Air Quality Assessment

Sipson Road, London

Client: Caldecotte Group

Reference: 10583r1

Date: 13th February 2026

Report Issue

Report Title: Air Quality Assessment - Sipson Road, London

Report Reference: 10583

Field	Report Version			
	1	2	3	4
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Date of Issue	13th February 2026			
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Executive Summary

Redmore Environmental Ltd was commissioned by Caldecotte Group to undertake an Air Quality Assessment in support of a residential development on land off Sipson Road, London.

An Air Quality Assessment was undertaken to:

- Assess potential impacts associated with fugitive dust releases during the construction phase of the proposed development;
- Assess potential impacts associated with road transport emissions during the operational phase of the proposed development;
- Assess risk of future resident exposure to any existing air quality issues;
- Provide an Air Quality Neutral Assessment; and,
- Identify any requirement for relevant mitigation measures.

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

Potential impacts during the operational phase of the proposals may occur due to road traffic exhaust emissions associated with vehicles travelling to and from the site. These were assessed using standard screening criteria. Due to the nature of the development, road traffic exhaust impacts were not predicted to be significant.

The potential for exposure of future residents to elevated pollution levels was assessed based on the findings of a desk top study. This indicated that pollutant concentrations are likely to be below the relevant criteria at the development location. As such, the site is considered suitable for the proposed use from an air quality perspective.

Potential emissions from the development were assessed in order to determine compliance with the air quality neutral requirements of the London Plan. This indicated the proposals are classified as Air Quality Neutral.

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 Instruction

1.1.1 Redmore Environmental Ltd was commissioned by Caldecotte Group to undertake an Air Quality Assessment in support of a residential development on land off Sipson Road, London.

1.2 Site Location and Context

1.2.1 The site is located on land to the rear of 395 Sipson Road, London, UB7 0HU, at approximate National Grid Reference (NGR): 507320, 177770. The relevant Local Authority (LA) is London Borough of Hillingdon (LBoH). Reference should be made to Figure 1 for a map of the site and surrounding area.

1.2.2 The proposals comprise the construction of two residential dwellings with associated parking and infrastructure.

1.3 Assessment Scope

1.3.1 The proposals have the potential to cause air quality impacts at sensitive locations. As such, an Air Quality Assessment was undertaken to:

- Assess potential impacts associated with fugitive dust releases during the construction phase of the development;
- Assess potential impacts associated with road transport emissions during the operational phase of the development;
- Assess risk of future resident exposure to any existing air quality issues;
- Provide an Air Quality Neutral Assessment; and,
- Identify any requirement for relevant mitigation measures.

1.3.2 This is detailed in the following report.

2.0 LEGISLATION AND POLICY

2.1 Legislation

2.1.1 The Air Quality Standards Regulations (2010) and subsequent amendments include Air Quality Limit Values (AQLVs) for the following pollutants:

- Nitrogen dioxide (NO_2);
- Sulphur dioxide;
- Lead;
- Particulate matter with an aerodynamic diameter of less than 10µm (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 were also 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 (AQOs). 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 2025[2] was published in December 2025, providing long term and Interim Targets in order to reduce population exposure to $PM_{2.5}$. The Concentration Target for 2040 was adopted in the Environmental Targets (Fine Particulate Matter) (England) Regulations (2023).

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

[2] Environmental Improvement Plan 2025, DEFRA, 2025.

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

Table 1 Air Quality Objectives/ Interim Target/ Concentration Target

Pollutant	Air Quality Objective/ Interim Target/ Concentration Target	
	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
$PM_{2.5}$	10(a)	Annual mean
	10(b)	Annual mean

Note: (a) Interim Target to be achieved by 2030.
(b) Concentration Target to be achieved by 2040.

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. This would be applicable to the proposed development 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. As the development is a hotel, the 24-hour mean and 1-hour mean objectives are applicable 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 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 Air Quality Management Area (AQMA). For each AQMA the LA is required to produce an Air Quality Action Plan, 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 December 2024 and amended in February 2025. The document 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 achievements 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:

[…]

4 NPPF, Ministry of Housing, Communities and Local Government, 2024.

> e) preventing new and existing development from contributing to, or being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality […]"

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

5. When could air quality be relevant to the planning development management process?
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 Regional Planning Policy

2.6.1 The London Plan 2021[6] is the Spatial Development Strategy for Greater London Authority (GLA). 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 at 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 this policy have been considered throughout this Air Quality Assessment.

2.7 Local Planning Policy

2.7.1 The Hillingdon Local Plan comprises two documents. 'A Vision for 2026 Local Plan Part 1: Strategic Policies'[7] was adopted by LBoH in November 2012. A review of the document indicated the following policies of relevance to this report:

> "Policy EM8: Land, Water, Air and Noise
>
> […]
>
> Air Quality
>
> All development should not cause deterioration in the local air quality levels and should ensure the protection of both existing and new sensitive receptors.
>
> […]"

2.7.2 The 'Local Plan Part 2: Development Management Policies'[8] was adopted by LBoH in January 2020. A review of the document indicated the following policies of relevance to this report:

> "Policy DMEI14: Air Quality
>
> A) Development proposals should demonstrate appropriate reductions in emissions to sustain compliance with and contribute towards meeting EU limit values and national air quality objectives for pollutants
>
> B) Development proposals should, as a minimum:
>
> i) be at least 'air quality neutral';

7 A Vision for 2026 Local Plan Part 1: Strategic Policies, LBoH, 2012.

8 Local Plan Part 2: Development Management Policies, LBoH, 2020.

ii) include sufficient mitigation to ensure there is no unacceptable risk from air pollution to sensitive receptors, both existing and new; and,

iii) actively contribute towards the improvement of air quality, especially within the Air Quality Management Area"

"Policy DMT 1: Managing Transport Impacts

A) Development proposals will be required to meet the transport needs of the development and address its transport impacts in a sustainable manner. In order for the developments to be acceptable they are required to:

[…]

v) have no significant adverse transport or associated air quality and noise impacts on the local and wider environment, particularly on the strategic road network

[…]"

"Policy DMT 2: Highways Impacts

Development proposals must ensure that:

[…]

ii) they do not contribute to the deterioration of air quality, noise or local amenity or safety of all road users and residents;

[…]"

2.7.3 The 'LBoH Supplementary Planning Document (SPD): Planning Obligations'[9] was adopted by LBoH in July 2014 to provide guidance on assessing the impact of proposed development on air quality.

[9] LBoH SPD: Planning Obligations, LBoH, 2014.

2.7.4 The implications of the above policies and SPD were taken into consideration throughout the undertaking of the assessment.

3.0 METHODOLOGY

3.1 Introduction

3.1.1 The proposed development has the potential to cause air quality impacts during the construction and operational phases, as well as expose future residents to elevated pollution levels. These factors have been 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. In accordance with the Practice Note[10] produced by the GLA, impacts have been assessed in accordance with the methodology outlined within the Institute of Air Quality Management (IAQM) 'Guidance on the Assessment of Dust from Demolition and Construction V2.2'[11] and the Mayor of London's 'The Control of Dust and Emissions during Construction and Demolition Supplementary Planning Guidance'[12], as relevant.

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

- Earthworks;
- Construction; and,
- Trackout.

3.2.3 The potential for dust emissions was assessed for construction activities 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}.

[10] Practice Note - The Control of Dust and Emissions from Construction and Demolition, GLA, undated.

[11] Guidance on the Assessment of Dust from Demolition and Construction V2.2, IAQM, 2024.

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

3.2.4 The assessment steps are detailed below.

Step 1 - Screen the Need for an Assessment

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 - Assess the Risk of Dust Impacts

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	Earthworks	• Total site area greater than 110,000m^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 6m in height
	Construction	• Total building volume greater than 75,000m^3 • On site concrete batching • Sandblasting
	Trackout	• More than 50 Heavy Duty Vehicle (HDV) trips per day • Potentially dusty surface material (eg. High clay content) • Unpaved road length greater than 100m
Medium	Earthworks	• Total site area 18,000m^2 to 110,000m^2 • Moderately dusty soil type (e.g. silt) • 5 to 10 heavy earth moving vehicles active at any one time • Formation of bunds 3m to 6m in height
	Construction	• Total building volume 12,000m^3 to 75,000m^3 • Potentially dusty construction material (e.g. concrete) • On site concrete batching
	Trackout	• 20 to 50 HDV trips per day • Moderately dusty surface material (e.g. high clay content) • Unpaved road length 50m to 100m
Small	Earthworks	• Total site area less than 18,000m^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 3m in height
	Construction	• Total building volume less than 12,000m^3 • Construction material with low potential for dust release (e.g. metal cladding or timber)
	Trackout	• Less than 20 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 - Sensitivities of People and Ecological Receptors

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
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 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

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

3.2.12 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 350
High	Greater than 32µg/m^3	More than 100	High	High	High	Medium
		10 - 100	High	High	Medium	Low
		1 - 10	High	Medium	Low	Low
	28 - 32µg/m^3	More than 100	High	High	Medium	Low
		10 - 100	High	Medium	Low	Low
		1 - 10	High	Medium	Low	Low
	24 - 28µg/m^3	More than 100	High	Medium	Low	Low
		10 - 100	High	Medium	Low	Low
		1 - 10	Medium	Low	Low	Low
	Less than 24µg/m^3	More than 100	Medium	Low	Low	Low
		10 - 100	Low	Low	Low	Low
		1 - 10	Low	Low	Low	Low
Medium	Greater than 32µg/m^3	More than 10	High	Medium	Low	Low
		1 - 10	Medium	Low	Low	Low
	28 - 32µg/m^3	More than 10	Medium	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 350
		1 - 10	Low	Low	Low	Low
	24 - 28µg/m^3	More than 10	Low	Low	Low	Low
		1 -10	Low	Low	Low	Low
	Less than 24µg/m^3	More than 10	Low	Low	Low	Low
		1 - 10	Low	Low	Low	Low
Low	-	1 or more	Low	Low	Low	Low

3.2.13 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

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

3.2.15 Table 8 outlines the risk category from earthworks, construction and trackout activities.

Table 8 Construction Dust - Dust Risk Category from Earthworks, Construction and Trackout Activities

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

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

Step 3 - Site Specific Mitigation

3.2.16 Step 3 requires the identification of site-specific mitigation measures within the Mayor of London's guidance[13] 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 - Determine Significant Effects

3.2.17 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**.

3.2.18 The determination of significance relies on professional judgement and reasoning should be provided as far as practicable. The Mayor of London's guidance[14] suggests the provision of details of the assessor's qualifications and experience. These are provided in Appendix 1.

3.3 Operational Phase Assessment

Potential Development Impacts

3.3.1 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

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

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

the site during the operational phase. An assessment was therefore undertaken using the criteria contained within the IAQM 'Land-Use Planning & Development Control: Planning for Air Quality'[15] guidance to determine the potential for trips generated by the development to affect local air quality.

3.3.2 The following criteria are provided 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 1,000m^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.

3.3.3 Should these criteria not be met, then the IAQM guidance[16] considers air quality impacts associated with a scheme to be **not significant** and no further assessment is required.

Potential Future Exposure

3.3.4 The proposed development comprises residential units. These are considered locations of relevant exposure for long and short term AQOs in accordance with the advice provided within GLA guidance[17], as summarised in Table 2. The following factors were therefore considered in order to provide an assessment of potential exposure:

- Local monitoring results;
- Pollutant concentration predictions from the London Atmospheric Emissions Inventory (LAEI) inventory; and,

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

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

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

- Site context.

3.3.5 The findings were subsequently used to determine the potential for AQO exceedence at the development location. Should the assessment indicate significant uncertainty over air quality conditions at the site then further quantitative methods, such as detailed dispersion modelling, could be utilised to refine the predictions.

4.0 BASELINE

4.1 Introduction

4.1.1 Existing air quality conditions in the vicinity of the proposed development site 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), LBoH has undertaken Review and Assessment of air quality within its area of jurisdiction. This process has indicated that annual mean NO_2 concentrations are above the AQO within the borough. As such, one AQMA has been declared. This is described as follows:

> "London Borough of Hillingdon AQMA - An area encompassing the area to the south of the railway, covering the southern half of the borough."

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

4.2.3 LBoH has 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 Focus Areas

4.3.1 Air Quality Focus Areas (AQFAs) have been designated throughout London in locations where the annual mean AQO for NO_2 is exceeded and there is a high level of human exposure. They were defined to address concerns raised by boroughs within the LAQM review process and forecasted air pollution trends.

4.3.2 Review of the LAEI[18] indicated that the development is located within an AQFA. This covers the Heathrow Area (ID: 81). This has been considered throughout the assessment.

4.4 Air Quality Monitoring

4.4.1 Monitoring of pollutant concentrations is undertaken by LBoH throughout its area of jurisdiction. Recent annual mean NO_2 results recorded in the vicinity of the development were obtained from LBoH's 'Air Quality Annual Status Report 2025'[19] and are detailed in Table 9.

Table 9 Monitoring Results - Annual Mean NO_2

Monitoring Site		Annual Mean NO_2 Concentration (µg/m³)		
		2022	2023	2024
HILL40	On zone sign at corner of Sipson Close/ Sipson Road. UB7 0JX	26.6	27.8	24.1
SIPS	Hillingdon Sipson	24.0	23.0	22.0

4.4.2 As shown in Table 9, annual mean NO_2 concentrations were below the AQO of 40µg/m³ at both monitors in recent years. Reference should be made to Figure 2 for a map of the survey positions.

4.4.3 Recent 1-hour mean NO_2 results recorded in the vicinity of the development are shown in Table 10.

Table 10 1-hour Mean NO_2 Monitoring Result

Monitoring Site		Number of 1-hour Mean NO_2 Concentrations Greater than 200µg/m³		
		2022	2023	2024
SIPS	Hillingdon Sipson	0	0	0

[18] https://data.london.gov.uk/dataset/london-atmospheric-emissions-inventory--laei--2019-air-quality-focus-areas.

[19] LBoH Air Quality Annual Status Report 2025, LBoH, 2025.

4.4.4 As shown in Table 10, the number of 1-hour mean NO_2 concentrations above 200µg/m^3 was below the permitted number of 18 at the SIPS monitor during recent years.

4.4.5 LBoH do not undertake monitoring of PM_{10} and $PM_{2.5}$ concentrations within the vicinity of the site.

4.5 Background Pollutant Concentrations

4.5.1 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: 507500, 177500. Data for this location was downloaded from the DEFRA website[20] for the purpose of the assessment and is summarised in Table 11.

Table 11 Background Pollutant Concentration Predictions

Pollutant	Predicted 2026 Background Pollutant Concentration (µg/m^3)
NO_2	20.09
PM_{10}	13.62
$PM_{2.5}$	7.83

4.5.2 As shown in Table 11, predicted background NO_2, PM_{10} and $PM_{2.5}$ concentrations are below the relevant AQOs and Concentration Target at the development site.

4.6 London Atmospheric Emissions Inventory

4.6.1 The LAEI[21] was produced by the GLA and provides estimates of NO_2, PM_{10} and $PM_{2.5}$ concentrations across Greater London. A review of the inventory was undertaken to determine predicted pollutant levels across the site. This is summarised in Table 12.

20 http://uk-air.defra.gov.uk/data/laqm-background-maps?year=2021.

21 https://data.london.gov.uk/dataset/london-atmospheric-emissions-inventory--laei--2022.

Table 12 LAEI Predicted Pollutant Levels at the Development Site

Pollutant	Averaging Period	Predicted Range	Unit
NO_2	Annual mean	22 to 26	µg/m^3
PM_{10}	Annual mean	10 to 14	µg/m^3
	24-hour mean	2 to 4	Days above 50µg/m^3
$PM_{2.5}$	Annual mean	8 to 9	µg/m^3

4.6.2 As shown in Table 12, predicted NO_2, PM_{10} and $PM_{2.5}$ concentrations from the LAEI are below the relevant AQOs and Concentration Target at the proposed development. Reference should be made to Figures 3 to 6 for maps of predicted pollutant levels in the vicinity of the site.

4.7 Sensitive Receptors

4.7.1 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 construction were identified from a desk-top study of the area up to 350m from the development boundary. These are summarised in Table 13.

Table 13 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	-

4.7.2 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 14.

Table 14 Trackout 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

4.7.3 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.

4.7.4 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 Lady Nafisa Secondary School for Girls and residential properties.

5.0 CONSTRUCTION PHASE ASSESSMENT

5.1 Introduction

5.1.1 There is the potential for air quality impacts as a result of the construction of the proposed development. These are assessed in the following Sections.

5.2 Step 1 - Screen the Need for an Assessment

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

5.3 Step 2a - Define the Potential Dust Emission Magnitude

Earthworks

5.3.1 Earthworks will primarily involve excavating material, haulage, tipping and stockpiling, as well as site levelling and landscaping. The area of the site is less than 18,000m^2. In accordance with the criteria outlined in Table 3, the magnitude of potential dust emissions from earthworks is therefore **small**.

Construction

5.3.2 The total building volume to be constructed will be less than 12,000m^3. In accordance with the criteria outlined in Table 3, the magnitude of potential dust emissions from construction is therefore **small**.

Trackout

5.3.3 Based on the site area and access routes comprising tarmacked surfaces, 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**.

5.4 Step 2b - Define the Sensitivity of the Area

Dust Soiling

5.4.1 Table 13 shows that there are more than 100 **high** sensitivity receptors within 20m of the site boundary. The sensitivity of the area with respect to dust soiling from earthworks and construction, as defined using the criteria summarised in Table 5, is therefore considered to be **high**.

5.4.2 Table 14 shows that there are more than 100 **high** sensitivity receptors within 20m of the road network within 500m of the site access. The sensitivity of the area with respect to dust soiling from trackout, as defined using the criteria summarised in Table 5, is therefore considered **high**.

Human Health

5.4.3 Table 11 shows the annual mean PM_{10} background concentration at the site is 13.62µg/m^3. As shown in Table 6, where the background annual mean PM_{10} concentration is below 24µg/m^3 and there are more than 100 **high** sensitivity receptors within 20m of the site boundary, the sensitivity of the area with respect to human health from earthworks and construction is considered to be **medium**.

5.4.4 There are more than 100 **high** sensitivity receptors within 20m of the road network within 500m of the site access. The sensitivity of the area with respect to human health from trackout as defined using the criteria summarised in Table 6, is therefore considered to be **medium**.

5.5 Step 2c - Define the Risk of Dust Impacts

5.5.1 The derived dust emission magnitude for each activity has been combined with the sensitivity of the area to determine the risk of unmitigated impacts in line with the methodology out in Table 8. A summary of the risk from dust generating activity is provided in Table 15.

Table 15 Summary of Potential Unmitigated Dust Risks

Potential Impact	Activity	Step 2A - Dust Emission Magnitude	Step 2B - Sensitivity of the Area	Step 2C - Risk
Dust Soiling	Earthworks	Small	High	Low
	Construction	Small	High	Low
	Trackout	Small	High	Low
Human Health	Earthworks	Small	Medium	Low
	Construction	Small	Medium	Low
	Trackout	Small	Medium	Low

5.5.2 As indicated in Table 15, the potential risk of dust soiling and human health impacts is **low** from all activities.

5.5.3 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.

5.6 Step 3 - Site-specific Mitigation

5.6.1 The Mayor of London's guidance[22] 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 16. These may be

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

reviewed prior to the commencement of construction works and incorporated into a Construction Environmental Management Plan or similar if required by the LA.

Table 16 Fugitive Dust Emission Mitigation Measures

Issue	Control Measure
Communications	• Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager • Display the head or regional office contact information
Site management	• Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken • Make the complaints log available to the LA upon request • Record any exceptional incidents that cause dust and/ or air emissions, either on- or off- site, and the action taken to resolve the situation in the log book
Monitoring	• Carry out regular site inspections, record inspection results, and make an inspection log available to the LA when asked • Increase the frequency of site inspections when activities with a high potential to produce dust are being carried out, and during prolonged dry or windy conditions
Site Preparation	• Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible • 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
Operating vehicle/machinery and sustainable travel	• Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone • Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable
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	• Avoid bonfires and burning of waste materials
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

Issue	Control Measure
Trackout	• Regularly use a water-assisted dust sweeper on the access and local roads, as necessary, to remove any material tracked out of the site • Avoid dry sweeping of large areas • Ensure vehicles entering and leaving sites are securely covered to prevent escape of materials during transport

5.7 Step 4 - Determine Significant Effects

5.7.1 Assuming the relevant mitigation measures outlined in Table 16 are implemented, the residual impact from all dust generating activities is predicted to be **not significant**, in accordance with the Mayor of London's guidance[23].

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

6.0 OPERATIONAL PHASE ASSESSMENT

6.1 Introduction

6.1.1 There is the potential for air quality impacts as a result of the operation of the proposed development. These are assessed in the following Sections.

6.2 Potential Development Impacts

6.2.1 Any vehicle movements associated with the development will generate exhaust emissions on the local and regional road networks. The proposals have therefore been assessed against the IAQM screening criteria[24] detailed in Section 3.3. The proposals are for less than 10 residential units. As such, air quality impacts associated with the operational phase of the scheme are predicted to be **not significant**.

6.3 Potential Future Exposure

6.3.1 Residential land use is considered sensitive to elevated long-term and short-term pollutant concentrations. As such, the proposed development has the potential to introduce new receptors into an area of poor air quality. Existing conditions within the vicinity of the site have therefore been considered.

6.3.2 As outlined in Table 9, LBoH undertook monitoring of NO_2 concentrations at two locations in the vicinity of the site during 2024. The annual mean NO_2 concentration was below the AQO of 40µg/m^3 at both monitoring locations. Site HILL40 is located approximately 180m south of the development, adjacent to the A408 Sipson Road. As the proposal is also adjacent to the A408 Sipson Road, a similar level of traffic and associated road vehicle exhaust emissions would be anticipated. The annual mean NO_2 concentration at monitor HILL40 was 24.2µg/m^3 during 2024. As such, it is anticipated that pollutant concentrations would also be below the long-term AQO at the development.

6.3.3 As stated in DEFRA guidance[25], if annual mean NO_2 concentrations are below 60µg/m^3 then it is unlikely that the 1-hour mean AQO will be exceeded. As such, it is predicted that

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

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

pollutant concentrations would also be below the short-term AQO of NO_2 at the development.

6.3.4 As outlined in Table 12, predicted NO_2, PM_{10} and $PM_{2.5}$ levels from the LAEI are also below the relevant long- and short- term AQOs and Concentration Target across the site. As such, exceedences of these criteria are considered unlikely at the development.

6.3.5 Based on the above, exceedences of the relevant long- and short-term AQOs or Concentration Target are not considered likely at the Proposed Development. As such, the site is considered suitable for the proposed end use.

6.4 Interim Planning Guidance for $PM_{2.5}$

6.4.1 Interim Planning Guidance[26] on the consideration of the $PM_{2.5}$ targets identified in the Environment Act (2021) in planning decisions has been produced by DEFRA. This requires evidence that the key sources of air pollution within a development have been identified and appropriate action to minimise emissions of $PM_{2.5}$ and its precursors as far as is reasonably practicable be provided in support of planning applications. To assist the process, two questions and associated considerations are provided. These are summarised in Table 17, along with the development response.

[26] https://uk-air.defra.gov.uk/pm25targets/planning.

Table 17 Interim Planning Guidance Questions

Question	Response
How has exposure to $PM_{2.5}$ been considered when selecting the development site? Factors to consider include: • Site proximity to people (particularly large populations and/or vulnerable groups, e.g. schools, hospitals, care homes, areas of deprivation) and the impact on these • Site proximity to pollution sources and the impact of these on users of the development • Exposure and emissions during both construction and in-use	The site is located in Sipson, bordered by residential properties to the north and south, woodland to the east and the A408 Sipson Road to the west. As such, the scheme is in close proximity to a large population. However, as outlined in Section 6.2, air quality impacts from the site are predicted to be **not significant** The main pollution source of concern to the site is the A408 Sipson Road. However, as shown in Section 6.3, predicted $PM_{2.5}$ levels are below the Concentration Target of 10µg/m^3 across the development As outlined in Table 16, a number of mitigation measures will be used throughout the construction phase in order to reduce fugitive dust emissions as far as practicable. This will control potential exposure at off-site locations
What actions and/or mitigations have been considered to reduce $PM_{2.5}$ exposure for development users and nearby receptors and to reduce emissions of $PM_{2.5}$ and its precursors Factors to consider include: • Site layout • The development's design • Technology used in the construction or installed for use in the development • Construction and future use of the development	In order to reduce emissions of $PM_{2.5}$ with associated impacts at nearby receptors and on site, the following measures have been included within the scheme: • The development will lead to a decrease in car parking spaces. This will reduce the reliance on private vehicles • Provision of secure cycle parking to encourage the use of sustainable transport mode • The site is located approximately 60m from the nearest bus stop on Sipson Road. This will encourage sustaibale modes of travel Further to the above, in order to reduce emissions during the construction phase, a number of mitigation measures will be used to minimise dust generation from associated activities

6.4.2 Based on the responses provided in Table 17 and the results of the assessment, as outlined in Sections 5.7, 6.2 and 6.3, it is considered that the development has identified key sources of air pollution and taken appropriate action to minimise emissions of $PM_{2.5}$.

7.0 AIR QUALITY NEUTRAL ASSESSMENT

7.1 Introduction

7.1.1 The London Plan[27] 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 the policy, guidance[28] has been produced by the GLA. The document provides a methodology for determining potential emissions from a development and benchmark values for comparison purposes.

7.1.2 There are two sets of benchmarks which cover the main sources of air pollution from new developments. These are:

- Building Emissions Benchmark (BEB) - emissions from equipment used to supply heat and energy to the buildings; and,
- Transport Emissions Benchmark (TEB) - emissions from private vehicles travelling to and from the development.

7.1.3 A development must meet both benchmarks separately in order to be Air Quality Neutral. Where one or both benchmarks are exceeded, appropriate action is required, either by on-site mitigation measures or by way of off-setting.

7.1.4 The Air Quality Neutral Assessment for the proposed development is provided in the following Sections.

7.2 Building Emissions

7.2.1 The guidance[29] indicates that minor developments can be assumed to meet the BEB in the following instances:

- The new heating system is a heat pump or other zero-emission heat source;

27 The London Plan - The Spatial Development Strategy for Greater London, GLA, 2021.

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

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

- The new heating system includes one or more individual gas boilers with NO_x emissions rated at less than 40mg/kWh; and,
- The development is connecting to an existing heat network.

7.2.2 It is confirmed that heating and hot water will be provided by individual gas boilers with NO_x emissions rated less than 40mg/kWh. As such, the Proposed Development is considered to be air quality neutral from a buildings emissions perspective.

7.3 Transport Emissions

7.3.1 The guidance[30] states the following in relation to the TEB:

> "Developments, including major developments, that do not include additional emissions sources are assumed to be Air Quality Neutral and to meet the Air Quality Neutral benchmarks. […] This would include, for example, developments that have no additional motor vehicle parking […]."

7.3.2 The proposals include two car parking spaces, whilst the existing site includes 19 car parking spaces. Therefore, the proposals result in a reduction of 17 car parking spaces. As such, it does not include additional provision of motor vehicle parking. Therefore, the proposals are considered to be air quality neutral from a transport emissions perspective and no further mitigation is required.

7.4 Summary

7.4.1 Potential emissions from the development were assessed in order to determine compliance with the air quality neutral requirements of the London Plan. This indicated the proposals are classified as Air Quality Neutral.

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

8.0 CONCLUSION

8.1.1 Redmore Environmental Ltd was commissioned by Caldecotte Group to undertake an Air Quality Assessment in support of a residential development on land off Sipson Road, London.

8.1.2 The development has the potential to cause air quality impacts at sensitive locations during the construction and operational phases. As such, an Air Quality Assessment was undertaken in order to determine baseline conditions and consider potential effects as a result of the proposals.

8.1.3 During the construction phase of the development there is the potential for air quality impacts from fugitive dust emissions from the site. These were assessed in accordance with guidance from the IAQM[31] and Mayor of London[32]. Site-specific dust control measures were subsequently determined based on the identified risk ratings. Subject to implementation, residual air quality impacts from dust generated by earthworks, construction and trackout activities are predicted to be **not significant**.

8.1.4 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 document[33]. Due to the nature of the development, road traffic exhaust impacts were predicted to be **not significant**.

8.1.5 The potential for exposure of future residents to exceedences of the AQOs and Concentration Target was assessed based on local monitoring results, LAEI concentrations and site context. This indicated that concentrations of NO_2, PM_{10} and $PM_{2.5}$ are likely to be below the relevant AQOs and Concentration Target at the development location. As such, the site is considered suitable for the proposed use from an air quality perspective.

31 Guidance on the Assessment of Dust from Demolition and Construction V2.2, IAQM, 2024.

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

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

8.1.6 Potential emissions from the development were assessed in order to determine compliance with the air quality neutral requirements of the London Plan. This indicated the proposals are classified as Air Quality Neutral.

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

9.0 ABBREVIATIONS

AQLV	Air Quality Limit Value
AQFA	Air Quality Focus Area
AQMA	Air Quality Management Area
AQO	Air Quality Objective
AQS	Air Quality Strategy
BEB	Building Emissions Benchmark
DEFRA	Department for Environment, Food and Rural Affairs
GLA	Greater London Authority
HDV	Heavy Duty Vehicle
IAQM	Institute of Air Quality Management
LA	Local Authority
LAEI	London Atmospheric Emissions Inventory
LAQM	Local Air Quality Management
LBoH	London Borough of Hillingdon
NGR	National Grid Reference
NO_2	Nitrogen dioxide
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
SPD	Supplementary Planning Guidance
TEB	Transport Emissions Benchmark

Figures

Legend

Site Boundary

Title
Figure 1 - Site Location Plan

Project
Air Quality Assessment
Sipson Road, London

Project Reference
10583

Client
Caldecotte Group

Redmore environmental
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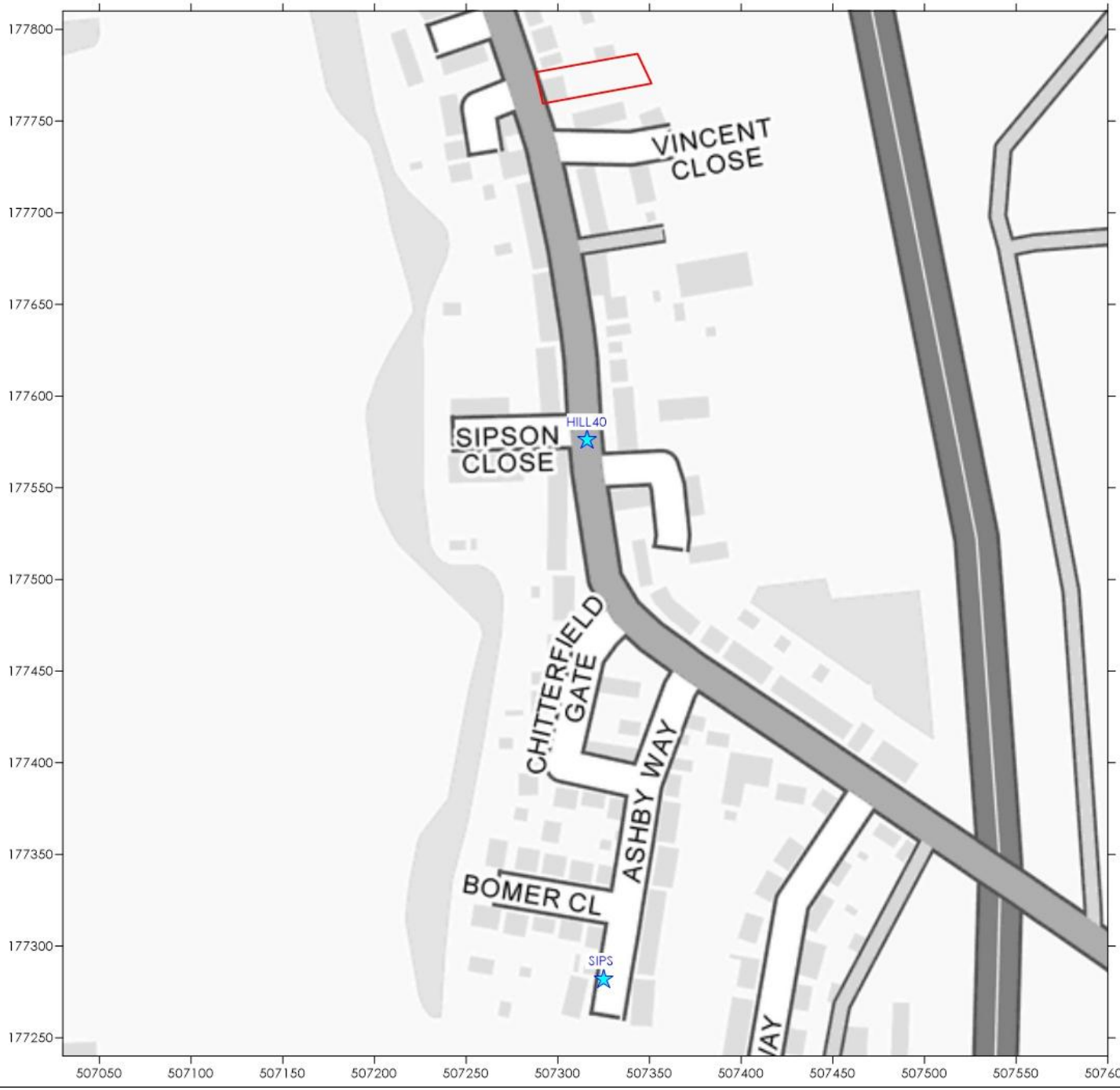

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Site Boundary

Monitor

Title
Figure 2 - Monitoring Locations

Project
Air Quality Assessment
Sipson Road, London

Project Reference
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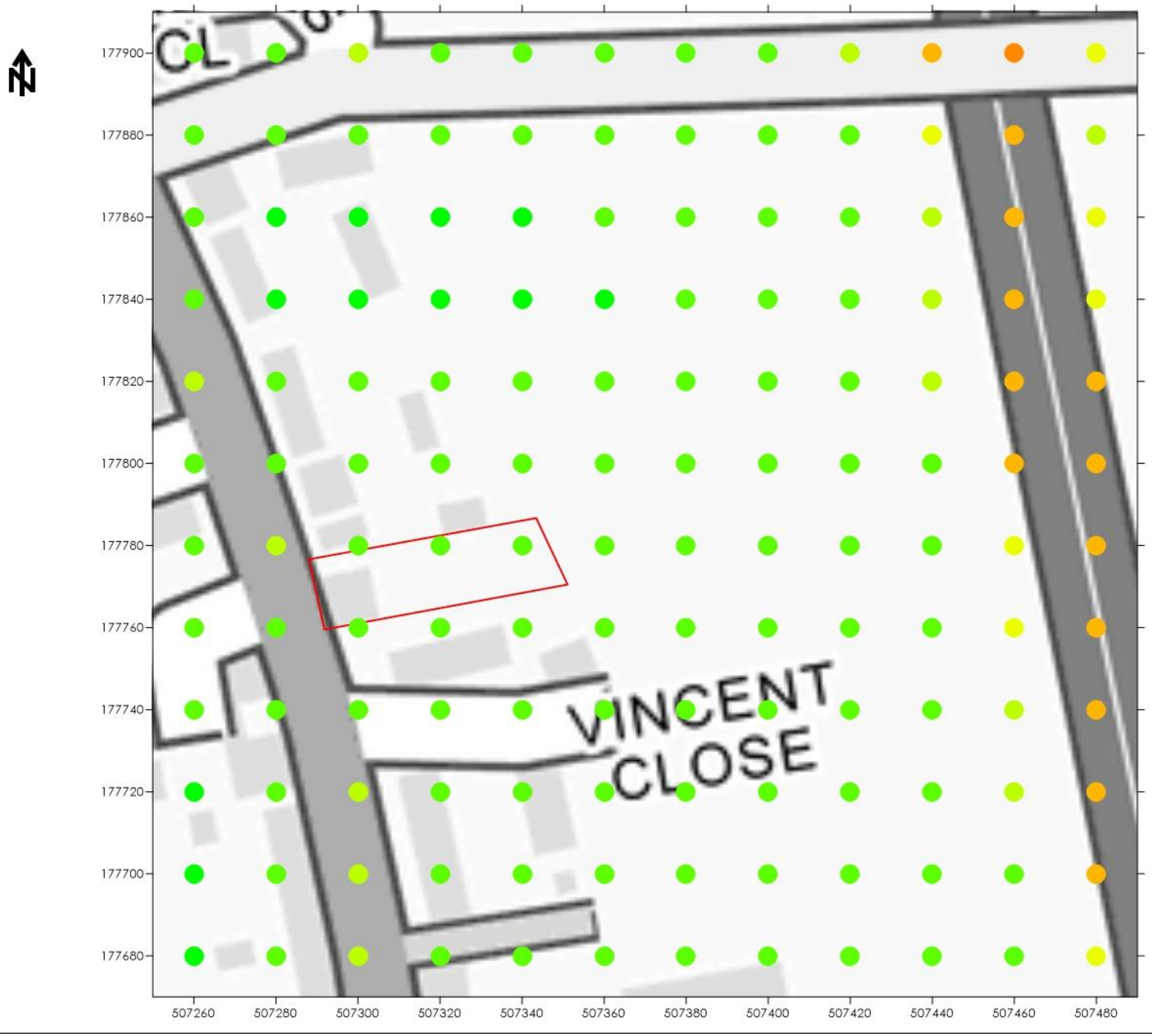

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Site Boundary

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

- 22 to 24
- 24 to 26
- 26 to 28
- 28 to 30
- 30 to 32
- 32 to 34
- 34 to 36
- 36 to 38

Title

Figure 3 - LAEI Annual Mean NO_2 Concentration Estimates ($\mu g/m^3$)

Project

Air Quality Assessment
Sipson Road, London

Project Reference

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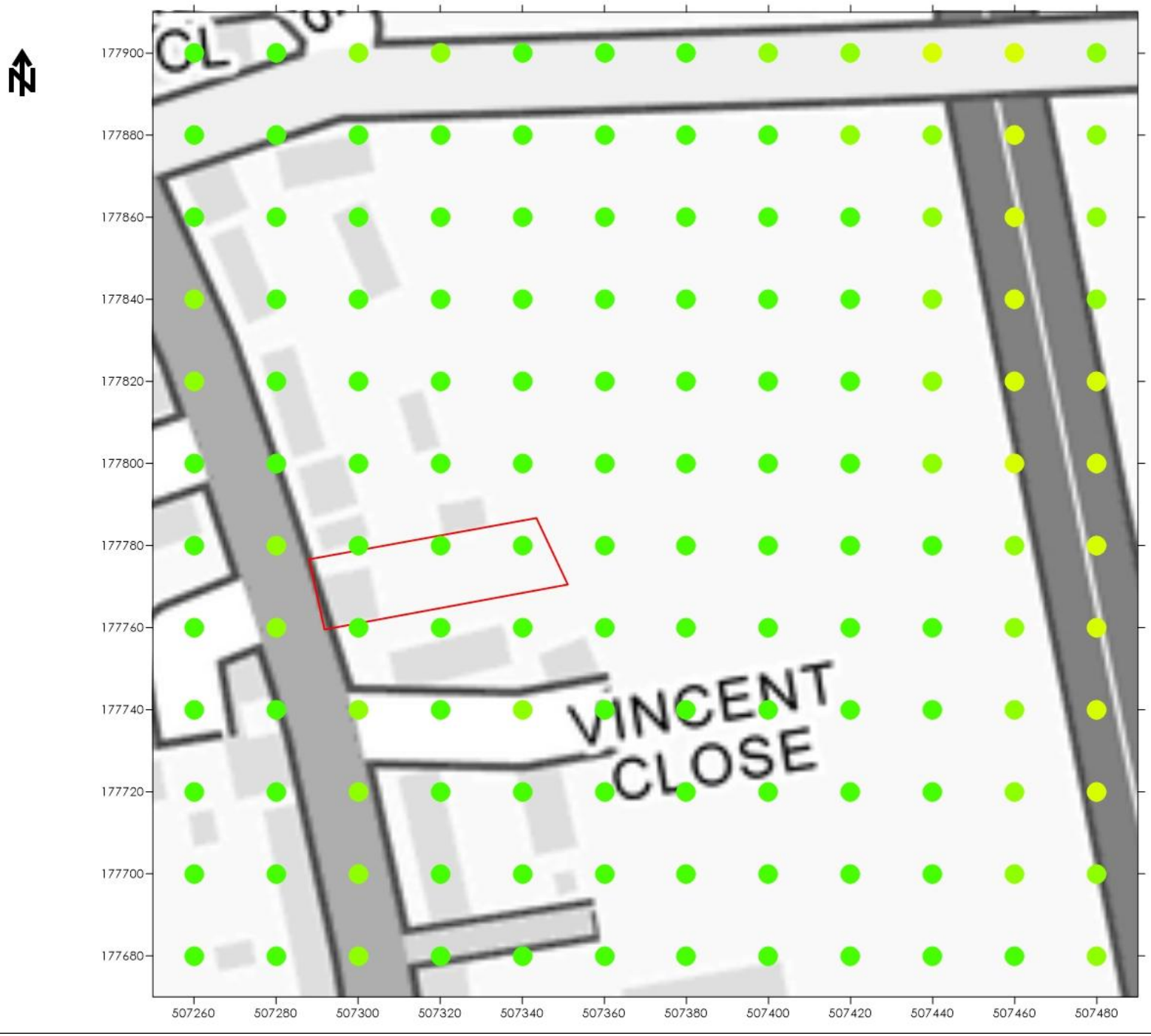

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Site Boundary

Annual Mean PM_{10} Concentrations ($\mu g/m^3$)
10 to 12
12 to 14
14 to 16
16 to 18
18 to 20
20 to 22
22 to 24
24 to 26

Title
Figure 4 - LAEI Annual Mean PM_{10} Concentration Estimates ($\mu g/m^3$)

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Legend

Site Boundary

0 to 2	Number of Days with PM_{10} Concentrations Greater than 50µg/m³
2 to 4	
4 to 6	
6 to 8	
8 to 10	
10 to 12	

Title
Figure 5 - LAEI Number of Days with PM_{10} Concentrations Greater than 50µg/m³ Estimates

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Sipson Road, London

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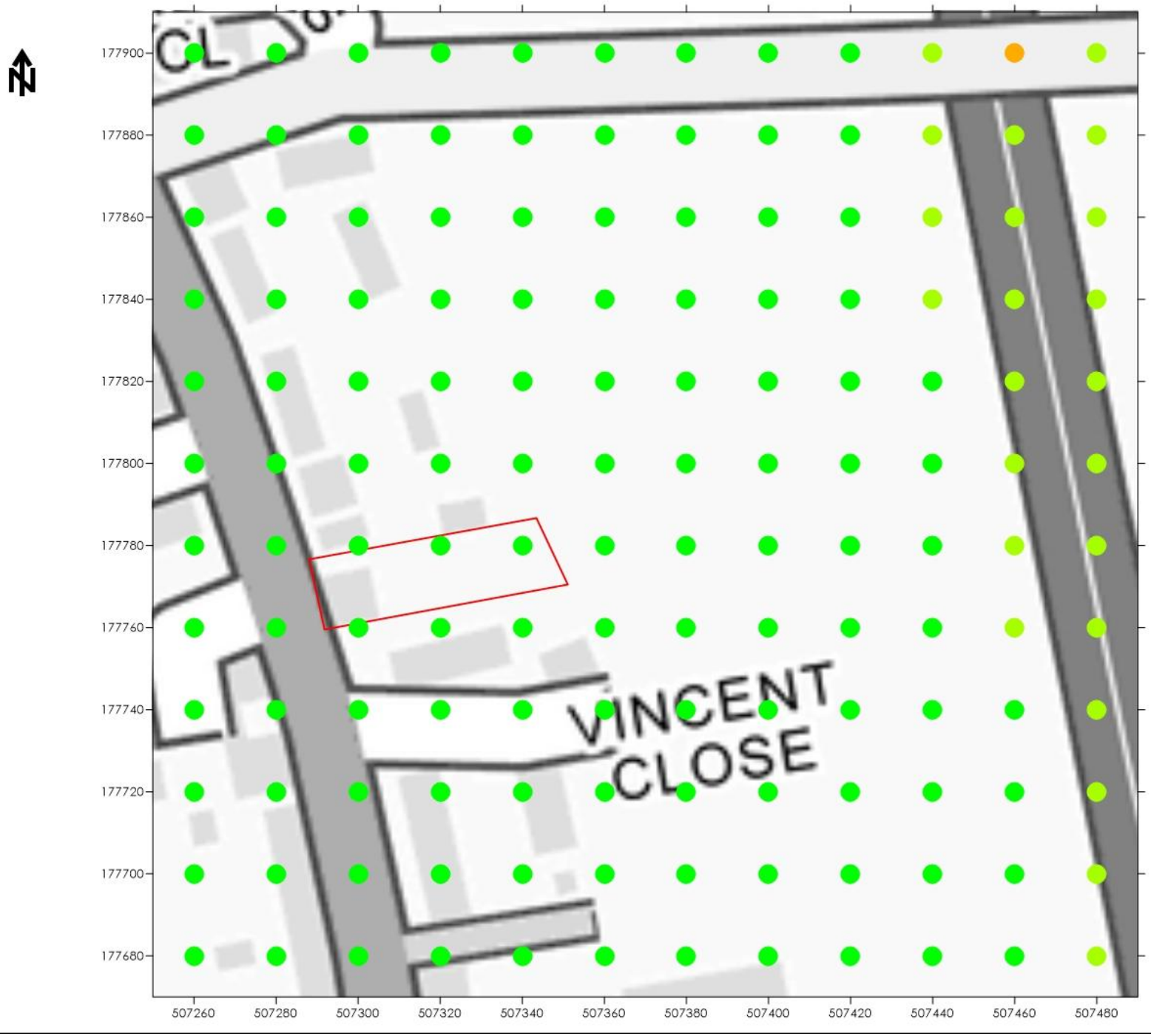

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Site Boundary

8 to 9	Annual Mean $PM_{2.5}$ Concentrations ($\mu g/m^3$)
9 to 10	
10 to 11	
11 to 12	

Title
Figure 6 - LAEI Annual Mean $PM_{2.5}$ Concentration Estimates ($\mu g/m^3$)

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Air Quality Assessment
Sipson Road, London

Project Reference
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Appendix 1 - Curricula Vitae

JETHRO REDMORE

Director

BEng (Hons), MSc, MIAQM, MIEnvSc, PISEP, 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-6, 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

Shanks Waste Management - Odour Assessments of two waste management facilities to support Environmental Permit Applications.

Tatweer Petroleum - dispersion modelling of Bahrain oil field.

Doha South Sewage Treatment Works - AQA for works extension in Qatar.

IRIS Environmental Appraisal Report Reviews, Isle of Man Government - odour assessment reviews.

Lankem, Greater Manchester - Environmental Permit Application for chemical manufacturing plant.

Newport Docks Bulk Drying, Pelleting and CHP Facility - air quality EIA for gas CHP.

Springshades, Leicester - Environmental Permit Variation Application for textile manufacturing plant.

Valspar, Chester - Odour Assessment and production of Odour Management Plan for a paint manufacturing plant in response to neighbour complaints.

Agrivert - dispersion modelling of odour and CHP emissions from numerous AD plants.

James Cropper Paper Mill, Cumbria - air quality EIA, Environmental Permit Variation and Human Health Risk Assessment for new biomass boiler adjacent to SSSI.

Rigg Approach, Leyton - Air Quality Assessment in support of waste transfer site.

Lynchford Lane Waste Transfer Station - biomass facility energy recovery plant.

Barnes Wallis Heat and Power, Cobham - biomass facility adjacent to AQMA.

Residential

Wood St Mill, Bury - residential development adjacent to scrap metal yard.

Hyams Lane, Holbrook - Odour Assessment to support residential development adjacent to sewage works.

North Wharf Gardens, London - peer review of EIA undertaken for large residential development.

Loxford Road, Alford - Air Quality EIA for residential development, included consideration of impacts from associated package sewage works

Elephant and Castle Leisure Centre - baseline AQA for redevelopment.

Carr Lodge, Doncaster - EIA for large residential development.

Queensland Road, Highbury - residential scheme including CHP.

Bicester Ecotown - dispersion modelling of energy centre.

Castleford Growth Delivery Plan - baseline air quality constraints assessment for town redevelopment.

York St, Bury - residential development adjacent to AQMA.

Temple Point Leeds - residential development adjacent to M1.

Commercial and Retail

Etihad Stadium - Air Quality EIA for the extension to the capacity of the Etihad Stadium, Manchester.

Wakefield College - redevelopment of city centre campus in AQMA.

Manchester Airport Cargo Shed - commercial development.

Manchester Airport Apron Extension - EIA including aircraft emission modelling.

National Youth Theatre, Islington - redevelopment to provide new arts space and accommodation.

CHARLOTTE JONES

Graduate Air Quality Consultant

BSc (Hons)

Tel: 0161 706 0075 | Email: charlotte.jones@red-env.co.uk

KEY EXPERIENCE:

Charlotte is a Graduate 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 Neutral Assessments in accordance with The London Plan.
- Odour surveys and risk assessments to assess amenity and suitability of sites for potential future development for residential use.

SELECT PROJECTS SUMMARY:

Stretford Memorial Hospital, Stretford

Air Quality Assessment in support of the demolition of the former Stretford Memorial Hospital and construction of 29 residential dwellings alongside car parking and associated infrastructure. The site was located adjacent to an Air Quality Management Area (AQMA) therefore there was concern that there could be potential impacts due to vehicle movements as a result of the site within this sensitive area as well as exposure of future occupants to poor air quality due to traffic emissions. Results indicated that potential impacts were predicted to be not significant and the site was considered suitable for the proposed end use.

River Road, Barking

Air Quality Assessment and Air Quality Neutral Assessment in support of an industrial development to provide a temporary contractors yard. A Fugitive Dust Emissions Assessment was required to determine potential impacts of operational phase fugitive dust emissions. Dispersion modelling of road vehicle exhaust emissions was also undertaken in support of the scheme. The site was concluded to be Air Quality Neutral in accordance with the relevant guidance and the overall impacts of fugitive dust emissions and road vehicle exhaust emissions associated with the site were concluded to be not significant.

Crewe Road, Shavington

An Odour Assessment in support of a residential development with associated access, infrastructure and landscaping works. The development was located in the vicinity of a meat processing facility which may form a source of odour emissions and cause loss of amenity to future residents. A two stage Odour Assessment was undertaken to assess baseline conditions across the site and consider the risk of reduced amenity. Results of the assessment indicated odour effects at the site did not represent a constraint to planning consent.

Land North of Parklands, Waltham Abbey

Air Quality Assessment in support of a residential development comprising 400 dwellings, a local centre and public open space. Detailed dispersion modelling was undertaken to predict pollutant concentrations at sensitive locations as a result of emissions from the highway network both with and without the development in place. Review of the dispersion modelling results indicated that residual impacts due to the operation of the development were considered to be not significant.

Masshouse Lane, Birmingham

Air Quality Assessment in support of a mixed-use development to provide a new part-three, part-six storey building including ground and first floor retail space with a mix of residential dwellings from first to sixth floor, to provide 10 residential units. The site was located within an AQMA therefore there was concern that future occupants could be exposed to existing air quality conditions due to traffic emissions as well as potential impacts to sensitive receptors due to vehicle movements as a result of the proposals. Results revealed negligible impacts at all locations and that pollution levels were below the air quality objectives across the development.