5.6 The sensitivity of the receiving environment to specific potential dust impacts, based on the criteria shown in Section 3.2, is shown in Table 17.

Table 17 Sensitivity of the Surrounding Area to Potential Dust Impacts

Potential Impact	Sensitivity of the Surrounding Area			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	High	High	High	High
Human Health	Medium	Medium	Medium	Medium

5.0 ASSESSMENT

5.1 Introduction

5.1.1 There is the potential for air quality impacts as a result of the construction and operation of the development, as well as the exposure of future residents to any existing air quality issues. These factors are assessed in the following Sections.

5.2 Construction Phase Assessment

Step 1

5.2.1 The undertaking of activities such as demolition, excavation, ground works, cutting, construction, concrete batching and storage of materials has the potential to result in fugitive dust emissions throughout the construction phase. Vehicle movements both on-site and on the local road network also have the potential to result in the re-suspension of dust from haul roads and highway surfaces.

5.2.2 The potential for impacts at sensitive locations depends significantly on local meteorology during the undertaking of dust generating activities, with the most significant effects likely to occur during dry and windy conditions.

5.2.3 The desk-study undertaken to inform the baseline identified a number of sensitive receptors within 350m of the site boundary. As such, a detailed assessment of potential dust impacts was required.

Step 2

Demolition

5.2.4 Demolition will be undertaken at the start of the construction phase and will involve clearance of the existing building on site. It is estimated that the total building volume to be demolished is less than 20,000m^3. In accordance with the criteria outlined in Table 3, the magnitude of potential dust emissions from demolition is therefore **small**.

5.2.5 Table 5 indicates the sensitivity of the area to dust soiling effects on people and property is **high**. In accordance with the criteria outlined in Table 8, the development is considered to be a **medium** risk site for dust soiling as a result of demolition activities.

5.2.6 Table 6 indicates the sensitivity of the area to human health impacts is **medium**. In accordance with the criteria outlined in Table 8, the development is considered to be a **low** risk site for human health impacts as a result of demolition activities.

Earthworks

5.2.7 Earthworks will primarily involve excavating material, haulage, tipping and stockpiling, as well as site levelling and landscaping. The proposed development site covers an area of less than 2,500m^2. In accordance with the criteria outlined in Table 3, the magnitude of potential dust emissions from earthworks is therefore **small**.

5.2.8 Table 5 indicates the sensitivity of the area to dust soiling effects on people and property is **high**. In accordance with the criteria outlined in Table 9, the development is considered to be a **low** risk site for dust soiling as a result of earthworks.

5.2.9 Table 6 indicates the sensitivity of the area to human health impacts is **medium**. In accordance with the criteria outlined in Table 9 the development is considered to be a **low** risk site for human health impacts as a result of earthworks.

Construction

5.2.10 The total proposed building volume was estimated to be less than 25,000m^3. In accordance with the criteria outlined in Table 3, the magnitude of potential dust emissions from construction is therefore **small**.

5.2.11 Table 17 indicates the sensitivity of the area to dust soiling effects on people and property is **high**. In accordance with the criteria outlined in Table 9, the development is considered to be a **low** risk site for dust soiling as a result of construction activities.

5.2.12 Table 17 indicates the sensitivity of the area to human health impacts is **medium**. In accordance with the criteria outlined in Table 9, the development is considered to be a **low** risk site for human health impacts as a result of construction activities.

Trackout

5.2.13 Based on the total site area and existing hard standing provision, it is anticipated that the unpaved road length will be less than 50m. In accordance with the criteria outlined in Table 3, the magnitude of potential dust emissions from trackout is therefore **small**.

5.2.14 Table 17 indicates the sensitivity of the area to dust soiling effects to people and property is **high**. In accordance with the criteria outlined in Table 10, the development is considered to be a **low** risk site for dust soiling as a result of trackout activities.

5.2.15 Table 17 indicates the sensitivity of the area to human health impacts is **medium**. In accordance with the criteria outlined in Table 10, the development is considered to be a **negligible** risk site for human health impacts as a result of trackout activities.

Summary of the Risk of Dust Effects

5.2.16 A summary of the risk from each dust generating activity is provided in Table 18.

Table 18 Summary of Potential Unmitigated Dust Risks

Potential Impact	Risk			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	Medium	Low	Low	Medium
Human Health	Low	Low	Low	Negligible

5.2.17 As indicated in Table 18, the potential risk of dust soiling is **medium** from demolition and trackout and **low** from earthworks and construction. The potential risk of human health impacts is **low** from demolition, earthworks, construction and **negligible** from trackout.

5.2.18 It should be noted that the potential for impacts depends significantly on the distance between the dust generating activity and receptor location. Risk was predicted based on a worst-case scenario of works being undertaken at the site boundary closest to each sensitive area. Therefore, actual risk is likely to be lower than that predicted during the majority of the construction phase.

Step 3

5.2.19 The Mayor of London's guidance[16] provides potential mitigation measures to reduce impacts as a result of fugitive dust emissions during the construction phase. These have been adapted for the development site as summarised in Table 19.

Table 19 Fugitive Dust Emission Mitigation Measures

Issue	Control Measure
Site management	• Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. • Display the head or regional office contact information • Record and respond to all dust and air quality pollutant emissions complaints • Make the complaints log available to the LA when asked • Carry out regular site inspections, record inspection results, and make an inspection log available to the LA upon request • Increase the frequency of site inspections by those accountable for dust and air quality pollutant emissions issues when activities with a high potential to produce dust are being carried out, and during prolonged dry or windy conditions • Record any exceptional incidents, either on or off the site, and the action taken to resolve the situation is recorded in the log book
Preparing and maintaining the site	• Plan site layout: machinery and dust causing activities should be located away from receptors • Erect solid screens or barriers around dusty activities or the site boundary that are, at least, as high as any stockpiles on site • Avoid site runoff of water or mud • Remove materials from site as soon as possible
Operating vehicle/machinery and sustainable travel	• Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone • Ensure all Non-Road Mobile Machinery comply with the relevant standards • Ensure all vehicles switch off engines when stationary - no idling vehicles • Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable

16 The Control of Dust and Emissions During Construction and Demolition Supplementary Planning Guidance, The Mayor of London, 2014.

Issue	Control Measure
Operations	• Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques • Ensure an adequate water supply on the site for effective dust/particulate matter mitigation (using recycled water where possible) • Use enclosed chutes and conveyors and covered skips • Minimise drop heights and use fine water sprays wherever appropriate
Waste management	• Reuse and recycle waste to reduce dust from waste materials • Avoid bonfires and burning of waste materials
Demolition	• Ensure effective water suppression is used during demolition operations • Avoid explosive blasting, using appropriate manual or mechanical alternatives • Bag and remove any biological debris or damp down such material before demolition
Construction	• Avoid scabbling (roughening of concrete surfaces) if possible • Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out
Trackout	• Regularly use water-assisted dust sweeper on the access and local roads, as necessary, to remove any material tracked out of site • Avoid dry sweeping of large areas • Ensure vehicles entering and leaving site are covered to prevent escape of materials • Implement a wheel washing system, if required

Step 4

5.2.20 Assuming the relevant mitigation measures outlined in Table 19 are implemented, the residual impacts from all dust generating activities are predicted to be **not significant**, in accordance with the Mayor of London's guidance[17].

[17] The Control of Dust and Emissions During Construction and Demolition Supplementary Planning Guidance, The Mayor of London, 2014.

5.3 Operational Phase Assessment

Potential Future Exposure

5.3.1 The proposed development has the potential to expose future occupants to elevated pollution levels. Dispersion modelling was therefore undertaken with the inputs described in Appendix 1 to quantify air quality conditions at the site. Reference should be made to Figures 4, 5, 6 and 7 for graphical representations of predicted annual mean NO_2, annual mean PM_{10}, 24-hour mean PM_{10} and annual mean $PM_{2.5}$ concentrations.

5.3.2 It should be noted that the proposals include commercial space at ground floor level. This is not considered a sensitive land use for annual mean AQOs in accordance with the GLA guidance[18]. As such, the exposure assessment focused on concentrations at the residential apartments, which are to be located at first floor level and above.

5.3.3 Predicted concentrations above 5% of the annual mean AQO are shown in blue on the contour plots. These relate to areas defined as APEC - C within the London Councils Air Quality and Planning Guidance. Predicted concentrations between 5% below and 5% above the annual mean AQO are shown in green. These relate to areas defined as APEC - B within the guidance. Predicted concentrations below 5% of the annual mean AQO are shown in white on the contour plots. These relate to areas defined as APEC - A within the guidance.

5.3.4 As shown in Figure 4, annual mean NO_2 concentrations were predicted to be below the AQO of 40µg/m^3 at all residential apartments. The maximum concentration at the site boundary was 33.11µg/m^3, which is classified as APEC - A in accordance London Councils Air Quality and Planning Guidance[19].

5.3.5 As shown in Figure 5, annual mean PM_{10} concentrations were predicted to be below the AQO of 40µg/m^3 at all residential apartments. The maximum concentration at the site boundary was 18.10µg/m^3, which is classified as APEC - A in accordance with the London Councils Air Quality and Planning Guidance[20].

18 London Local Air Quality Management (TG19), Technical Guidance 2019 (LLAQM.TG (2019)), GLA, 2019.

19 London Councils Air Quality and Planning Guidance, London Councils, 2007.

20 London Councils Air Quality and Planning Guidance, London Councils, 2007.

5.3.6 As shown in Figure 6, the total number of days with PM_{10} concentrations above 50µg/m^3 was predicted to be below the AQO of 35 at all residential apartments. The maximum number of days with concentrations above 50µg/m^3 at the site boundary was 2, which is classified as APEC - A in accordance with the London Councils Air Quality and Planning Guidance[21].

5.3.7 As shown in Figure 7, annual mean $PM_{2.5}$ concentrations were predicted to be below the AQLV of 20µg/m^3 at all residential apartments. The maximum level at the façade fronting Kilburn High Road was 12.12µg/m^3. It is noted this is slightly above the Interim Target of 12µg/m^3. However, it is anticipated that vehicle exhaust emission rates and background concentrations will improve in future years through local and national policy initiatives. Therefore, annual mean $PM_{2.5}$ concentrations will reduce across the development site by 2028.

5.3.8 Based on the assessment results, the site has been classified as APEC - A. It is therefore considered suitable for the proposed end-use from an air quality perspective without the inclusion of mitigation. Notwithstanding these findings, all residential units will be served by a mechanical ventilation system. This will ensure a supply of fresh air and will further control potential exposure of future residents to elevated pollutant concentrations.

Potential Development Impacts

5.3.9 Any vehicle movements associated with the development will generate exhaust emissions on the local and regional road networks. The proposals include nine residential units and no associated car parking spaces. Potential air quality impacts associated with operational phase road vehicle exhaust emissions are therefore predicted to be **not significant**, in accordance with the IAQM[22] screening criteria shown in Section 3.3.

[21] London Councils Air Quality and Planning Guidance, London Councils, 2007.

[22] Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.

6.0 AIR QUALITY NEUTRAL ASSESSMENT

6.1 Introduction

6.1.1 The London Plan[23] requires that all developments are 'air quality neutral' to ensure proposals do not lead to further deterioration of existing poor air quality. In order to support this policy, guidance[24] has been produced on behalf of the GLA. The document provides a methodology for determining potential emissions from a development and benchmark values for comparison purposes. Where the benchmark is exceeded then action is required, either locally or by way of off setting.

6.1.2 The Air Quality Neutral Assessment for the proposed development is outlined below.

6.2 Building Emissions

6.2.1 The proposals comprise commercial land use at ground floor level and nine residential units from first floor and above. Heating and hot water for the commercial element, as well as five residential units will be provided by Air Source Heat Pumps (ASHPs). These do not produce NO_x or PM_{10} emissions to atmosphere. As such, building emissions in relation to these areas of the scheme were not considered further within the assessment.

6.2.2 Gas boilers will be utilised to provide heating and hot water to the remaining four units. As such, the development can be classified as minor in accordance with the guidance[25] and a simplified assessment undertaken. The NO_X emission rate of the specified boiler is less than 40mg/kWh. In accordance with the guidance[26], these dwellings can be assumed to meet the Building Emission Benchmark and further assessment is not considered necessary. The boiler specification can be secured by planning condition if required by LBoC.

23 The London Plan - March 2021, GLA, 2021.

24 London Plan Guidance: Air Quality Neutral, GLA, 2023.

25 London Plan Guidance: Air Quality Neutral, GLA, 2023.

26 London Plan Guidance: Air Quality Neutral, GLA, 2023.

6.3 Transport Emissions

6.3.1 The proposals do not include any parking spaces and are classified 'car free'. As such, the development is air quality neutral from a transport emissions perspective.

6.4 Summary

6.4.1 Potential emissions from the development were assessed in order to determine compliance with the air quality neutral requirements of the London Plan. The results indicated an acceptable level of building and transport emissions from the scheme. As such, the development is considered air quality neutral.

7.0 CONCLUSION

7.1.1 Redmore Environmental Ltd was commissioned by Judith Taylor to undertake an Air Quality Assessment in support of a mixed-use development at 238 Kilburn High Road, London.

7.1.2 The development may lead to the exposure of future occupants to elevated pollution levels, as well as adverse air quality impacts at sensitive locations. As such, an Air Quality Assessment was undertaken in order to determine baseline conditions, consider site suitability for the proposed end-use and assess potential impacts as a result of the scheme.

7.1.3 During the construction phase of the development there is the potential for air quality impacts as a result of fugitive dust emissions from the site. These were assessed in accordance with the Mayor of London's methodology. Assuming good practice dust control measures are implemented, the residual significance of potential air quality impacts from dust generated by demolition, earthworks, construction and trackout activities was predicted to be **not significant**.

7.1.4 The proposals have the potential to expose future occupants to elevated pollution levels. Dispersion modelling was therefore undertaken using ADMS-Roads in order to predict concentrations as a result of emissions from the local highway network. Results were subsequently verified using local monitoring data.

7.1.5 The results of the dispersion modelling assessment indicated that predicted concentrations of NO_2, PM_{10} and $PM_{2.5}$ were below the relevant AQOs and AQLV at locations of relevant exposure. Pollutant levels were categorised as APEC - A in accordance with the London Councils Air Quality and Planning Guidance. As such, the site is considered suitable for the proposed use from an air quality perspective.

7.1.6 Potential impacts during the operational phase of the proposed development may occur due to road traffic exhaust emissions associated with vehicles travelling to and from the site. These were assessed against the screening criteria provided within the IAQM guidance. Due to the scale and nature of the proposals, impacts were predicted to be **not significant**.

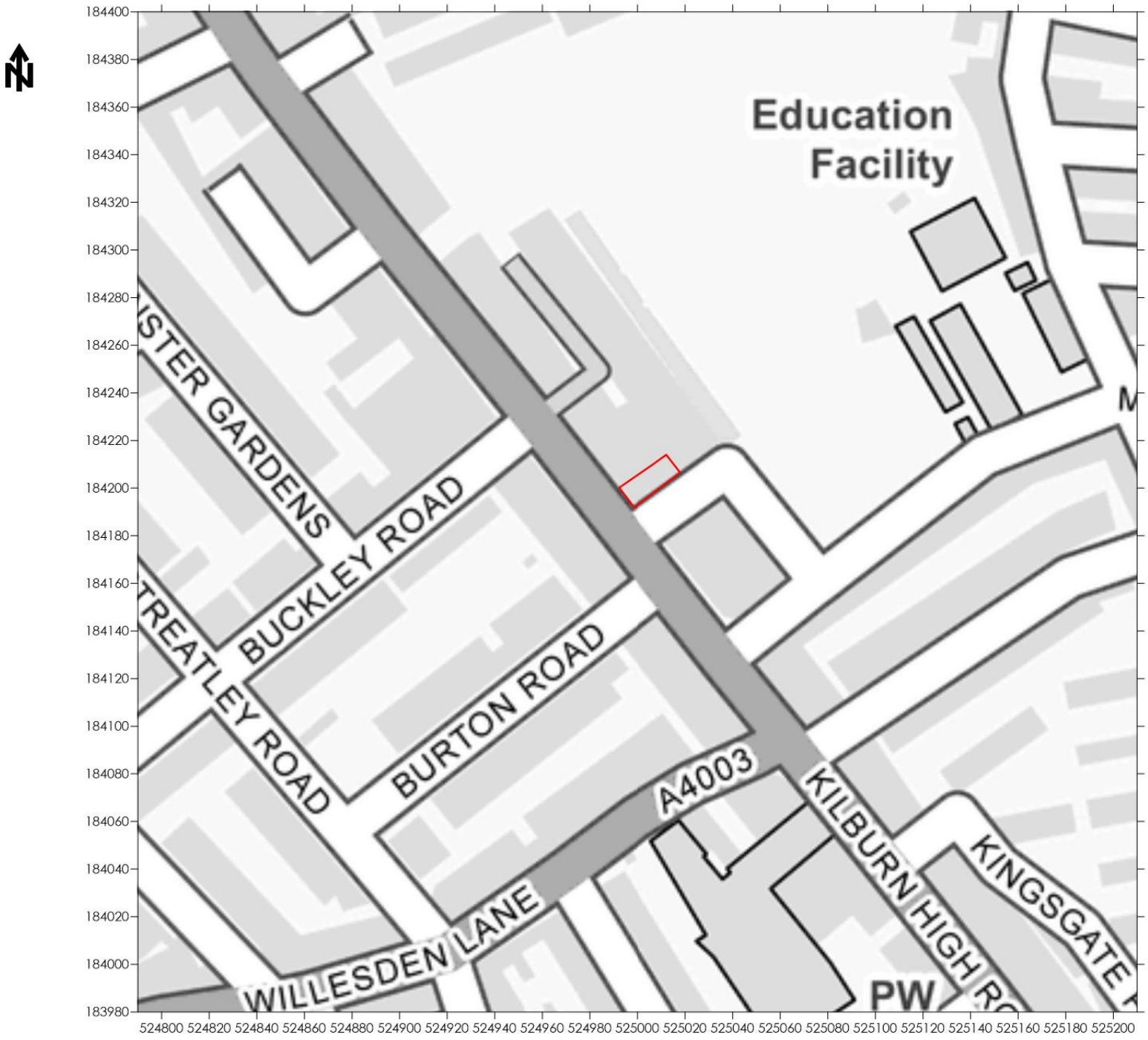
7.1.7 Potential emissions from the development were reviewed in the context of the air quality neutral requirements of the London Plan. This indicated an acceptable level of building and transport emissions from the scheme.

7.1.8 Based on the assessment results, air quality factors are not considered a constraint to planning consent for the proposals.

8.0 ABBREVIATIONS

AADT	Annual Average Daily Traffic
ADM	Atmospheric Dispersion Modelling
AQAP	Air Quality Action Plan
AQLV	Air Quality Limit Value
AQMA	Air Quality Management Area
AQO	Air Quality Objective
AQS	Air Quality Strategy
BEB	Building Emission Benchmark
CERC	Cambridge Environmental Research Consultants
DEFRA	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
EFT	Emissions Factor Toolkit
GLA	Greater London Authority
HDV	Heavy Duty Vehicle
HGV	Heavy Goods Vehicle
IAQM	Institute of Air Quality Management
LA	Local Authority
LAEI	London Atmospheric Emissions Inventory
LAQM	Local Air Quality Management
LBoB	London Borough of Brent
LBoC	London Borough of Camden
LGV	Light Goods Vehicle
NGR	National Grid Reference
NO_2	Nitrogen dioxide
NO_x	Oxides of nitrogen
NPPF	National Planning Policy Framework
NPPG	National Planning Practice Guidance
PM_{10}	Particulate matter with an aerodynamic diameter of less than 10µm
$PM_{2.5}$	Particulate matter with an aerodynamic diameter of less than 2.5µm
SP	Slow Phase
SPG	Supplementary Planning Guidance
z_0	Roughness length

Figures



Legend

Site Boundary

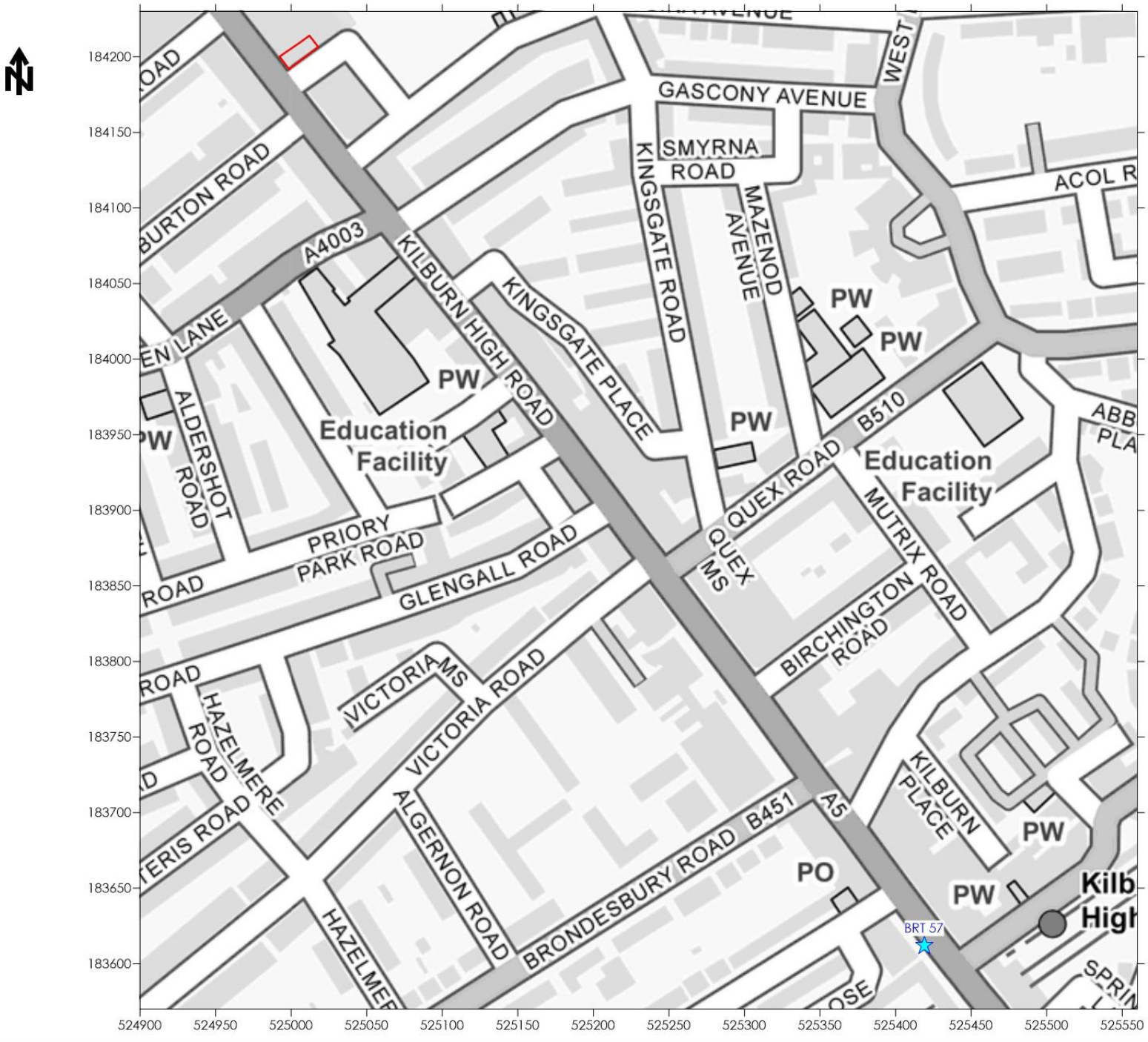
Title
Figure 1 - Site Location Plan

Project
Air Quality Assessment,
Kilburn High Road, London

Project Reference
4611-1

Client
Judith Taylor

Redmore environmental
www.red-env.co.uk | 0161 7060075



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Site Boundary

Monitor

Title
Figure 2 - Monitoring Location

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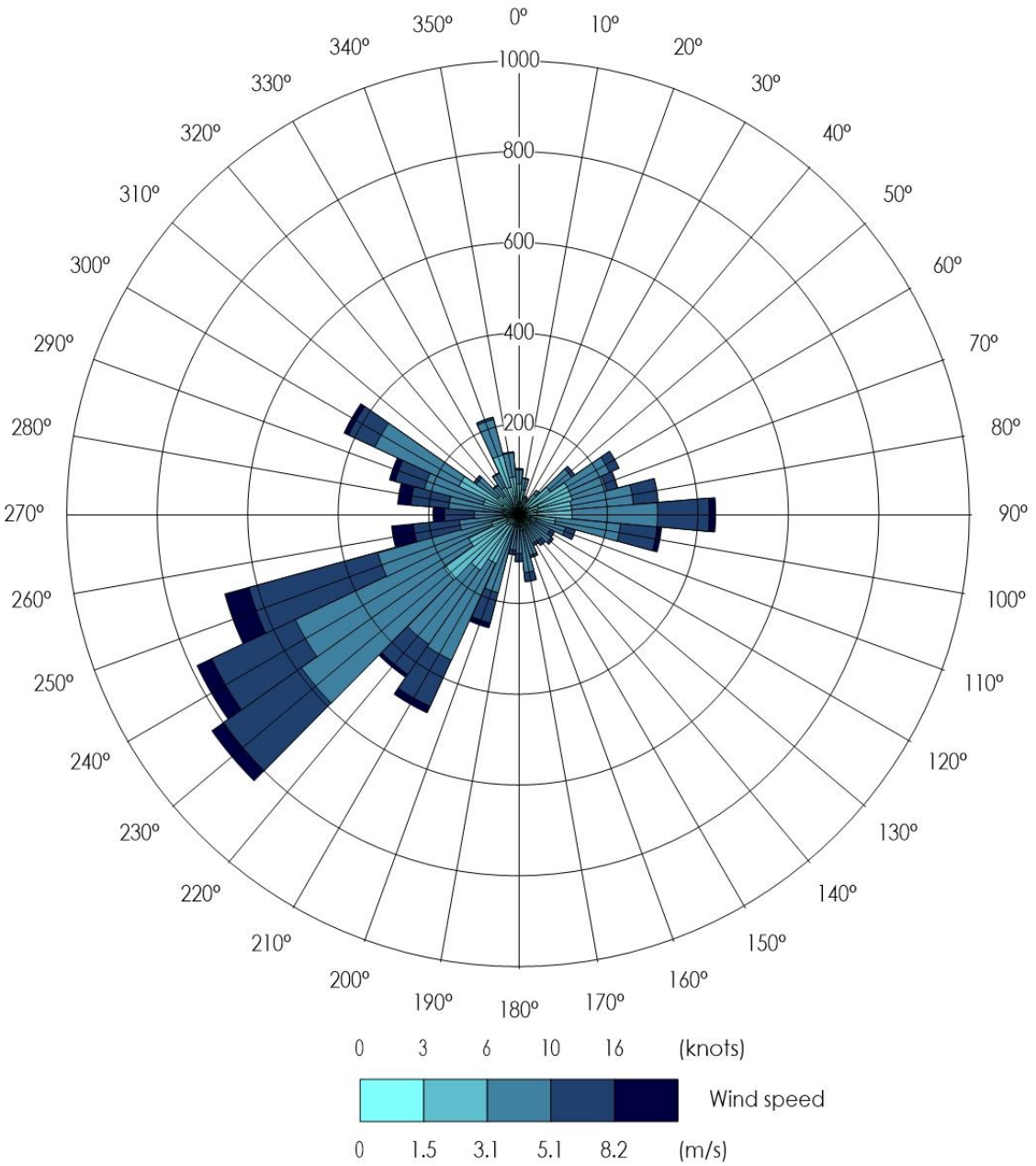

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Title
Figure 3 - Wind Rose of 2019 London City Airport Meteorological Data

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Legend

Site Boundary

Annual Mean NO_2 Concentration ($\mu g/m^3$)

56
52
48
APEC - C
44
42
40
APEC - B
38
36
APEC - A
32

Title

Figure 4 - Predicted Annual Mean NO_2 Concentrations ($\mu g/m^3$) First Floor Level

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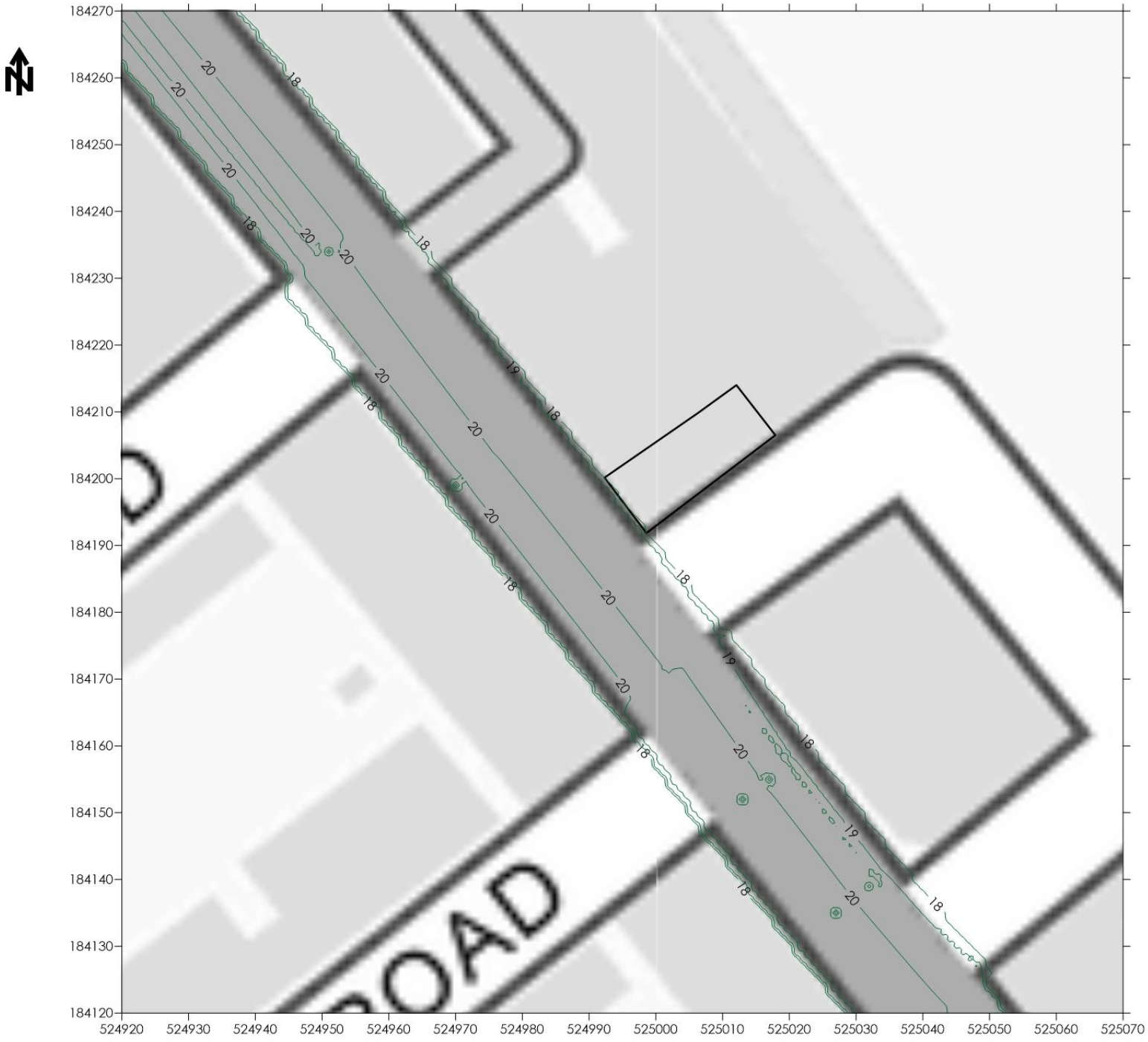

Legend

Site Boundary

Annual Mean PM_{10} Concentration ($\mu g/m^3$)

23
22
21
20
19
18

APEC - A

Title

Figure 5 - Predicted Annual Mean PM_{10} Concentrations ($\mu g/m^3$) First Floor Level

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4611-1

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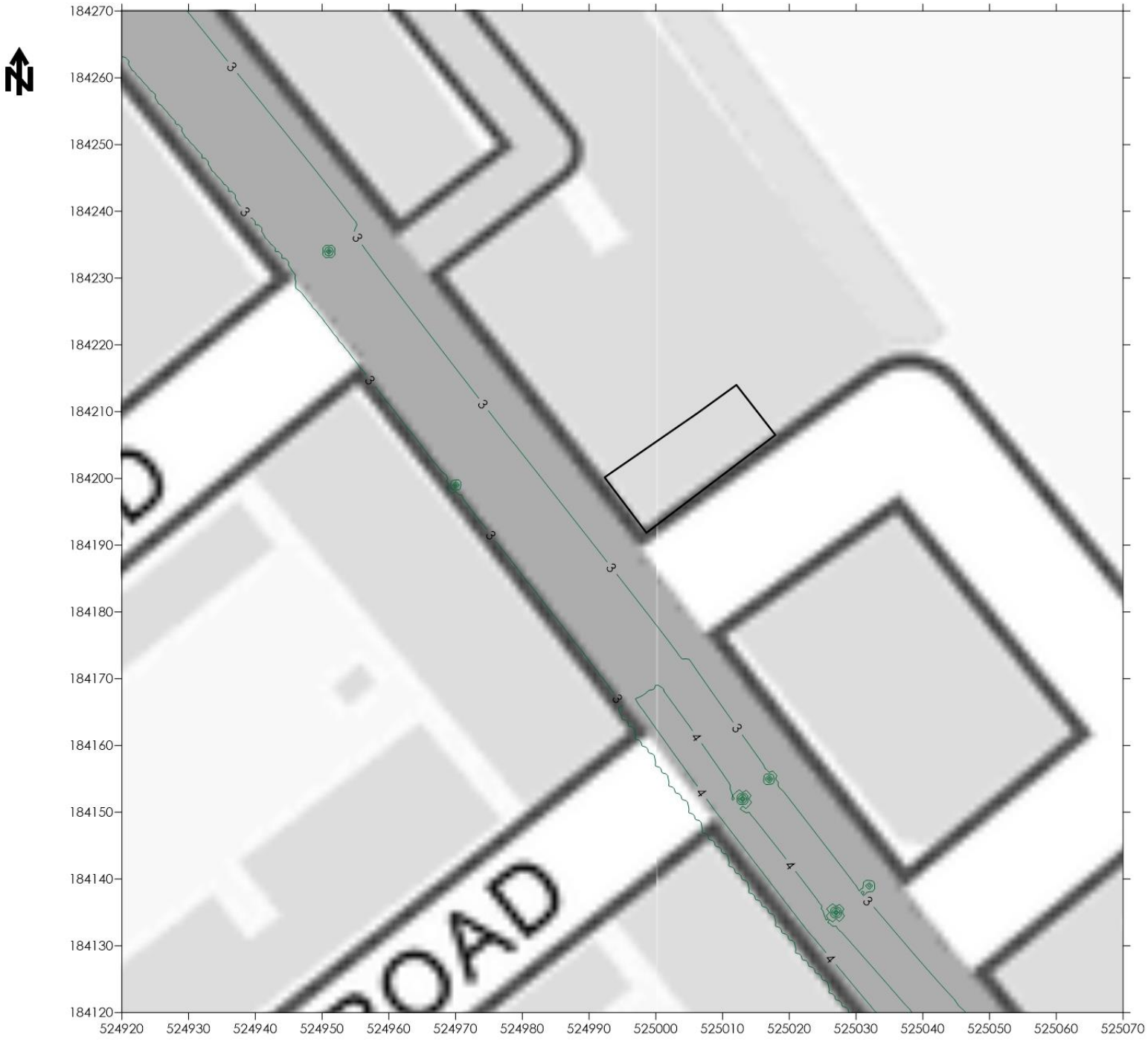

Legend

Site Boundary

Number of Days with PM_{10} Concentrations Greater than 50µg/m³

9
8
7
6
5
4
3

APEC - A

Title

Figure 6 - Predicted Number of Days with PM_{10} Concentrations Greater than 50µg/m³ (Days)
First Floor Level

Project

Air Quality Assessment,
Kilburn High Road, London

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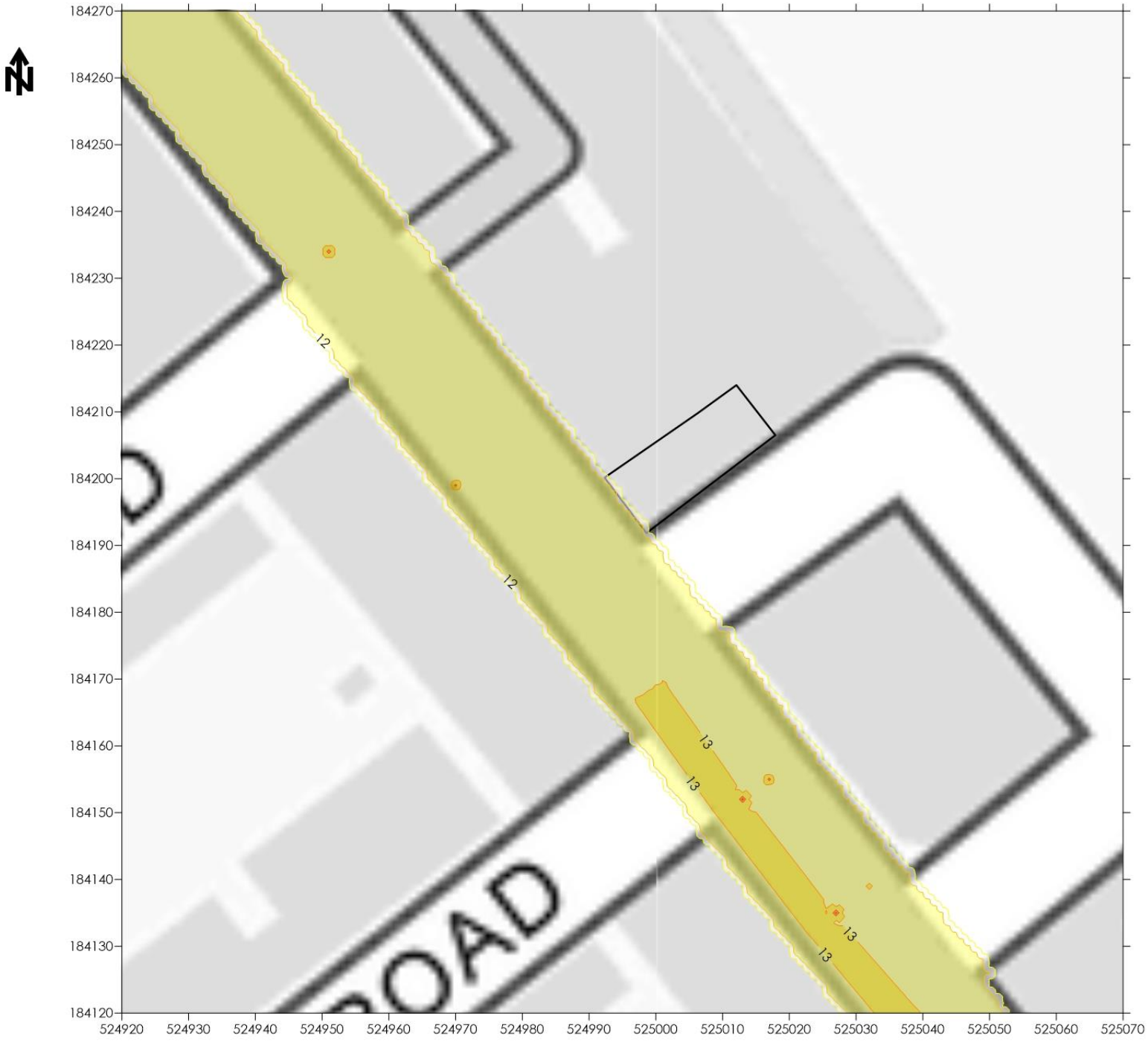

Legend

Site Boundary

15
14
13
12
11

Annual Mean $PM_{2.5}$ Concentration ($\mu g/m^3$)

Title

Figure 7 - Predicted Annual Mean $PM_{2.5}$ Concentrations ($\mu g/m^3$) First Floor Level

Project

Air Quality Assessment, Kilburn High Road, London

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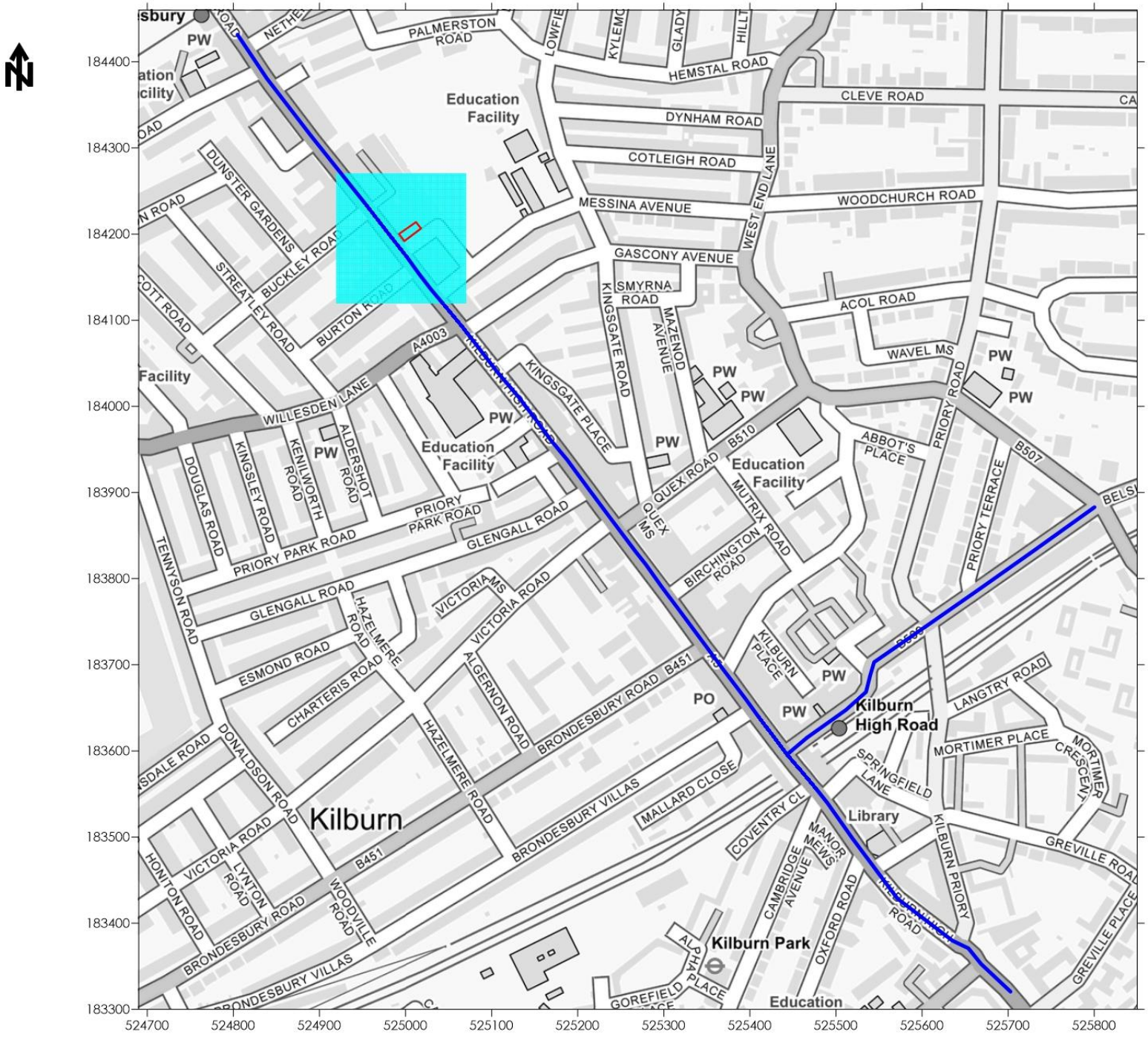

Legend

Site Boundary

Road Link

Output Grid

Title
Figure 8 - ADMS-Roads Inputs

Project
Air Quality Assessment,
Kilburn High Road, London

Project Reference
4611-1

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Appendix 1 - Assessment Input Data

Introduction

The proposed development has the potential to expose future occupants to elevated pollution levels. In order to assess pollutant concentrations across the site, detailed dispersion modelling was therefore undertaken in accordance with the following methodology.

Modelling was undertaken for 2019 to allow verification against recent monitoring results and 2025 to represent likely conditions in the opening year of the scheme.

Dispersion Model

Dispersion modelling was undertaken in order to predict NO_2 and PM_{10} concentrations across the site using the ADMS-Roads dispersion model (version 5.0.1.3). ADMS-Roads is developed by Cambridge Environmental Research Consultants (CERC) and is routinely used throughout the world for the prediction of pollutant dispersion from road sources. Modelling predictions from this software package are accepted within the UK by the Environment Agency and DEFRA.

The model requires input data that details the following parameters:

- Assessment area;
- Traffic flow data;
- Vehicle emission factors;
- Spatial co-ordinates of emissions;
- Street width;
- Meteorological data;
- Roughness length (z_0); and,
- Monin-Obukhov length.

Additional options can also be selected with the ADMS-Roads interface to take account of the site specific characteristics that may affect model output, such as canyons.

These are detailed in the following Sections.

Assessment Area

Ambient concentrations were predicted over the area NGR: 524900, 184120 to 525070, 184270. One Cartesian grid was included within the model to produce data suitable for contour plotting using the Surfer software package.

It should be noted that although the grid only covered the proposed site, road links were extended in order to ensure the impact of all relevant vehicle emissions in the vicinity of the development were considered.

Reference should be made to Figure 8 for a graphical representation of the assessment grid extents.

Traffic Flow Data

Traffic data for use in the assessment, including 24-hour Annual Average Daily Traffic (AADT) flows and fleet composition, was obtained from the London Atmospheric Emissions Inventory (LAEI). The LAEI was produced by the GLA and provides traffic flows throughout London for a number of scenarios. It should be noted that the LAEI is referenced in GLA guidance[27] as being a suitable source of data for air quality assessments and is therefore considered to provide a reasonable estimate of traffic flows in the vicinity of the site.

The baseline traffic data was converted to the opening year of the development utilising a factor obtained from TEMPro (version 8.0). This software package has been developed by the Department for Transport (DfT) to calculate future traffic growth throughout the UK.

Road widths and vehicle speeds were estimated from aerial photography and UK highway design standards. A summary of the traffic data is provided in Table A1.1.

[27] London Local Air Quality Management (LLAQM)), Technical Guidance 2019 (LLAQM.TG (19)), GLA, 2019.

Table A1.1 Traffic Data

Link		24-hour AADT Flow		Road Width (m)	Average Vehicle Speed (km/h)
		2019	2025		
L1	A5 - Kilburn High Road, north of Buckley Road	19,569	20,970	10.2	40
L2	A5 - Kilburn High Road, between Buckley and Burton Road	19,569	20,970	10.8	40
L3	A5 - Kilburn High Road, south of Burton Road	19,569	20,970	11.1	40
L4	A5 - Kilburn High Road, Slow Phase (SP)	19,569	20,970	10.1	25
L5	A5 - Kilburn High Road, south of A4003	19,569	20,970	10.0	40
L6	A5 - Kilburn High Road, North of Belsize Road, SP	19,569	20,970	13.1	25
L7	A5 - Kilburn High Road, South of Belsize Road, SP	21,240	22,761	13.4	25
L8	A5 - Kilburn High Road	21,240	22,761	12.0	40
L9	B509 - Belsize Road, SP	2,809	3,010	7.3	25
L10	B509 - Belsize Road	2,809	3,010	7.4	40

Fleet composition data as a proportion of total flows on each link for cars, taxis, Light Goods Vehicles (LGV), Heavy Goods Vehicles (HGV), buses and coaches and motorcycles are summarised in Table A1.2.

Table A1.2 Fleet Composition Data

Link	Proportion of Fleet (%)						
	Car	Taxi	LGV	Rigid HGV	Artic HGV	Bus and Coach	Motorcycle
L1	63.4	2.2	15.8	3.2	0.7	11.0	3.7
L2	63.4	2.2	15.8	3.2	0.7	11.0	3.7
L3	63.4	2.2	15.8	3.2	0.7	11.0	3.7
L4	63.4	2.2	15.8	3.2	0.7	11.0	3.7
L5	63.4	2.2	15.8	3.2	0.7	11.0	3.7
L6	63.4	2.2	15.8	3.2	0.7	11.0	3.7
L7	62.4	1.9	15.2	3.7	0.8	12.3	3.7

Link	Proportion of Fleet (%)						
	Car	Taxi	LGV	Rigid HGV	Artic HGV	Bus and Coach	Motorcycle
L8	62.4	1.9	15.2	3.7	0.8	12.3	3.7
L9	59.7	0.9	11.2	7.4	0.3	17.6	2.9
L10	59.7	0.9	11.2	7.4	0.3	17.6	2.9

Reference should be made to Figure 8 for a graphical representation of the road link locations.

Emission Factors

The emission factors were calculated using the relevant traffic flows and the Emissions Factor Toolkit (EFT) (version 11.0). This has been produced by DEFRA and incorporates COPERT 5.3 vehicle emission factors and fleet information.

Canyons

Where buildings or walls surround roads, pollutant dispersion patterns are altered which can lead to high pollutant concentrations. These street canyons can significantly influence air quality along a road and therefore it is important to take consideration of their effects when undertaking dispersion modelling.

The release of ADMS-Roads version 4.0.1.0 in December 2015 incorporated a number of new features including an advanced street canyon module, which have been retained in version 5.0.1.3. Advanced street canyon modelling allows a number of parameters to be included in the dispersion model in order to predict pollutant dispersion patterns which better reflect air flow within complex urban geometries.

Canyons have five principal effects on dispersion which can influence pollutant concentrations. These are:

- Pollutants are channelled along street canyons;
- Pollutants are dispersed across street canyons by circulating flow at road height;
- Pollutants are trapped in recirculation regions;

- Pollutants leave the canyon through gaps between buildings - as if there was no canyon; and,
- Pollutants leave the canyon from the canyon top.

The combined modelling of these effects will result in concentration patterns unique to each canyon. The parameters used in the assessment are outlined in A1.3

Table A1.3 Canyons

Link	Parameters (m)					
	Canyon Width to Left	Average Height of Buildings to Left	Building Length Left	Canyon Width Right	Average Height of Buildings to Right	Building Length Right
L1	9.5	12.0	205.9	9.1	9.0	214.2
L2	9.4	12.0	54.4	11.6	12.0	55.4
L3	9.9	9.0	52.8	11.0	12.0	67.3
L4	7.5	12.0	35.1	8.7	10.0	25.9
L5	11.5	12.0	509.9	12.0	12.0	476.0
L6	9.7	12.0	50.2	15.1	7.0	55.3
L7	11.2	4.0	34.8	16.1	5.0	41.6
L8	8.8	12.0	208.7	9.1	12.0	207.0
L9	6.1	12.0	27.4	6.3	5.0	25.4
L10	6.3	12.0	269.3	7.1	10.0	290.0

A choice of two modes is provided for use in the advanced canyon module. Standard mode assumes that each road is part of a continuous network of roads with similar canyon properties. Network mode analyses the road network to determine transport of pollutants between adjoining street canyons, allows for varying concentrations along the canyon and accounts for transport of pollutants out of the end of a canyon. Network mode is considered most accurate for detailed local analysis and as such was selected for use in the model.

Meteorological Data

Meteorological data used in the assessment was taken from London City Airport meteorological station over the period 1st January 2019 to 31st December 2019 (inclusive). London City Airport is located at NGR: 542739, 180487, which is approximately 18.1km south-east of the development. It is anticipated that conditions would be reasonably similar over a distance of this magnitude. The data was therefore considered suitable for an assessment of this nature.

All meteorological records used in the assessment were provided by Atmospheric Dispersion Modelling (ADM) Ltd, which is an established distributor of data within the UK. Reference should be made to Figure 3 for a wind rose of utilised meteorological data.

Roughness Length

The z_0 is a modelling parameter applied to allow consideration of surface height roughness elements. A z_0 of 1m was used to describe the modelling extents. This is considered appropriate for the morphology of the area and is suggested within ADMS-Roads as being suitable for 'cities, woodland'.

A z_0 of 0.1m was used to describe the meteorological site. This value is considered appropriate for the morphology of the area due to the large expanse of surrounding flat land and is suggested within ADMS-Roads as being suitable for 'Root crops'.

Monin-Obukhov Length

The Monin-Obukhov length provides a measure of the stability of the atmosphere. A minimum Monin-Obukhov length of 100m was used to describe the modelling extents and meteorological site. This is considered appropriate for the nature of both areas and is suggested within ADMS-Roads as being suitable for 'large conurbations >1 million'.

Background Concentrations

Annual mean NO_2, PM_{10} and $PM_{2.5}$ background concentrations for use in the assessment were obtained from the DEFRA mapping study for the grid square containing the development site, as shown in Table 13.

It is noted that the GLA have released background concentration maps with a spatial resolution of 20m for 2013, 2020, 2025 and 2030. However, as the modelling area is considerably greater than 20m, and values were not available for the verification year, this data was not considered appropriate for use in the assessment.

NO_x to NO_2 Conversion

Predicted annual mean NO_x concentrations were converted to NO_2 concentrations using the spreadsheet (version 8.1) provided by DEFRA, which is the method detailed within DEFRA guidance[28] and GLA guidance[29].

Verification

The predicted results from a dispersion model may differ from measured concentrations for a large number of reasons, including:

- Estimates of background concentrations;
- Uncertainties in source activity data such as traffic flows and emission factors;
- Variations in meteorological conditions;
- Overall model limitations; and,
- Uncertainties associated with monitoring data, including locations.

Model verification is the process by which these and other uncertainties are investigated and where possible minimised. In reality, the differences between modelled and monitored results are likely to be a combination of all of these aspects.

For the purpose of the assessment, model verification was undertaken for 2019 using traffic data, meteorological data and monitoring results from this year. The choice of 2019 as the verification year aligns with the IAQM position statement 'Use of 2020 and 2021 Monitoring Datasets', which states:

> "If you are carrying out an air quality study that includes validation against monitoring data, use 2019 monitoring data as the last typical year."

[28] Local Air Quality Management Technical Guidance (TG22), DEFRA, 2022.

[29] London Local Air Quality Management (LLAQM)), Technical Guidance 2019 (LLAQM.TG (19)), GLA, 2019.

Monitoring of NO_2 concentrations was undertaken at one location within the vicinity of roads included within the model during 2019. The result was obtained and the road contribution to total NO_x concentration calculated following the methodology contained within DEFRA guidance[30]. The monitored annual mean NO_2 concentration and calculated road NO_x concentration is summarised in Table A1.3.

Table A1.3 Verification - Monitoring Result

Monitoring Location		Monitored NO_2 Concentration (µg/m³)	Calculated Road NO_x Concentration (µg/m³)
BRT 57	Kilburn Bridge	41.7	35.92

The annual mean road NO_x concentration predicted from the dispersion model and the road NO_x concentration calculated from the monitoring result is summarised in Table A1.5.

Table A1.5 Verification - Modelling Result

Monitoring Location		Calculated Road NO_x Concentration (µg/m³)	Modelled Road NO_x Concentration (µg/m³)
BRT 57	Kilburn Bridge	35.92	29.98

The monitored and modelled road NO_x concentrations were compared to calculate the associated ratio. This indicated a verification factor of 1.198 was required to be applied to all modelling results.

Monitoring of PM_{10} and $PM_{2.5}$ concentrations is not undertaken within the assessment extents. The NO_x verification factor was therefore used to adjust PM_{10} model predictions in lieu of more accurate data in accordance with GLA guidance[31].

30 Local Air Quality Management Technical Guidance (TG22), DEFRA, 2022.

31 London Local Air Quality Management (LLAQM)), Technical Guidance 2019 (LLAQM.TG (19)), GLA, 2019.

Appendix 2 - Curricula Vitae

JETHRO REDMORE

Director

BEng (Hons), MSc, MIAQM, MIEnvSc, PIEMA, CEnv

KEY EXPERIENCE:

Jethro is a Chartered Environmentalist and Director of Redmore Environmental with specialist experience in the air quality and odour sectors. His key capabilities include:

- Production and management of Air Quality, Dust and Odour Assessments for a wide-range of clients from the retail, residential, infrastructure, commercial and industrial sectors.
- Production and co-ordination of Environmental Permit applications for a variety of industrial sectors.
- Detailed dispersion modelling of road vehicle and industrial emissions using ADMS-Roads, ADMS-5, AERMOD-PRIME and BREEZE-ROADS. Studies have included impact assessment of ground level pollutant and odour concentrations and assessment of suitability of development sites for proposed end-use.
- Project management and co-ordination of Environmental Impact Assessments and scoping reports for developments throughout the UK.
- Provision of expert witness services at Planning Inquiries.
- Design and project management of pollutant monitoring campaigns.
- Co-ordination and management of large-scale multi-disciplinary projects and submissions.

  Provision of expert advice to local government and international environmental bodies, as well as involvement in production of industry guidance.

SELECT PROJECTS SUMMARY:

Industrial and Agricultural

Discovery Park, Sandwich - Air Quality Assessment including dispersion modelling of gas fired steam generating boilers in support of a Medium Combustion Plant (MCP) Environmental Permit Application.

St Thomas House, Ellesmere Port - Air Quality Assessment including dispersion modelling of two biomass boilers firing wood pellets.

Herriard Anaerobic Digester - H1 Screening Assessment in accordance with Environment Agency guidance.

Halls Farm, Bude - Ammonia and Odour Assessments in support of a proposed farm expansion, including the construction of a cattle slurry lagoon and livestock housing

London Luton Airport - Air Quality Assessment including dispersion modelling of gas fired boilers in support of a MCP Environmental Permit Application.

Rectory Farm, Aldborough - Odour Assessment in support of the development of livestock housing.

Ashfields, Tilbury - Dust Assessment in support of the extraction of Pulverised Fuel Ash associated with the former Tilbury Power Station.

Poplar Farm, Bedfield - Dust Assessment and Management Plan for an aggregate processing facility.

Crown Chicken, Kenninghall - Air Quality, Odour and Dust Environmental Impact Assessment (EIA) in support of a farm expansion.

Newport Chalk Pit - Air Quality Assessment in support of a recycling and restoration project.

Residential

Jack Chase Way, Caister - Air Quality EIA in support of a planning application for circa 725 dwellings.

New Road, Tintwistle - Odour Assessment including dispersion modelling of the Tintwistle Sewage Treatment Works in order to determine suitability of adjacent land for residential use

St Nicholas Circle, Leicester - Air Quality Assessment including dispersion modelling of road traffic sources to determine suitability of the site for student accommodation.

Land East and West of A140, Long Stratton - Air Quality EIA for a large scale residential development.

Meadley Square, Knaresborough - Odour Assessment including site surveys and a risk assessment to determine potential for loss of amenity to future occupants due to adverse odours generated by an adjacent takeaway.

Main Street, Port Rush - Kitchen Odour Impact Assessment in support of a proposed restaurant with residential apartments above

Commercial and Retail

Downtown Grantham Designer Outlet - Air Quality EIA in support the development of a retail outlet

North Acton Road, London - Air Quality Assessment in support of the development of a seven storey building to include a café and commercial floor space.

Great Homer Street, Liverpool - Investigative Odour Survey at an existing McDonalds restaurant.

Ashdown Business Park, Kent - Air Quality Assessment in support of a Premier Inn Hotel and Drive-Thru Costa Coffee.

Sandbrook Park, Rochdale - Air Quality Assessment in support of 14 business/industrial units.

AMELIA LEATHERBARROW-HURST

Principal Air Quality Consultant

BSc (Hons), AMIEnvSc, AMIIAQM, GradIEMA

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KEY EXPERIENCE:

Amelia is a Principal Environmental Consultant with specialist experience in the air quality sector. Her key capabilities include:

- Production of Air Quality Assessments in accordance with Department for Environment, Food and Rural Affairs (DEFRA) methodologies for a range of residential, commercial and industrial sectors.
- Detailed dispersion modelling of road vehicle exhaust emissions using ADMS-Roads. Studies have included assessment of road traffic exhaust emissions on sensitive receptors and exposure of new residents to poor air quality.
- Advanced canyon modelling to evaluate the impact of altered urban topography on air quality in built up areas.
- Assessment of construction dust impacts from a range of development sizes.
- Definition of baseline air quality and identification of sensitive areas across the UK.
- Production of air quality mitigation strategies specifically tailored to address issues at individual sites.
- Air quality monitoring at industrial sites to quantify pollutant concentrations
- Odour surveys to assess amenity and suitability of sites for potential future development for residential use.

SELECT PROJECTS SUMMARY:

Eagle House, South Ruislip

Air Quality Assessment for the change of use from an office block to a hotel in an Air Quality Management Area (AQMA). Concerns were raised regarding the exposure of future occupants to poor air quality due to road traffic emissions. Detailed dispersion modelling was undertaken using ADMS-roads to assess PM_{10} and NO_2 concentrations across the site as well as an Air Quality Neutral Assessment in accordance with the London Plan requirements. Results revealed that pollution levels were below the air quality standards across the development.

Parr Bridge, Tyldesley

Air Quality Assessment to support a residential development of 154 units. Dispersion modelling was undertaken due to the proximity of the site to an AQMA. Using sensitive receptors located in areas where increased road traffic may affect NO_2 levels, a comparison was made between concentrations with and without the development in place. Results indicated the impacts were not significant.

St James's Street, Westminster

Air Quality Assessment in support of a mixed-use development in an AQMA. Dispersion modelling was undertaken at several different heights reflective of residential units within the development. Predicted concentrations of NO_2 were found to exceed air quality criteria from ground to third floor level. As such, mitigation was specified for the affected units to ensure future residents would not be exposed to poor air quality.

Rookery Avenue, Whiteley, Farnborough

Odour Impact Assessment in support of a hot food takeaway with a drive thru facility in Whiteley. The assessment considered a number of factors, including the scale and nature of potential emissions, the location of nearest receptors and the proposed cooking type in accordance with the relevant DEFRA guidance. An appropriate ventilation system was identified and described on the basis of the assessment results.

Hoole Way, Chester

Air Quality Assessment in support an eight-storey student accommodation block to provide circa 373 units on land off Hoole Way, Chester. Concerns had been raised in relation to the potential exposure of future occupants to elevated pollution concentrations. An assessment was therefore undertaken using dispersion modelling in order to quantify air quality conditions across the site. The results revealed that the use of good practice control measures would provide suitable mitigation for the development.

St James Place, Liverpool

Air Quality Assessment in support of a residential-led development located across three different sites in an AQMA on land off St James Place, Liverpool. Detailed dispersion modelling was undertaken with the inclusion of advanced canyon modelling to evaluate the impact of the urban topography within the locality on the dispersion of traffic related pollutants. The results revealed pollutant concentrations were below the relevant standards across the site.

OLLY HANLON

Senior Air Quality Consultant

BSc (Hons), GradIEMA

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KEY EXPERIENCE:

Olly is a Senior Environmental Consultant with specialist experience in the air quality sector. His key capabilities include:

- Production of Air Quality Assessments in accordance with Department for Environment, Food and Rural Affairs (DEFRA) methodologies for a range of residential, commercial and industrial sectors.
- Detailed dispersion modelling of road vehicle exhaust emissions using ADMS-Roads. Studies have included assessment of road traffic exhaust emissions on sensitive receptors and exposure of new residents to poor air quality.
- Detailed dispersion modelling of industrial emission sources using ADMS-5. Studies have included assessment of pollutant concentrations and consideration of associated impacts.
- Assessment of construction dust impacts from a range of development sizes.
- Production of air quality mitigation strategies specifically tailored to address issues at individual sites.
- Definition of baseline air quality and identification of sensitive areas across the UK.
- Air quality monitoring at industrial sites to quantify pollutant concentrations.

SELECT PROJECTS SUMMARY:

Millharbour, Isle of Dogs

Air Quality Assessment for the development of residential units within an Air Quality Management Area (AQMA). Concerns were raised regarding the exposure of future occupants to poor air quality due to road traffic emissions. Detailed dispersion modelling was undertaken using ADMS-roads to assess PM_{10} and NO_2 concentrations across the site. Results identified that pollution levels were below the air quality standards across the development.

Station Road, Howden

Air Quality Assessment in support of a residential development. Using sensitive receptors located in areas where increased road traffic may affect NO_2 concentrations, a comparison was made between overall concentrations with and without the development in place. Results indicated pollutant concentrations were below the relevant standards across the site and impacts associated with the development were not significant.

Honeycombe Beach, Bournemouth

Air Quality Assessment to determine air quality conditions within a covered car park serving a residential complex and evaluate the effectiveness of the existing ventilation system. Monitoring of pollutant concentrations over a three-month period at four locations at the site was undertaken. Internal concentrations of pollutants were below the relevant Work Exposure Limits (WELs) at all locations. As such, natural ventilation was considered to provide adequate control of internal air quality.

Matching Airport, Abbess Roding

Air Quality Assessment in support of a flexible generation facility. Dispersion modelling was undertaken to determine potential changes in pollution levels as a result of emissions from the installation and consider the potential impact at nearby sensitive receptor locations. Predicted concentrations of NO_2 were below the relevant air quality criteria at all locations of relevant exposure across all meteorological data sets modelled. The overall effects of the development were predicted to be not significant in accordance with the stated guidance.

High Road, Wood Green, London

Air Quality Assessment for a residential scheme located in an AQMA. Detailed dispersion modelling was undertaken at several heights reflective of residential units within the development. Results indicated that NO_2 and PM_{10} concentrations were below air quality criteria across the development.

Anlaby Road, Hull

Air Quality Assessment for the development of a six storey hotel and associated infrastructure within an AQMA. Concerns were raised about the exposure of future occupants to elevated pollution concentrations during operation due to road traffic exhaust emissions. Detailed dispersion modelling was undertaken using ADMS-roads to assess PM_{10} and NO_2 concentrations across the site. Results indicated that pollution levels were below the air quality standards across the development.