1 & 2 Longwalk Road
Air Quality Assessment

Prepared for:
Royal UK Property Holdings LLP

Date:
October 2026

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EXECUTIVE SUMMARY

Trium Environmental Consulting LLP (Trium) has been appointed to provide an air quality assessment to support the detailed planning for the proposed redevelopment of 1 & 2 Longwalk Road, Hayes, Uxbridge.

The main likely effects on local air quality during demolition and construction relates to dust emissions. A range of mitigation measures to minimise or prevent dust emissions would be implemented throughout construction to ensure effects would be not significant.

Demolition and construction traffic logistics would be agreed with London Borough of Hillingdon and with the implementation of a range of appropriate management practices, the effects associated with demolition and construction vehicles would be not significant.

The atmospheric dispersion model ADMS-Roads was used to predict the impact of the Proposed Development on human receptors. Following completion, the Proposed Development is predicted to have a negligible impact on pollutant concentrations at all existing receptors considered. The effect of the Proposed Development was considered to be not significant.

The Proposed Development is air quality neutral.

INTRODUCTION

1 Trium Environmental Consulting LLP (Trium) has been instructed by Royal UK Property Holdings LLP RE to undertake an air quality assessment in relation to the redevelopment of land at 1 Longwalk Road, Hayes, Uxbridge UB11 1DB and 2 Longwalk Road, Hayes, Uxbridge UB11 1BA. The site is located within the administrative boundary of the London Borough of Hillingdon (LBH).

The Proposed Development

2 The proposals comprise redevelopment of the site to provide new industrial, storage and distribution space with associated uses hereafter referred to as the 'Proposed Development'.

Consultation

3 Consultation was undertaken through the EIA Screening process. The LBH EIA Screening Opinion, stated '*The proposed site is within Hillingdon's Air Quality Management Area (AQMA). As such, the full application would need to be supported by an Air Quality Assessment accounting for the nature of the use and associated traffic generation. This is considered sufficient to assess the scope of impact in terms of air quality and submission of an EIA would not be required to address this matter*'.

4 The EIA Screening Opinion noted '*The submission identifies the Travelodge and dwellings on Emden Close as being the nearby sensitive receptors*'. These receptors have been included within the assessment. No other comments were made by LBH regarding the proposed methodology set out in the EIA Screening Request Report, prepared by Trium dated 17 April 2026.

Context

5 An Air Quality Management Area (AQMA) is an area where there is public exposure to pollutant concentrations that exceed the National Air Quality Objectives (AQOs)[1]. LBH have designated an AQMA for exceedances of the annual mean nitrogen dioxide (NO_2) AQO. The AQMA covers '*the area from the southern boundary north to the border defined by, the A40 corridor from the western borough boundary, east to the intersection with the Yeading Brook north until its intersection with the Chiltern-Marylebone railway line'*.

6 Air Quality Focus Areas (AQFAs), designated by the Greater London Authority (GLA)[2], are locations with high human exposure that exceed the EU Limit Value for annual mean NO_2 (40µg/m^3). The site is not within any AQFA. The closest AQFA's are the '*M4 Focus Area'*, *'West Drayton / Yiewsley'* and *'Hayes'* AQFA's all located approximately 1.3km from the site.

7 The most significant pollutant during demolition and construction relates to the creation of nuisance dust and construction vehicles emissions. A qualitative assessment has been undertaken based on relevant air quality guidance.

8 With regards to the operational phase, the Environmental Protection UK and Institute of Air Quality Management planning development guidance[3] (EPUK/IAQM guidance), sets out criteria for when an air quality assessment is required to accompany a planning application.

9 The EPUK/IAQM guidance[3] states an air quality assessment is required if there is a change of:

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[1] Department for Environment, Food & Rural Affairs. 2025. UK Air Quality Limits - National air quality objectives and European Directive limit and target values for the protection of human health. Available at: https://uk-air.defra.gov.uk/assets/documents/Air_Quality_Objectives_Update_20230403.pdf

[2] Mayor of London. 2026. London Assembly Air Quality Focus Areas. Available at: https://www.london.gov.uk/who-we-are/what-london-assembly-does/questions-mayor/find-an-answer/air-quality-focus-areas

[3] Environmental Protection UK & Institute of Air Quality Management (2017), 'Land-Use Planning & Development Control: Planning for Air Quality', EPUK & IAQM, London

- More than 100 Light Duty Vehicles (LDV's) flows in Annual Average Daily Traffic (AADT) within or adjacent to an AQMA or more than 500 AADT elsewhere;
- More than 25 Heavy Duty Vehicles (HDV's) flows AADT within or adjacent to an AQMA or more than 100 AADT elsewhere; or
- Combustion plant where the single or combined NO_x emission rate exceeds 5mg/sec.

10 The project transport consultants, Mode Transport Planning, have confirmed the Proposed Development would result in a change of more than 25 HDVs AADT on local roads with relevant receptors during operation of the Proposed Development. As such, operational road traffic emissions have been quantitively assessed using dispersion modelling within this assessment.

Scope of Assessment

11 This report characterises existing air quality within the study area and assesses the effects of the Proposed Development during both demolition and construction, and operation on local air quality in the surrounding area.

12 This assessment is supported by **Appendix A**: Modelling Methodology.

LEGISLATION, POLICY, GUIDANCE & AIR QUALITY OBJECTIVES

13 The following legislation, planning policy and guidance are considered relevant to this air quality assessment.

National Planning Policy Framework, 2026

14 The National Planning Policy Framework (NPPF)[4], published in August 2026 sets out the Government's planning policies for England and how these should be applied.

15 Reference to air quality is made in *Plan-making policy 3 'Living conditions and pollution* (P3) within *Chapter 17 Pollution, public protection and security*.

16 Policy P3 requires development proposals to be appropriate for their location, taking account of the effects of existing and development-generated pollution, including cumulative effects, on health, living conditions and the natural environment. Consideration should be given to the sensitivity of future occupiers and users, surrounding populations and the environment, including groups particularly vulnerable to pollution.

17 In relation to air quality, Policy P3 requires development proposals to:

- Avoid exposing occupiers and users to unacceptable pollution levels, incorporating mitigation where necessary;
- Avoid causing or contributing to unacceptable pollution on or beyond the site, mitigate adverse impacts to an acceptable level and, where possible, reduce pollution in the wider area; and
- Sustain and contribute to compliance with relevant air pollutant limit values, national objectives and targets, including those for $PM_{2.5}$, taking account of Air Quality Management Areas and ensuring consistency with the objectives of relevant Air Quality Action Plans, Clean Air Plans and Local Air Quality Strategies.

London Plan

18 The Mayor of London's London Plan[5] will run to 2041 to provide a longer-term view of London's development to inform decision making. Policy SI1 'Improving air quality' states developments should identify and deliver further improvements to air quality. To tackle poor air quality, protect health and meet legal obligations, proposed developments should not:

- lead to further deterioration of existing poor air quality;
- 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 exceedance of legal limits; or
- create unacceptable risk of high levels of exposure to poor air quality.

Air Quality Neutral

19 The Air Quality Neutral assessment, presented in this report has been undertaken following the methodology described in the 'Air Quality Neutral London Plan Guidance[6].

[4] *Ministry of Housing, Communities and Local Government (2026), National Planning Policy Framework, August 2026.*
[5] *Greater London Authority. 2021. The London Plan: The Spatial Development Strategy for Greater London, March 2021.*
[6] *Greater London Authority (2023) London Plan Guidance - Air Quality Neutral. London: Greater London Authority.*

Local Planning Policy - London Borough of Hillingdon

London Borough of Hillingdon Air Quality Action Plan, 2019-2024

20 The LBH Air Quality Action Plan (AQAP) 2019-2024[7] sets out actions to improve air quality in the LBH between 2019 and 2024. The actions are set out within the following seven broad themes: monitoring and other core statutory duties; emissions from developments and buildings; public health and awareness raising; delivery servicing and freight; borough fleet actions; localised solutions; and cleaner transport.

21 The LBH AQAP 2025-2030[8] went through consultation with stakeholders and residents in 2025 and will soon be formally adopted. The AQAP identifies five priority areas to focus on:

- monitoring and reporting (including creating more sites capturing data on ultrafine particles around Heathrow Airport to inform further actions);
- enhancing the urban environment;
- cleaner transport;
- protecting the vulnerable; and
- education and awareness.

Hillingdon Local Plan: Part 1 Strategic Policies, 2012

22 The Hillingdon Local Plan: Part 1 Strategic Policies[9] sets out the adopted planning framework for development within LBH. With regard to air quality, the Local Plan recognises continued population, employment and development growth, particularly around Heathrow, will place additional pressure on areas already affected by poor air quality and emphasises the need for development to minimise its impacts on air quality and LBH to work with partners to address existing problems.

Hillingdon Local Plan: Part 2 Development Management Policies, 2020

23 The Development Management Policies document forms part of Hillingdon's Local Plan Part 2[10] and provides detailed policies that will form the basis of the LBH's decisions on individual planning applications. Policy DMEI 14: Air Quality is set out below:

'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";

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

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[7] *London Borough of Hillingdon (2019), Air Quality Action Plan 2019-2024. Available at: https://modgov.hillingdon.gov.uk/documents/s45069/Air%20Quality%20Action%20Plan%202019-2024.pdf*

[8] *London Borough of Hillingdon (2025), Council approves plans to tackle air pollution. Available at:: https://pre.hillingdon.gov.uk/news/article/71/council-approves-plans-to-tackle-air-pollution*

[9] *London Borough of Hillingdon (2012), Hillingdon Local Plan: Part 1- Strategic Policies (Adopted November 2012). Available at: https://pre.hillingdon.gov.uk/downloads/file/2206/local-plan-part-1-strategic-policies*

[10] *London Borough of Hillingdon (2012), Local Plan Part 2 Development Management Policies, Adopted Version 16 January 2020. Available at: https://pre.hillingdon.gov.uk/downloads/file/2211/hillingdon-local-plan-part-2-development-management-policies*

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

The Air Quality Standards Regulations 2010

24 The Air Quality Standards Regulations 2010[11] outline air quality target values, long-term objectives and legally binding limit values for concentrations of major air pollutants that impact public health in the UK. Additional regulations for fine particulate matter ($PM_{2.5}$) are set out within the Environmental Targets (fine particulate matter) (England) Regulations 2023[12]. The relevant air quality objectives and targets for the site are presented in Table 1 below.

Table 1 National Air Quality Objectives (AQO)[1]

Pollutant	Applies to	Air Quality Objective	Concentration measured as	Date to be achieved by (and maintained thereafter)
Nitrogen Dioxide (NO_2)	UK	200µg/m^3 not to be exceeded more than 18 times a year	1-Hour Mean	31 December 2005
	UK	40µg/m^3	Annual Mean	31 December 2005
Particulate Matter (PM_{10}) [(a)]	UK	50µg/m^3 not to be exceeded more than 35 times a year	24-hour Mean	1 January 2005
	UK	40µg/m^3 by end of 2004	Annual Mean	1 January 2005
Particulate Matter ($PM_{2.5}$) [(b)]	UK	20µg/m^3	Annual Mean	1 January 2020
	UK	10µg/m^3 not to be exceeded at any relevant monitoring station	Annual Mean	31 December 2040
	UK urban areas	Exposure Reduction - Target of 15% reduction in concentrations at urban background	Annual Mean	Between 2010 and 2020
	England	Target of 35% reduction in population exposure compared with the average population exposure baseline period (2016 – 2018)	Population Exposure Reduction	31st December 2040

Notes:
[(a)] Particulate matter with a mean aerodynamic diameter less than 10 microns (µm)
[(b)] Particulate matter with a mean aerodynamic diameter less than 2.5 microns (µm)

Environmental Improvement Plan 2025

25 In 2018, Defra published its 25 Year Environment Plan[13]. The Environment Act (2021)[14] set into law the requirement to review this Plan at least every five years. The Environmental Improvement Plan (EIP) 2025[15] sets out a target to require a maximum annual mean concentration $PM_{2.5}$ target of 10µg/m^3 by December 2030.

[11] HM Government, 2010. The Air Quality Standards Regulations. Available at: https://www.legislation.gov.uk/uksi/2010/1001/contents
[12] HM Government, 2023. The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023. Available at: https://www.legislation.gov.uk/uksi/2023/96/contents/made
[13] HM Government. 2018. A Green Future: Our 25 Year Plan to Improve the Environment, London
[14] HM Government. 2021. Environment Act 2021. Chapter 30. London
[15] HM Government. 2025. Environmental Improvement Plan 2025, 1st December 2025

World Health Organization Guidelines

26 World Health Organization (WHO) Global Air Quality Guidelines[16] were last updated in September 2021. The guidelines set out recommendations on air quality concentration levels (referred to in the table below as 'AQG Level'), together with interim targets, shown in Table 2**Error! Reference source not found.**.

Table 2 WHO Guidelines

Pollutant	Time Period	Interim Target (µg/m^3)				AQG Level
		1	2	3	4	
NO_2	1-hour	-	-	-	-	200µg/m^3
	24-hour Mean	120	50	-	-	25µg/m^3
	Annual Mean	40	30	20	-	10µg/m^3
PM_{10}	24-hour Mean	150	100	75	50	45µg/m^3
	Annual Mean	70	50	30	20	10µg/m^3 [a]
$PM_{2.5}$	24-hour Mean	75	50	37.5	25	15µg/m^3
	Annual Mean	35	25	15	10	5µg/m^3 [b]

27 The WHO recognise that while the achievement of the AQG levels should be the ultimate goal, this might be a difficult task for many countries. Therefore, gradual progress in improving air quality, marked by the achievement of interim targets, should be considered a critical indicator of improving health conditions for populations.

28 The WHO guidelines are advisory rather than regulatory, and there is currently no legal obligation for local authorities to comply with them.

[16] *World Health Organization. 2021. WHO global air quality guidelines. September 2021*

ASSESSMENT METHODOLOGY

Defining the Baseline

Existing Baseline

29 To establish the existing baseline air quality conditions in the local area, the following sources were reviewed:

- LBH Air Quality Annual Status Report for 2024[17] to identify local monitoring data;
- Defra's 2021-based background maps to obtain background annual mean NO_X, NO_2, PM_{10} and $PM_{2.5}$ concentrations for the grid squares covering the site; and
- Defra's Pollutant Release and Transfer Register[18] and satellite imagery to identify any industrial or waste management sources.

30 2024 annual mean NO_2, PM_{10} and $PM_{2.5}$ concentrations have been modelled for selected existing receptors along the local road network for use within the ADMS-Roads dispersion model. Further details are provided in **Appendix A**.

Future Baseline

31 If the Proposed Development was not to come forward, it is expected the site would remain in its current state.

32 Air quality is predicted to continually improve and is likely to remain below the AQO's through the uptake of cleaner vehicles, more stringent vehicle emissions standards and the transition away from combustion sources for heating.

Impact Assessment Methodology

Demolition and Construction

Dust Emissions

33 The GLA's The Control of Dust and Emissions during Construction and Demolition Supplementary Planning Guidance (SPG)[19] was based on the IAQM's 2014 Guidance on the Assessment of dust from demolition and construction[20]. The SPG states the IAQM guidance is periodically updated and, therefore, the latest version of the IAQM Guidance should be used.

34 The effects of dust emissions from the demolition and construction phase have been assessed using professional judgement and the latest version of the IAQM Construction guidance[21] and the following:

- Consideration of planned demolition and construction activities and their phasing; and
- A review of the location (and distance) of sensitive uses surrounding the site.

35 Following the IAQM Construction guidance[21], demolition and construction works were divided into the following four distinct activities:

[17] *London Borough of Hillingdon. 2025. London Borough of Hillingdon Air Quality Annual Status Report for 2024, May 2025*
[18] *Defra (2025) UK Pollutant Release and Transfer Register. Available: prtr.defra.gov.uk.*
[19] *Greater London Authority. 2014. The Control of Dust and Emissions during Construction and Demolition Supplementary Planning Guidance*
[20] *Institute of Air Quality Management. 2014. Guidance on the assessment of dust from demolition and construction, Version 1.1.*
[21] *Institute of Air Quality Management. 2024. Guidance on the assessment of dust from demolition and construction, Version 2.2.*

- Demolition – any activity involved in the removal of an existing structure (or structures). This may also be referred to as de-construction, specifically when a building is to be removed a small part at a time;
- Earthworks – soil-stripping, ground-levelling, excavation and landscaping;
- Construction – any activity involved with the provision of a new structure (or structures), its modification or refurbishment. A structure will include a residential dwelling, office building, retail outlet, road, etc; and
- Trackout – the transport of dust and dirt from the construction/demolition site onto the public road network, where it may be deposited and then re-suspended by vehicles using the network. This arises when Heavy Duty Vehicles (HDV) leave the construction/demolition site with dusty materials, which may then spill onto the road, and/or when HDVs transfer dust and dirt onto the road having travelled over muddy ground on site.

36 IAQM Construction guidance[21] considers the effects of dust, as follows:

- Annoyance due to dust soiling;
- Potential effects on human health due to significant increase in exposure to PM_{10}; and
- Harm to ecological receptors with account being taken of the sensitivity of the area that may experience these effects.

37 A summary of the four-step process, which was undertaken for the dust demolition and construction assessment as set out in the IAQM Construction guidance[21] is presented in Table 3.

Table 3 Summary for Undertaking a Construction Dust Assessment

Step		Description
1	Screen the Need for a Detailed Assessment	Simple distance-based criteria are used to determine the requirement for a detailed dust assessment. An assessment will normally be required where there is: • A 'human receptor' within: – 250m of the boundary of the site; or – 50m of the route(s) used by construction vehicles on the public highway, up to 250m from the site entrance(s). • An 'ecological receptor' within: – 50m of the boundary of the site; or – 50m of the route(s) used by construction vehicles on the public highway, up to 250m from the site entrance(s).
2	Assess the Risk of Dust Impacts	The risk of dust arising in sufficient quantities to cause annoyance and/or health and/or ecological impacts should be determined using four risk categories: negligible, low, medium and high risk. A site is allocated to a risk category based on two factors: • the scale and nature of the works, which determines the potential dust emission magnitude as small, medium or large (STEP 2A); and • the sensitivity of the area to dust impacts (STEP 2B), which is defined as low, medium or high sensitivity. To determine the risk of impacts with no mitigation applied (STEP 2C), the dust emission magnitude (STEP 2A) is combined with the sensitivity of the area determined (STEP 2B)
3	Site Specific Mitigation	The dust risk categories for each of the four activities determined in STEP 2C is used to define the appropriate, site-specific, mitigation measures to be adopted. Local authorities may have a Code for Construction Practice, or equivalent document, that should be taken into account during the development of the mitigation measures. For the cases where the risk is 'negligible' no mitigation measures beyond those required by legislation are required.
4	Determine Significant Effects	Once the risk of dust impacts has been determined in STEP 2C and the appropriate dust mitigation measures identified in STEP 3 the final step is to determine whether there are significant effects arising from the construction phase of a proposed development. For almost all construction activity, the aim should be to prevent significant effects on receptors through the use of effective mitigation. Experience shows that this is normally possible. Hence the residual effect will normally be 'not significant'.

Construction Vehicle Emissions

38 IAQM Construction guidance[21] states:

"Experience of assessing the exhaust emissions from on-site plant (NRMM) and site traffic suggests that they are unlikely to make a significant impact on local air quality, and in the vast majority of cases they will not need to be quantitatively assessed. For site plant and on-site traffic, consideration should be given to the number of plant/vehicles and their operating hours and locations to assess whether a significant effect is likely to occur. For site traffic on the public highway, if it cannot be scoped out (for example by using the EPUK's criteria), then it should be assessed using the same methodology and significance criteria as operational traffic impacts".

39 In accordance with the IAQM Construction guidance[21]**Error! Bookmark not defined.**, it is considered that a quantitative assessment of the exhaust emissions from construction vehicles is not required. Accordingly, a qualitative assessment is deemed appropriate and is provided in this report. Details of the assessor's experience and competence to undertake the qualitative construction vehicle emissions assessment are provided in **Appendix A**.

Construction Plant Emissions

40 In accordance with the London Plan[5], all construction plant would adhere to the emissions standards for NO_2 and PM_{10} set out for Non-Road Mobile Machinery (NRMM). As such, it is considered the effect

of construction plant emissions would be not significant, and further assessment is not required. The effect of construction plant emissions has therefore not been considered further.

Completed Development

41 The Environmental Protection UK and IAQM Land-Use Planning & Development Control: Planning for Air Quality guidance[22] sets out criteria for when an air quality assessment is required to accompany a planning application.

42 The guidance states an air quality assessment is required if there is a change of:

- more than 100 Light Duty Vehicles (LDV's) flows in Annual Average Daily Traffic (AADT) within or adjacent to an Air Quality Management Area (AQMA) or more than 500 AADT elsewhere; or
- more than 25 HDV flows AADT within or adjacent to an AQMA or more than 100 AADT elsewhere; or
- combustion plant where the single or combined NO_x emission rate exceeds 5 mg/sec.

Completed Development - Vehicle Emissions

43 The project transport consultants (Mode Transport Planning) have confirmed the vehicle flows generated by the Proposed Development would result in a change of more than 25 HDV flows in AADT. Detailed modelling using ADMS Roads has therefore been undertaken to assess the impact of the Proposed Development on sensitive receptors along local road links.

ADMS Roads Model

44 The likely effect on local air quality from vehicle emissions generated from the completed and operational Proposed Development has been assessed using the atmospheric dispersion model ADMS-Roads.

45 The ADMS-Roads dispersion model predicts how emissions from roads and small-scale industrial sources combine with local background pollution levels, taking account of meteorological conditions, to affect local air quality. The most significant pollutants associated with road traffic emissions, in relation to human health, are NO_2 and particulates. This assessment therefore focuses on NO_2 and particulate matter (PM_{10} and $PM_{2.5}$) for human receptors.

46 The model has been run for the verification and baseline year of 2024, the latest year of available monitoring data, using 2024 background data, traffic data and vehicle emission rates as inputs.

47 The year 2024 was also modelled for the 'with Development' scenario. This is a conservative assessment as local air quality will likely be better in 2024 than 2028 (the anticipated year the Proposed Development would be completed and operational) through the uptake of cleaner vehicles, more stringent vehicle emissions standards and the continued transition away from combustion sources for heating. The 'with Development' scenario model was also run using 2024 background data, traffic data and vehicle emission rates.

48 Full details of the dispersion modelling study is presented within **Appendix A**.

Completed Development Combustion Plant Emissions

49 The Proposed Development would be heated and cooled by air-source heat pumps, with hot water provided by local electric water heaters and electricity generated by roof-mounted photovoltaic panels, as outlined in the Energy Strategy submitted in support of the planning application. The proposed all-electric heating,

[22] *Environmental Protection UK & Institute of Air Quality Management (2017), 'Land-Use Planning & Development Control: Planning for Air Quality', EPUK & IAQM, London*

cooling and hot water strategy would not generate on-site combustion emissions and would therefore not give rise to any significant adverse air quality effects. Combustion plant has therefore not been considered further within the air quality assessment.

Limitations and Assumptions

50 For the purposes of the demolition and construction dust emission assessment, it was assumed construction activity would all be carried out at the site boundary to provide a worst-case assessment.

51 The air quality model cannot take account of the benefits a building or green planting can have in terms of restricting the dispersion of vehicle emissions by providing a physical barrier or, for planting, the ability to trap and filter airborne pollutants. As such the results from the air quality model are considered to be worst-case. In addition, the model cannot take account of individual behavioral changes associated with sustainable transport measures such as cycle routes and electric charging facilities.

Methodology for Defining Effects

Receptors and Receptor Sensitivity

Demolition and Construction

Dust Emissions

52 The dust emissions assessment does not consider individual sensitive receptors. All human receptors within 250m and ecological receptors within 50m of the site boundary are considered to be sensitive and will be assessed in the dust emissions assessment.

53 The IAQM Construction guidance[21] provides guidance on the sensitivity of different receptors to dust soiling, health and ecological effects. Using professional judgement, and with reference to the IAQM Construction guidance[21] receptors were defined as high, medium or low sensitivity, as follows:

- High - residential properties; schools, care homes; nationally designated ecological areas sensitive to dust deposition; and places where the appearance, aesthetics or value of property would be diminished by dust soiling, such as museums and car showrooms.
- Medium – parks, places of work or nationally designated ecological areas possibly sensitive to dust deposition.
- Low - playing fields, farmland, footpaths, shopping streets, short-term car parks, roads and locally designated ecological areas such as local nature reserves.

Construction Vehicle Emissions

54 Human receptors in proximity to construction routes would be sensitive to vehicle emissions associated with construction. Individual sensitive receptors, representative of worst-case exposure were identified as the construction vehicles numbers exceed the threshold criteria outlined in the EPUK/IAQM guidance[22].

55 Ecological receptors were reviewed in accordance with the IAQM's *A guide to the assessment of air quality impacts on designated nature conservation sites*[23] to ascertain if these sites were likely to be affected by construction vehicle emissions. The Outline Construction Logistics Plan (Mode Transport Planning, September 2026 forecasts 14 construction vehicle trips per day during the busiest construction period. There would not be a change in AADT flows of 1,000 vehicles or 200 HDVs in

[23] *Holman et al .2020. A guide to the assessment of air quality impacts on designated nature conservation sites – version 1.1, Institute of Air Quality Management, London.*

AADT on any road link. Ecological receptors were therefore not considered further in the construction vehicle emissions assessment.

Completed Development

56 Defra Local Air Quality Management Technical Guidance 2022 (LAQM.TG(22))[27] presents examples of receptors where the AQOs (Table 1) should apply. The annual mean NO_2 and PM_{10} objectives apply at the façades of residential properties, schools, hospitals and care homes. The 24-hour mean PM_{10} objective applies at the same receptors as the annual mean objective above, together with hotels and gardens of residential properties. The 1-hour mean NO_2 objective applies wherever members of the public might regularly spend 1-hour or more, including outdoor eating locations and pavements of busy shopping streets.

57 Receptors where the air quality objectives apply were considered to be of high sensitivity. Locations where the objectives do not apply were considered not sensitive. Medium and low sensitivity receptors were therefore not considered further in the Completed Development assessment.

58 Existing sensitive human receptors were selected at the roadside façade of properties using satellite imagery at locations closest to the roads and most sensitive to changes in pollutant concentrations. Receptors were selected along roads surrounding the site and road links that exceed the threshold criteria set out in the EPUK/IAQM guidance[22].

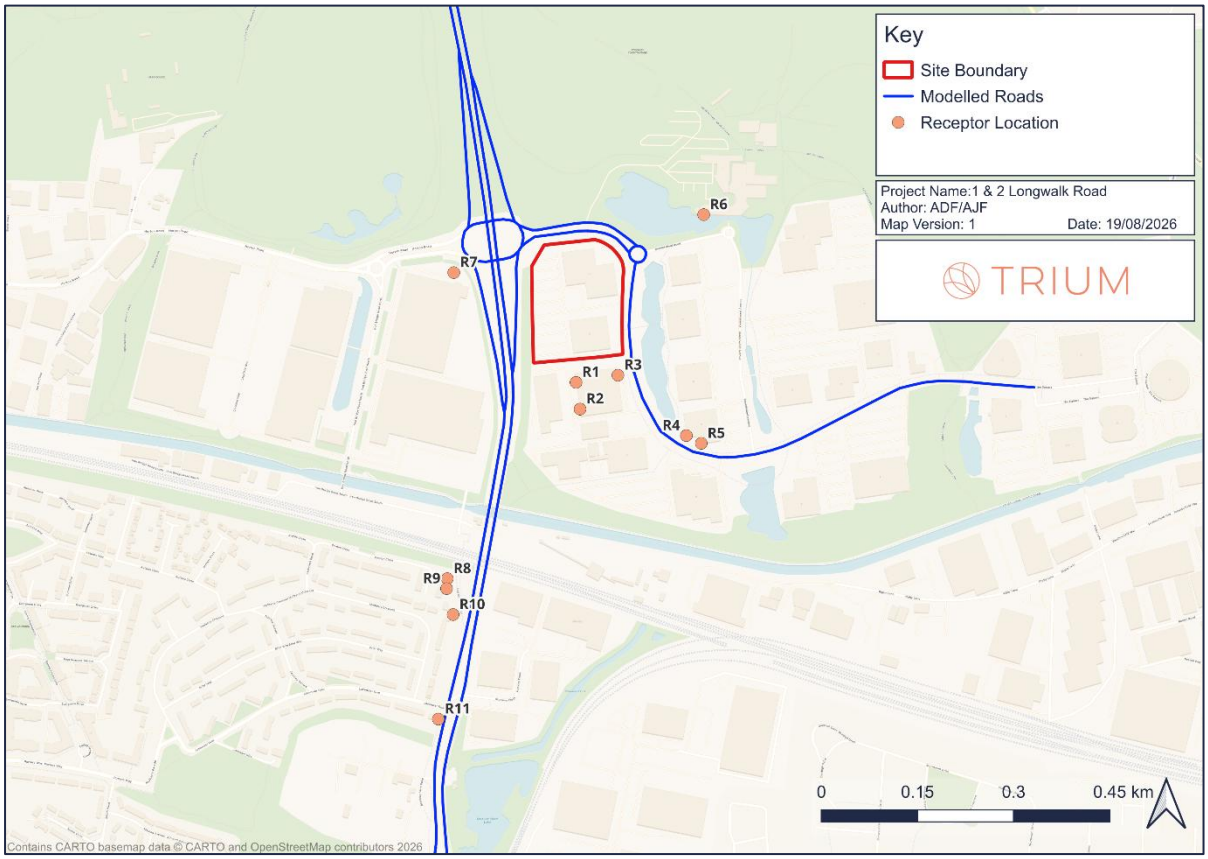
59 Existing human receptors were modelled at a height of 1.5m to represent a conservative breathing height scenario for pollutant concentrations.

60 The selected existing human sensitive receptors assessed are listed in Table 4**Error! Reference source not found.** below and presented in Figure 1.

Table 4 Existing Receptor Locations

ID	Receptor Location	Receptor Type	X,Y Coordinates	
R1	Marks & Spencer - Stockley Park North-west of building	Office	507795	180117
R2	Marks & Spencer - Stockley Park South-west of building	Office	507802	180076
R3	Marks & Spencer - Stockley Park North-east of building	Office	507860	180130
R4	Accord Healthcare Ltd. South-west of building	Office	507969	180038
R5	Accord Healthcare Ltd. South of building	Office	507992	180027
R6	Travelodge, Stockley Park	Hotel	507989	180382
R7	Prologis Warehouse	Warehouse/Office	507601	180284
R8	14 Emden Cl, West Drayton	Residential	507601	179808
R9	36 Emden Cl, West Drayton	Residential	507600	179793
R10	127 Mulberry Cres, West Drayton	Residential	507611	179753
R11	72 Lavender Rise, West Drayton	Residential	507591	179590

Figure 1 Site Boundary and Receptor Locations



Magnitude of Impact

Demolition and Construction

Dust Emissions

61 The potential impacts of construction activities on local air quality were based on professional judgement and with reference to the criteria set out in the IAQM Construction guidance[21].

62 The assessment of the risk of dust impacts arising from the likely demolition and construction activities, as identified by the IAQM Construction guidance[21], is based on dust emission magnitude (STEP 2A) and the sensitivity of the area (STEP 2B). The matrices presented in Tables 6 – 9 of the IAQM Construction guidance[21] provide a method to determine assigning the level of risk for each activity prior to mitigation being applied. Risks are defined as 'negligible', 'low', 'medium' or 'high'.

Construction Vehicle Emissions

63 The impact of construction vehicle emissions was based on professional judgement and considered likely vehicle numbers, vehicle routeing and site operating hours.

Completed Development

64 The EPUK/IAQM guidance[22] outlines a method for describing the impact magnitude at individual receptor locations as a result of the Proposed Development, expressed as a proportion of the Air Quality Assessment Level (AQAL). This change is then considered alongside the resulting total concentration and its relationship to the assessment criterion to describe the overall impact at selected receptor

locations. Table 5**Error! Reference source not found.** presents the EPUK/IAQM framework for describing the impact at individual receptors.

Table 5 Impact Descriptors for Individual Receptors

Long-term Average Concentration at Receptor in Assessment Year				% Change in Concentration Relative to AQAL			
% of AQAL	Annual Mean NO_2 (µg/m^3)	Annual Mean PM_{10} (µg/m^3)	Annual Mean $PM_{2.5}$ (µg/m^3)	1	2-5	6-10	>10
75% or less of AQAL	Less than 30.2	Less than 30.2	Less than 15.2	Negligible	Negligible	Minor	Moderate
76-94% of AQAL	30.2 – 37.8	30.2 – 37.8	15.2 – 18.9	Negligible	Minor	Moderate	Moderate
95-102% of AQAL	37.8 – 41.0	37.8 – 41.0	18.9 – 20.5	Minor	Moderate	Moderate	Major
103-109% of AQAL	41.0 – 43.8	41.0 – 43.8	20.5 – 21.9	Moderate	Moderate	Major	Major
110% or more of AQAL	More than 43.8	More than 43.8	More than 21.9	Moderate	Major	Major	Major

Categorising Likely Significant Effects

Demolition and Construction

Dust Emissions

65 The IAQM Construction guidance[21] recommends that significance is only assigned to the effect after considering mitigation and assumes that all actions to avoid or reduce the effects are inherent within the design of the Proposed Development. In the case of demolition and construction mitigation, this would be secured through planning conditions, legal requirements or required by regulations. The risk category determined for each construction activity type was used to define the appropriate mitigation measures that should be applied.

66 The IAQM Construction guidance[21] states that with appropriate mitigation in place, the effects of construction dust will normally be 'not significant'. Therefore, the assessment focuses on determining the appropriate level of mitigation to ensure that there will be no significant effect.

Construction Vehicle Emissions

67 The significance of likely residual effects of construction vehicles on local air quality was established through professional judgement and the consideration of the likely geographical extent of effects and the duration of the construction phase.

Completed Development

68 The EPUK/IAQM guidance[22] notes the degree of change may influence each receptor differently, depending on the severity of the impact and other factors that may need to be considered. The assessment framework (Table 5**Error! Reference source not found.**) serves as a basis for forming a professional judgement on the significance of effect. However, while impacts at individual receptors may be classified as *minor*, *moderate*, or *major*, the overall effect of the Proposed Development may not necessarily be considered significant. Following the approach to assessing significance outlined in the EPUK/IAQM guidance[22], the significance of likely residual effects of the Proposed Development on air quality has been established through professional judgement and the consideration of the following factors:

- The geographical extent (local, district or regional) of effects;

- Their duration (temporary or long term);
- Their reversibility (reversible or permanent);
- The magnitude of changes in pollution concentrations;
- The exceedance of AQO objectives; and
- Changes in pollutant exposure.

AIR QUALITY BASELINE CONDITIONS

London Borough of Hillingdon Review and Assessment Process

69 In 2007, the LBH declared an AQMA for exceedances of the annual mean NO_2 and 24-hour and annual and 24-hour mean PM_{10} objectives. The AQMA covers the whole borough.

Industrial Sources

70 There are no existing industrial or waste management activities[18] that generate potential sources of air or odour pollution[24] that would impact the Proposed Development.

Local Monitoring

71 Due to Covid-19, 2020 and 2021 monitoring data was not considered representative of air quality concentrations in the area and has therefore not been considered within this report.

72 In 2024, continuous air quality monitoring was undertaken at 12 locations within LBH. In addition, LBH also undertook low-cost monitoring of NO_2 and $PM_{2.5}$ at four sites. The monitoring results from the five automatic monitors within 3km of the site are shown in Figure 2 and presented in Table 6 below.

Table 6 LBH Automatic Monitoring Data within 3km of Site Centre, 2022-2024

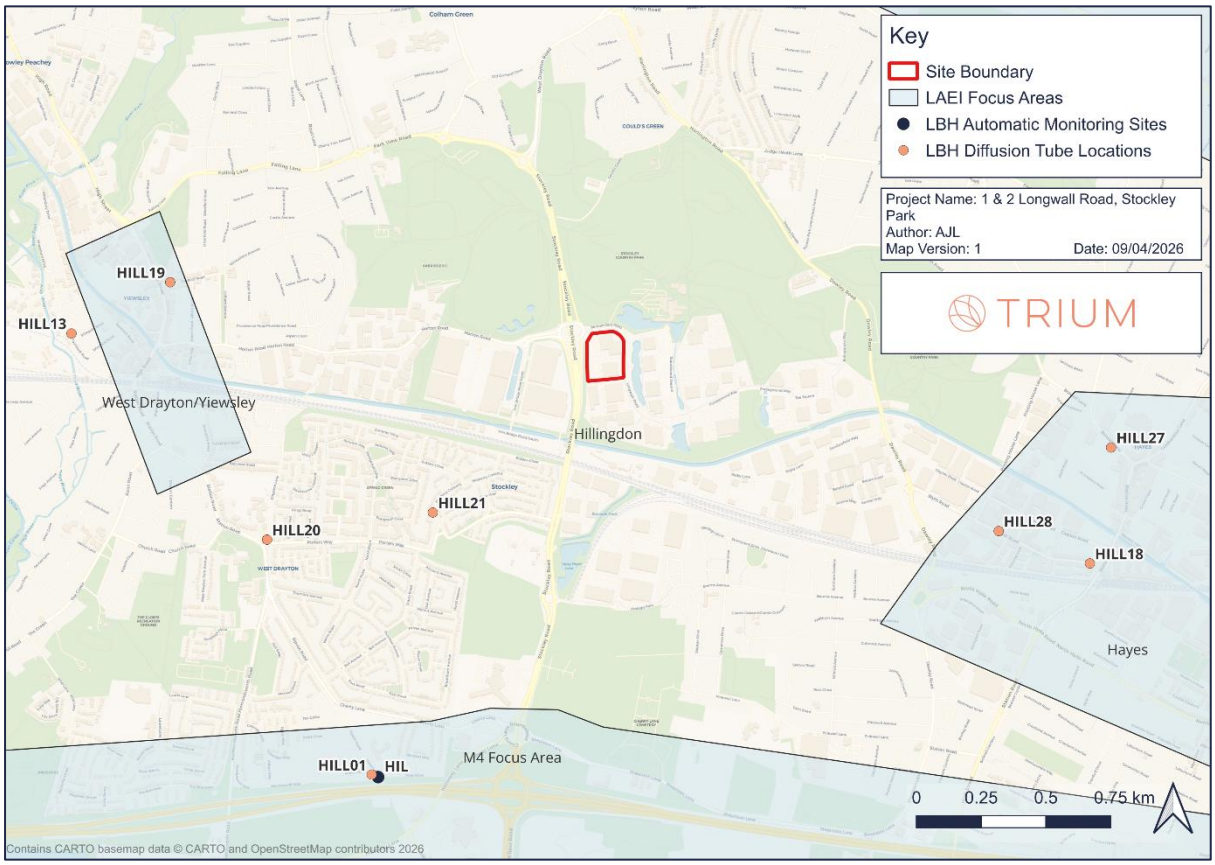
Site Name (ID) & Classification	Approx. Location to Site	Pollutant	National Air Quality Objective[1]	Averaging Period	Concentrations (µg/m³)		
					2022	2023	2024
London Hillingdon (HIL) Urban Background	1.8km south-west of site	NO_2	40µg/m³	Annual Mean (µg/m³)	28	25	23
			200µg/m³ (not to be exceeded more than 18 times a year)	1-Hour Mean (No. of Hours)	0	0	0
		PM_{10}	40µg/m³	Annual Mean (µg/m³)	-	14	13
			50µg/m³ (not to be exceeded more than 35 times a year)	24-Hour Mean (No. of Hours)	0	3	0
		$PM_{2.5}$	20µg/m³ (10µg/m³ by 31 December 2040)	Annual Mean	-	7	7
London Harlington (HRL) Airport	2.5km south of site	NO_2	40µg/m³	Annual Mean (µg/m³)	24	22	19
			200µg/m³ (not to be exceeded more than 18 times a year)	1-Hour Mean (No. of Hours)	0	0	0
		PM_{10}	40µg/m³	Annual Mean (µg/m³)	13	13	11
			50µg/m³ (not to be exceeded more than 35 times a year)	24-Hour Mean (No. of Hours)	2	0	0
		$PM_{2.5}$	20µg/m³ (10µg/m³ by 31 December 2040)	Annual Mean	8	8	7
Hillingdon Hayes (HIL5) Roadside	2.8km south-east of site	NO_2	40µg/m³	Annual Mean (µg/m³)	34	34	29
			200µg/m³ (not to be exceeded more than 18 times a year)	1-Hour Mean (No. of Hours)	0	0	0
		PM_{10}	40µg/m³	Annual Mean (µg/m³)	26	30	22

[24] *Institute of Air Quality Management (IAQM), 2018. Guidance on the assessment of odour for planning, Version 1.1, July 2018. IAQM, London.*

Site Name (ID) & Classification	Approx. Location to Site	Pollutant	National Air Quality Objective[1]	Averaging Period	Concentrations (µg/m³)		
					2022	2023	2024
			50µg/m³ (not to be exceeded more than 35 times a year)	24-Hour Mean (No. of Hours)	23	16	6
Hillingdon Sipson (SIPS) Urban Background	3km south of site	NO_2	40µg/m³	Annual Mean (µg/m³)	24	23	22
			200µg/m³ (not to be exceeded more than 18 times a year)	1-Hour Mean (No. of Hours)	0	0	0
Tavistock Road (*Low-Cost Sensor*) Roadside	2.1km west of site	NO_2	40µg/m³	Annual Mean (µg/m³)	23.1	20.7	20.0
		$PM_{2.5}$	20µg/m³ (10µg/m³ by 31 December 2040)	Annual Mean	10.6	8.5	7.9

73 The monitoring results**Error! Reference source not found.** indicate the AQOs were met at all monitors for NO_2, PM_{10} and $PM_{2.5}$. The Environmental Improvement Plan 2025[25] annual mean $PM_{2.5}$ target of 10µg/m³ (by December 2030) was met at the London Hillingdon (HIL), London Harlington (HRL), and Tavistock Road monitors in 2023 and 2024.

Figure 2 LBH Monitoring Locations and AQFA in the vicinity of the site



74 In 2024, LBH undertook annual mean NO_2 monitoring at 44 different locations using diffusion tubes[17]. The results for diffusion tubes located within approximately 2km of the site centre are shown in Figure 2 and presented in Table 7**Error! Reference source not found.**.

[25] *HM Government. 2023. Environmental Improvement Plan 2023 - First revision of the 25 Year Environment Plan*

Table 7 LBH Annual Mean NO_2 Monitoring Data within 2km of Site Centre, 2022-2024

Site ID	Site Name	Classification	Distance to Site Centre (km)	Annual Mean NO_2 Concentrations (µg/m³)		
				2022	2023	2024
HILL21	5-7 Mulberry Crescent, West Drayton Lamp Post (18)	Background	1.0	27.9	24.5	21.9
HILL28	Blyth Road 2nd Tube, Hayes Lamp Post (17) (western most lamppost in front of 133 Enterprise House)	Roadside	1.5	27.1	21.4	18.8
HILL20	1 Porters Way (corner with Kingston Lane) Lamp Post (1)	Background	1.6	34.5	29.2	23.6
HILL27	Botwell House RC Primary School (Side-fence)	Roadside	1.8	26.8	26.9	24.6
HILL18	Blyth Road, Hayes Lamp Post (4)	Roadside	1.9	28.3	25.7	22.9
HILL19	Side of 104 Yiewsley High Street (front of 1A Fairfield Road) Lamp Post (2)	Background	1.9	28.7	26.2	23.1
HILL01	AURN Site, Keats Way, West Drayton	Roadside	1.9	29.4	27.5	24.0
HILL05	Hillingdon Hospital Monitoring Station Colham Road (Near John Rich House on former junction to Pield Heath Road)	Roadside	2.0	27.8	26.7	24.0

75 Table 7 indicates the annual mean NO_2 objective of 40µg/m³ was met at all eight LBH diffusion tube locations within 2km of the site between 2022 and 2024. Annual mean NO_2 concentrations have decreased from 2022 to 2024 at all diffusion tubes.

Background Concentrations

76 Background pollution concentrations were sourced from Defra's 2021-based background maps[26], providing annual mean NO_x, NO_2, PM_{10} and $PM_{2.5}$ concentrations for 1km x 1km grid squares for assessment years between 2021 and 2040. Table 8**Error! Reference source not found.** presents the 2024 (assessment year) and 2025 (last complete year) Defra background concentrations for the grid square the site is in (507500,180500).

Table 8 Background Concentrations for the Grid Square of the site

Pollutant	AQO	Annual Mean Concentration (µg/m³)	
		2024	2025
NO_X	-	21.3	20.7
NO_2	40 µg/m³	15.5	15.1
PM_{10}	40 µg/m³	13.2	13.1
$PM_{2.5}$	20 µg/m³	7.9	7.8

77 The data in Table 8 shows the background concentrations at the site meet the AQOs in 2024 and 2025.

Railway Lines

78 Diesel locomotives can give rise to high short-term NO_2 and SO_2 concentrations within 30m of railway lines, stations or depots. The site is located over 300m from the nearest railway line, the Great Western Main Line. In accordance with Local Air Quality Management Technical Guidance (LAQM.TG22)[27]. Railway emissions were therefore not considered further.

[26] *Department For Environment, Food & Rural Affairs, 2021-based Background Maps, 2021. Available at: https://uk-air.defra.gov.uk/data/laqm-background-home*
[27] *Defra (2022) Local Air Quality Management Technical Guidance 2022 (LAQM.TG(22)). Defra. London*

Modelled 2024 Baseline Concentrations

79 Table 9 presents modelled 2024 baseline NO_2, PM_{10} and $PM_{2.5}$ concentrations at existing receptor locations.

Table 9 Modelled Annual Mean 2024 Baseline Concentrations

Receptor ID	2024 NO_2 Annual Mean ($\mu g/m^3$)	2024 PM_{10} Annual Mean ($\mu g/m^3$)	2024 PM_{10} - Number of Days >50$\mu g/m^3$	2024 $PM_{2.5}$ Annual Mean ($\mu g/m^3$)
R1	16.2	13.5	0	8.1
R2	16.1	13.4	0	8.1
R3	16.0	13.4	0	8.0
R4	15.9	13.4	0	8.0
R5	15.8	13.4	0	8.0
R6	15.7	13.3	0	8.0
R7	16.5	13.6	0	8.2
R8	18.0	13.8	0	8.1
R9	18.0	13.8	0	8.1
R10	18.4	13.9	0	8.2
R11	19.3	14.3	0	8.5

80 The results in Table 9**Error! Reference source not found.** indicate the 2024 NO_2, PM_{10} and $PM_{2.5}$ concentrations are predicted to meet the relevant AQO's (shown in Table 1) at all existing receptors modelled.

POTENTIAL EFFECTS

Demolition and Construction

81 Demolition and Construction activities of the Proposed Development have the potential to affect local air quality through Demolition, Earthworks, Construction and Trackout activities, as described above.

82 The site currently comprises two office buildings with associated car parking. The site is in a commercial area with the nearest human receptors located within office buildings within Stockley Park and the Travelodge located approximately 200m northeast of the site. In accordance with Table 3 the assessment will proceed to detailed assessment.

83 Stockley Park Lakes and Meadows, a Nature Conservation Site of Borough Grade II (local) Importance, is located more than 50m of the site boundary and 50m of the routes used by construction vehicles on the public highway, up to 250m from the site entrance. Harm to ecological receptors has therefore not been considered further.

Dust Emissions

84 The dust emission magnitude associated with demolition, earthworks and construction activities, together with emissions arising from trackout, has been assessed in Table 10 using the criteria set out in Table 3.

Table 10 Dust Emission Magnitudes

Activity	Magnitude	Justification
Demolition	Large	The site currently comprises two office buildings comprising a total Gross Internal Area (GIA) of 11,490m^2. The demolition volume would be likely to exceed 75,000m^3. Based on this and considering the criteria in step 2A of the IAQM Construction guidance[21], the potential dust emissions during demolition activities would be of large magnitude.
Earthworks	Medium	The total site area is approximately 2.53ha. Based on the above and considering the criteria in step 2A of the IAQM Construction guidance[21], the potential dust emissions during earthworks activities would be of medium magnitude.
Construction	Large	The Proposed Development will comprise the construction of two units for flexible industrial, storage and distribution uses, with the total building volume expected to be over 75,000 m^3. Based on the above and other criteria in step 2A of the IAQM Construction guidance[21], the potential dust emissions during construction activities would be of large magnitude.
Trackout	Medium	It is estimated the number of HDV trips leaving the site would be between 20 and 50 outward movements in any one day with surface material having a low potential for dust release. Based on this and considering the other criteria in step 2A of the IAQM Construction guidance[21], the potential for dust emissions due to trackout activities would be of medium magnitude.

Sensitivity of the Area

85 The sensitivity of the area to each main activity has been assessed based on the number and distance of the nearest sensitive receptors to the activity, and the sensitivity of these receptors to dust soiling and human health impacts.

Sensitivity of the Area to Dust Soiling Effects on People and Property

86 Dust soiling concerns the deposition of dust on surfaces that effect amenity; and human health effects are associated with the inhalation of particulates. Workers within commercial office buildings within Stockley Park are classified as medium sensitivity receptors. There are more than 10 medium sensitivity receptors within 50m of the site boundary, on this basis, as set out in the IAQM Construction guidance[21], the sensitivity of the area to dust soiling is medium.

Sensitivity of the Area to Human Health Impacts

87 As shown in Table 6, the annual mean urban background PM_{10} concentration at the London Hillingdon (HIL) Urban Background monitor was 13µg/m^3 in 2024 - 24µg/m^3 as set out in Table 3 of the IAQM Construction guidance[21]. On this basis, as set out in Table 3 of the IAQM Construction guidance[21], and that there are over 10 medium sensitivity receptors within approximately 50m, the sensitivity of the area to human health impacts is low.

Dust Risk Summary

88 The dust risk categories, based on the potential magnitude of dust emissions and the sensitivity of the area to dust, are presented in Table 11**Error! Reference source not found.**.

Table 11 Summary of Dusk Risk

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

89 The site is considered to present a high risk from dust soiling during demolition. Therefore, a range of mitigation measures, appropriate to high-risk sites, would be developed with reference to the IAQM Construction guidance[21]. The mitigation measures would be implemented to reduce the release of dust entering the atmosphere and being deposited on nearby receptors.

90 The mitigation measures are an inherent part of the Proposed Development, required by regulations and would be secured by planning conditions. The mitigation measures would ensure the effect of dust emissions would be not significant.

Construction Vehicle Emissions

91 The Outline Construction Logistics Plan (Mode Transport Planning, September 2026), Table 6.1, forecasts 14 construction vehicle trips per day during the busiest construction period. Conservatively assuming each trip comprises an arrival and a departure, this would equate to 28 vehicle movements per day.

92 The operational air quality assessment included 121 HDV movements per day, exceeding the 98 two-way HGV movements forecast in the current Delivery and Servicing Plan[28] and substantially exceeding the anticipated construction flows. Using baseline-year emission factors and background concentrations, the operational assessment predicted negligible impacts at all assessed receptors. For construction traffic using the assessed routes, this provides a conservative indication of the likely effects of construction vehicle emissions. The effect of construction vehicle emissions on local air quality is therefore considered not significant.

Completed Development

Impact on Pollutant Concentrations

Nitrogen Dioxide (NO_2)

93 Predicted 2024 annual mean NO_2 concentrations for existing receptors are set out in for both the 'Without Proposed Development' and 'With Proposed Development' scenarios. The impact at each receptor is also described using the impact descriptors presented in Table 12.

94 For all pollutants assessed in Tables 12–14, the 'With Proposed Development' scenario conservatively adds operational HDV movements to baseline traffic flows without accounting for the anticipated reduction in car movements associated with the replacement of the existing office use and reduced parking provision. The assessment therefore takes no credit for the potential air quality benefits of these reductions.

[28] *Mode Transport Planning (2026), '1&2 Longwalk Road, Stockley Park, Uxbridge: Delivery and Servicing Plan', Version 1.0, 4 September 2026, project reference J328841, paragraph 4.7.6, p. 17.*

Table 12 Predicted 2024 Annual Mean NO_2 Concentrations

Receptor ID	Annual Mean NO_2 Concentrations (µg/m^3)			% Change [a]	Impact Descriptor
	Without Proposed Development	With Proposed Development	Change in Concentration		
R1	16.2	16.2	<0.1	<0.1	Negligible
R2	16.1	16.1	<0.1	<0.1	Negligible
R3	16.0	16.0	<0.1	<0.1	Negligible
R4	15.9	15.9	<0.1	<0.1	Negligible
R5	15.8	15.8	<0.1	<0.1	Negligible
R6	15.7	15.8	<0.1	<0.1	Negligible
R7	16.5	16.6	<0.1	<0.1	Negligible
R8	18.0	18.0	<0.1	<0.1	Negligible
R9	18.0	18.0	<0.1	<0.1	Negligible
R10	18.4	18.4	<0.1	<0.1	Negligible
R11	19.3	19.3	<0.1	<0.1	Negligible

Notes:
[a] % changes are relative to the objective and have been rounded to the nearest whole number.

95 The results in Table 12 indicate the annual mean NO_2 concentrations are predicted to be below the annual mean NO_2 AQO at all existing receptors both without and with the Proposed Development.

96 As discussed in **Appendix A**, the 1-hour mean NO_2 AQO objective is unlikely to be exceeded at a roadside location where annual mean NO_2 concentrations are less than 60µg/m^3. As shown in Table 12, the predicted annual mean NO_2 concentrations are below 60µg/m^3 at all existing sensitive receptors modelled, it is unlikely that the 1-hour mean NO_2 objective will be exceeded.

97 Using the impact descriptors outlined in Table 5**Error! Reference source not found.**, the Proposed Development is predicted to result in a 'negligible' impact on annual mean NO_2 concentrations at all existing receptors.

Particulate Matter (PM_{10}) Concentrations

98 Predicted 2024 PM_{10} concentrations for existing receptors are set out in Table 13 for both the 'Without Proposed Development' and 'With Proposed Development' scenarios. The annual mean impact at each receptor is also described using the impact descriptors presented in Table 5**Error! Reference source not found.**.

Table 13 Predicted 2024 PM_{10} Concentrations

Receptor ID	Annual Mean PM_{10} Concentrations (µg/m^3)					PM_{10} - Number of Days >50µg/m^3		
	Without Proposed Development	With Proposed Development	Change in Concentration	% Change [a]	Impact Descriptor	Without Proposed Development	With Proposed Development	Change in Number of Days
R1	13.5	13.5	<0.1	0	Negligible	0	0	0
R2	13.4	13.4	<0.1	0	Negligible	0	0	0
R3	13.4	13.4	<0.1	0	Negligible	0	0	0
R4	13.4	13.4	<0.1	0	Negligible	0	0	0

Receptor ID	Annual Mean PM_{10} Concentrations ($\mu g/m^{3)}$					PM_{10} - Number of Days >50$\mu g/m^3$		
	Without Proposed Development	With Proposed Development	Change in Concentration	% Change [a]	Impact Descriptor	Without Proposed Development	With Proposed Development	Change in Number of Days
R5	13.4	13.4	<0.1	0	Negligible	0	0	0
R6	13.3	13.3	<0.1	0	Negligible	0	0	0
R7	13.6	13.6	<0.1	0	Negligible	0	0	0
R8	13.8	13.8	<0.1	0	Negligible	0	0	0
R9	13.8	13.8	<0.1	0	Negligible	0	0	0
R10	13.9	13.9	<0.1	0	Negligible	0	0	0
R11	14.3	14.3	<0.1	0	Negligible	0	0	0

99 The results in Table 13 indicate the annual mean PM_{10} concentrations are predicted to be below the annual mean PM_{10} AQO at of 40$\mu g/m^3$ all existing receptors both without and with the Proposed Development.

100 Using the impact descriptors outlined in Table 5, the Proposed Development is predicted to result in a 'negligible' impact on annual mean PM_{10} concentrations at all existing receptors.

101 The 24-hour mean PM_{10} AQO is 50$\mu g/m^3$, not to be exceeded on more than 35 days per year. The results in Table 13 illustrate the number of modelled days predicted to exceed 50$\mu g/m^3$ are significantly below 35, it is therefore unlikely the 24-hour mean PM_{10} AQO would be exceeded.

102 Annual mean PM_{10} concentrations are predicted to meet the WHO interim Target 4 of 20$\mu g/m^3$ in 2024.

Particulate Matter ($PM_{2.5}$) Concentrations

103 Predicted 2024 annual mean $PM_{2.5}$ concentrations for existing receptors are set out in Table 14 for both the 'Without Proposed Development' and 'With Proposed Development' scenarios. The impact at each receptor is also described using the impact descriptors presented in Table 5.

Table 14 Predicted 2024 Annual Mean $PM_{2.5}$ Concentrations

Receptor ID	Annual Mean $PM_{2.5}$ Concentrations ($\mu g/m^3$)				Impact Descriptor
	Without Proposed Development	With Proposed Development	Change in Concentration	% Change [a]	
R1	8.1	8.1	<0.1	0	Negligible
R2	8.1	8.1	<0.1	0	Negligible
R3	8.0	8.0	<0.1	0	Negligible
R4	8.0	8.0	<0.1	0	Negligible
R5	8.0	8.0	<0.1	0	Negligible
R6	8.0	8.0	<0.1	0	Negligible
R7	8.2	8.2	<0.1	0	Negligible
R8	8.1	8.1	<0.1	0	Negligible
R9	8.1	8.1	<0.1	0	Negligible
R10	8.2	8.2	<0.1	0	Negligible
R11	8.5	8.5	<0.1	0	Negligible

Receptor ID	Annual Mean $PM_{2.5}$ Concentrations ($\mu g/m^3$)				Impact Descriptor
	Without Proposed Development	With Proposed Development	Change in Concentration	% Change [a]	
Notes: [a] % changes are relative to the objective and have been rounded to the nearest whole number.					

104 The results in Table 14**Error! Reference source not found.** indicate the annual mean $PM_{2.5}$ concentrations are predicted to be below the annual mean $PM_{2.5}$ AQO of 20µg/m^3.

105 Using the impact descriptors outlined in Table 5**Error! Reference source not found.**, the Proposed Development is predicted to result in a 'negligible' impact on annual mean $PM_{2.5}$ concentrations at all existing receptors.

106 The Proposed Development would also meet Environmental Improvement Plan 2023[15] $PM_{2.5}$ target of 10µg/m^3 by December 2030.

107 Annual mean $PM_{2.5}$ concentrations are predicted to meet the WHO interim Target 4 of 10µg/m^3 in 2024.

Effect of Completed Development on Local Air Quality

108 Using professional judgement, based on the severity of the impact and the concentrations predicted at the existing sensitive receptors modelled, it is considered the effect of the Proposed Development on local air quality would be **not significant**.

Air Quality Neutral Assessment

109 Taxi, delivery and servicing vehicle trips, and heavy vehicle trips produced by the operation of industrial or commercial premises are not covered by Air Quality Neutral[6]. The Proposed Development would not result in an increase in parking spaces or motor vehicle movements when compared to the sites current use; and would not include new combustion plant (excluding emergency generators). On this basis, and in accordance with the Mayor of London's Air Quality Neutral Guidance, February 2023[6]**Error! Bookmark not defined.**, the Proposed Development can be excluded from air quality neutral calculations. The Proposed Development is therefore considered to be 'Air Quality Neutral'.

MITIGATION AND LIKELY RESIDUAL EFFECTS

Demolition and Construction

Dust Emissions

110 A Demolition Method Statement has been prepared for the Proposed Development and sets out appropriate measures to control and minimise dust emissions during the demolition works. The implementation of these measures, together with the mitigation measures identified within this assessment, would minimise the release of dust to the atmosphere and its deposition at nearby human and ecological receptors. With these measures in place, the likely residual effect of demolition and construction dust emissions would be not significant

Construction Vehicle Emissions

111 As demonstrated above, construction vehicle emissions would have no significant effect on local air quality without mitigation. No additional air quality mitigation is therefore required, and the residual effect would remain not significant.

Completed Development

112 As identified earlier in this report, even in the absence of mitigation, the effect of the Proposed Development on local air quality would be not significant. Accordingly, mitigation measures would not be required, and residual effects would be negligible and not significant.

SUMMARY AND CONCLUSIONS

Demolition and Construction

Demolition and Construction Dust Emissions

113 A qualitative assessment of dust effects during demolition and construction has been carried out using the IAQM Construction guidance[21]. The implementation of a range of appropriate site management practices to control dust emissions would significantly reduce the potential for adverse nuisance dust effects associated with the various stages of the works. It is considered the effects due to dust emissions would be negligible and not significant.

Construction Vehicle Emissions

114 The effect of construction vehicles entering and egressing the site during the construction phase would be negligible and not significant.

Completed Development

Effect of the Proposed Development on Local Air Quality

115 Dispersion modelling has been carried out to predict the effect of the Proposed Development on local air quality. The Proposed Development is predicted to have a negligible impact on NO_2, PM_{10} and $PM_{2.5}$ concentrations, at all existing human receptors considered.

116 Overall, the effects of the Proposed Development during construction and when complete and operational would not be significant, subject to implementation of the identified construction mitigation measures. These findings support compliance with the relevant air quality requirements of NPPF Policy P3, London Plan Policy SI1 and Hillingdon Local Plan Policy DMEI 14.

APPENDIX A: MODELLING METHODOLOGY

Introduction

A1 Appendix A presents the technical information and data upon which the assessment on the completed and operational Proposed Development is based.

Model

A2 In urban areas, pollutant concentrations are primarily determined by the balance between pollutant emissions that increase concentrations, and the ability of the atmosphere to reduce and remove pollutants by dispersion, advection, reaction and deposition. An atmospheric dispersion model is used as a practical way to simulate these complex processes; which requires a range of input data, which can include pollutant emissions rates, meteorological data and local topographical information.

ADMS-Roads

A3 The ADMS-Roads model is a comprehensive tool for investigating air pollution in relation to road networks. On review of the Site, and its surroundings, ADMS-Roads was considered appropriate for the assessment of the long and short term effects from road traffic emissions associated with the Proposed Development on local air quality. The model uses advanced algorithms for the height-dependence of wind speed, turbulence and stability to produce improved predictions of air pollutant concentrations. It can predict long-term and short-term concentrations, including percentile concentrations.

A4 ADMS-Roads model is a formally validated model, developed in the United Kingdom by Cambridge Environmental Research Consultants (CERC). This includes comparisons with data from the UK's air quality Automatic Urban and Rural Network and specific verification exercises using standard field, laboratory and numerical data sets. CERC is also involved in European programmes on model harmonisation, and their models were compared favourably against other EU and U.S. EPA systems. Further information in relation to this is available from the CERC website at www.cerc.co.uk.

A5 The latest version of the ADMS-Roads model (version 5.1.0.2) was used for the assessment.

Model Scenarios

A6 The year 2024 was modelled to establish the existing baseline situation, because it is latest year of available monitoring data against which the air quality model is verified (discussed further below). 2024 traffic data and meteorological data were also used to be consistent with the verification year.

A7 To assess the effect of the Proposed Development on local air quality, 2024 was also used for the 'without Development' and 'with Development' scenarios. This represents a conservative assessment because vehicle emission rates in 2024 are higher than those anticipated in the future, due to the continued uptake of cleaner vehicles and more stringent vehicle-emission standards.

Model Uncertainty

A8 Analyses of historical monitoring data by Defra identified a disparity between actual measured NO_X and NO_2 concentrations and the expected decline associated with emission forecasts, which form the basis of air quality modelling as described above. In February 2020, Air Quality Consultants published a report on Performance of Defra's Emission Factor Toolkit 2013-2019[1]. The report concluded that recent analysis of recent NO_X measurements provides evidence that vehicle controls are working, and as a result, the Emission Factor Toolkit (EFT) is now reflecting the rate of observed reductions.

Traffic Data

A9 Traffic flow data comprising Annual Average Daily Traffic (AADT) flows, traffic composition (% HDVs – Heavy-Duty Vehicles) and speeds (in kph) were used in the model as provided by Mode Transport Planning for Longwalk and Bennetsfield roads. In addition, for the model verification and assessment scenarios, 2024 traffic data was taken from the Department for Transport website[2].

[1] *Air Quality Consultants. 2020. Performance of Defra's Emission Factor Toolkit 2013 – 2019, February 2020*
[2] *Department for Transport. 2025. Road traffic statistics. Available at: https://roadtraffic.dft.gov.uk/#6/55.254/-6.053/basemap-regions-countpoints*

A10 The assessment covers all vehicle traffic generated by the Proposed Development. Table 1 presents the traffic data used within the air quality assessment.

Table 1 Traffic Data used within the Assessment

Link Name	Speed (kph)	Base 2024		With Development	
		AADT	%HDV	AADT	%HDV
Longwalk Road	32	3,139	4.5	3,139	4.5
Stockley Road (A408) - DFT Count Point 8280	80	54682	6.4	54,682	6.4
Stockley Road (A408) - DFT Count Point 8280 slip road (25% flow)	80	13670.5	6.4	13,671	6.4
Stockley Road (A408) - DFT Count Point 8280 (75% flow)	80	41011.5	6.4	41,012	6.4
Roundabout Containing 50% of DFT Count Point 930262 and 25% of DFT Count Point 8280	20	15240	6.2	15,240	6.2
Blyth Road - DFT Count Point 942673	48	2719	4.2	2,719	4.2
Uxbridge Road - DFT Count Point 28118	32	20682	3.4	20,682	3.4
Nichollas Avenue - DFT Count Point 990028	32	423	4.7	423	4.7
Sipson Road - DFT Count Point 17024	32	6487	5.3	6,487	5.3
Bennetsfield Road	32	7,173	4.5	7,173	4.5
Longwalk Road and Bennetsfield Road Roundabout	20	2578	4.5	2,578	4.5

Vehicle Speeds

A11 To consider the presence of slow-moving traffic near junctions and at roundabouts within the model, the speed at each junction was reduced to 20 kph. This follows the criteria recommended within Defra's Local Air Quality Management Technical Guidance (LAQM.TG(22))[3], which considers that in most instances the two-way average speed for all vehicles at a junction would be in the range of 20-40 kph based on the estimate that:

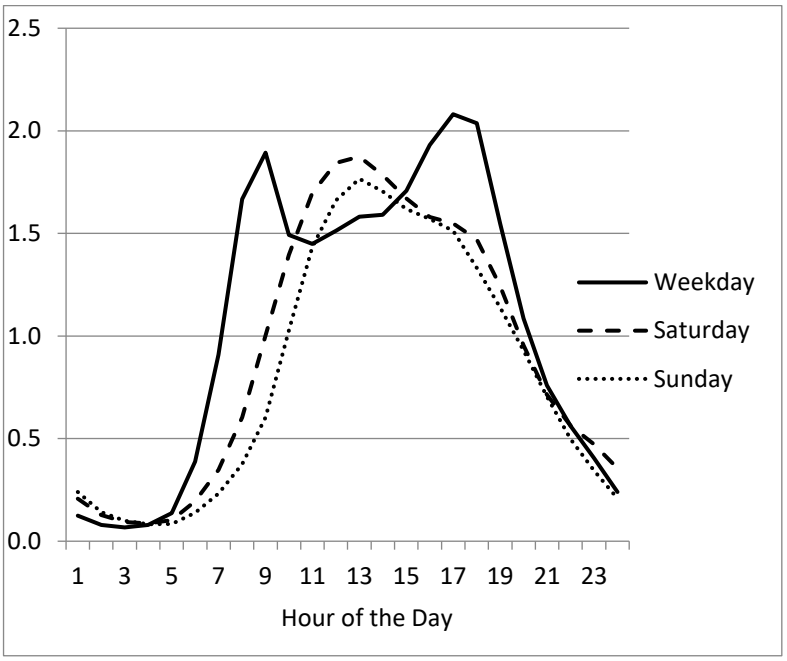
- Traffic pulling away from the lights, 40-50 kph;
- Traffic approach the lights when green, 20-50 kph; and
- Traffic on the carriageway approaching the lights when red, 5-20 kph, depending on the time of day and how congested the junction is.

Diurnal Profile

A12 Traffic flows follow a diurnal variation throughout the day and week. The ADMS-Roads model uses an hourly traffic flow based on the AADT flows and so a diurnal profile was used in the model to replicate how the average hourly traffic flow varies throughout the day and the week. The diurnal profile was based on data collated by Trium from the Department for Transport statistics 'Table TRA0307: Traffic Distribution by Time of Day on all roads in Great Britain', 2024[4]. Figure 1 presents the diurnal variation in traffic flows which was used within the model.

[3] *Defra. 2025. Local Air Quality Management Technical Guidance (TG22), May 2025*
[4] *Department for Transport. 2025. Emissions Factors Toolkit. Available at: https://laqm.defra.gov.uk/air-quality/air-quality-assessment/emissions-factors-toolkit/*

Figure 1 Department for Transport 2024 Diurnal Traffic Variation



Road Traffic Emission Factors

A13 Road-vehicle emissions were derived using Defra's Emissions Factors Toolkit (EFT) v14.1, released in May 2026, which incorporates updated COPERT emission factors published by the European Environment Agency.

A14 The model uses several parameters (traffic flow, percentage of HDV, speed and road type) to calculate road traffic emissions for the selected pollutants.

Street Canyon Effect

A15 Narrow streets with tall buildings on either side have the potential to create a confined space, which can interfere with the dispersion of traffic pollutants and may result in pollutant emissions accumulating in these streets. In an air quality model these narrow streets are described as street canyons.

A16 ADMS-Roads includes a street canyon model to take account of the additional turbulent flow patterns occurring inside such a narrow street with relatively tall buildings on both sides. LAQM.TG(22)[3] identifies a street canyon "*as narrow streets where the height of buildings on both sides of the road is greater than the road width*".

A17 Following a review of the road network to be included within the model, there was not considered to be any street canyons within the existing environment or following construction of the Proposed Development.

Energy Strategy

A18 The Proposed Development's energy strategy would not include a centralised combustion plant. If required later, any combustion plant would be assessed using relevant guidance when technical specifications are known. The energy strategy has therefore not been considered within the air quality assessment.

Background Pollutant Concentrations

A19 Background pollutant concentrations are pollution sources not directly considered in the dispersion modelling. Background pollutant concentrations have therefore been added to contributions from the modelled pollution sources, for each year of assessment.

A20 Forecast UK background concentrations of NO_x, NO_2, PM_{10} and $PM_{2.5}$ are available from the Defra LAQM Support website[5] for 1x1km grid squares for assessment years between 2021 and 2040, published in November 2024. Table 2 presents the Defra background concentrations for the years 2024 for the grid squares the site, receptors and model verification monitors are located within.

Table 2 Defra Background Maps in 2024 for receptor locations

Receptors	NO_2	PM_{10}	$PM_{2.5}$
HILL04	15.02	13.72	8.10
HILL18	18.00	13.77	8.16
HILL28	18.00	13.77	8.16
HILL40	20.54	13.77	7.98
R1 – R7	21.26	15.46	13.19
R8 – R11	24.34	17.37	13.53

A21 The background concentrations presented in Table 2 were used within the assessment.

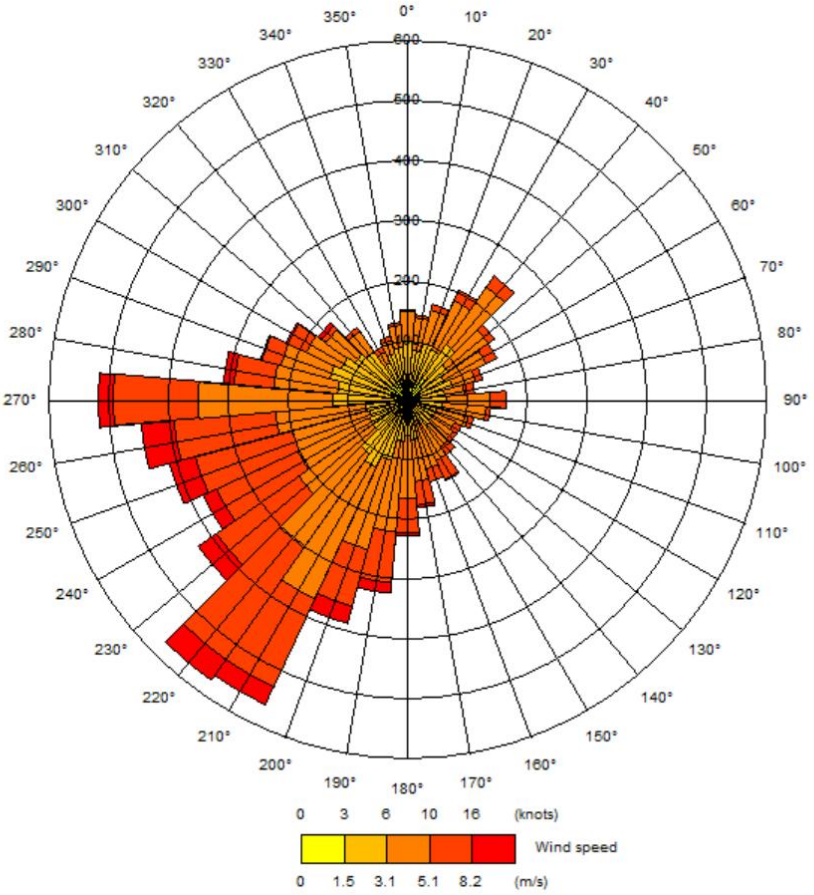
Meteorological Data

A22 Local meteorological conditions strongly influence the dispersal of pollutants. Key meteorological data for dispersion modelling include hourly sequential data including wind direction, wind speed, temperature, precipitation and the extent of cloud cover for each hour of a given year. As a minimum ADMS-Roads requires wind speed, wind direction, and cloud cover.

A23 Meteorological data used within the model was obtained from the London Heathrow meteorological Station, approximately 5km south of the site and considered to be the most representative. Missing data was infilled with data from Northolt meteorological Station, located approximately 6km north-east of the site. 2024 data was used to be consistent with the base traffic year and model verification year. Figure 2 presents the wind-rose for the meteorological data.

[5] *Department for Environment, Food & Rural Affairs. 2025. Background Mapping data for local authorities - 2021*

Figure 2 **2024 Wind Rose for the Heathrow Airport Meteorological Site**



A24 Most dispersion models do not use meteorological data if they relate to calm wind conditions, as dispersion of air pollutants is more difficult to calculate in these circumstances. ADMS-Roads treats calm wind conditions by setting the minimum wind speed to 0.75 m/s. LAQM.TG(22)[3] recommends the meteorological data file be tested within a dispersion model and the relevant output log file checked, to confirm the number of missing hours and calm hours that cannot be used by the dispersion model. This is important when considering predictions of high percentiles and the number of exceedances. LAQM.TG(22)[3] recommends that meteorological data should only be used if the percentage of usable hours is greater than 85%. 2024 meteorological data from the London Heathrow Meteorological Station, infilled with data from Northolt, includes 8,451 usable hours, equating to 96.2%, and above the 85% threshold.

A25 A surface roughness value of 0.5 was used for the London Heathrow meteorological Station. This value is representative of parkland/open suburbia and considered appropriate following a review of the local area surrounding the Heathrow meteorological station.

Model Data Processing

A26 The modelling results were processed to calculate the averaging periods required for comparison with the AQS objectives.

A27 NO_X emissions from combustion sources (including vehicle exhausts) comprise principally nitric oxide (NO) and nitrogen dioxide (NO_2). The emitted nitric oxide reacts with oxidants in the air (mainly ozone (O_3)) to form more NO_2. Since only NO_2 is associated with effects on human health, the air quality standards for the protection of human health are based on NO_2 and not total NO_X or NO.

A28 ADMS-Roads was run without the Chemistry Reaction option to allow verification (see below). Therefore, a suitable NO_X:NO_2 conversion was applied to the modelled NO_X concentrations as set out in LAQM.TG(22)[3] for roadside sites.

A29 The LAQM Support website provides a spreadsheet calculator[6] to calculate NO_2 concentrations from NO_x concentrations. The calculator accounts for the difference between primary emissions of NO_x and background NO_x, the concentration of O_3, and the different proportions of primary NO_2 emissions, in different years. This approach is only applicable to annual mean concentrations.

A30 Research undertaken in support of LAQM.TG(22)[3] indicates the 1-hour mean NO_2 AQO objective is unlikely to be exceeded at a roadside location where the annual-mean NO_2 concentration is less than 60µg/m^3. The 1-hour mean objective has therefore not been considered further within this assessment as the annual mean NO_2 concentration is predicted to be less than 60µg/m^3.

A31 To calculate the 24-hour mean PM_{10} (number of days exceeding 50µg/m^3), the relationship between the number of 24-hour mean exceedances and the annual mean PM_{10} concentration was applied as follows:

$$\text{Number of Exceedances} = -18.5 + 0.00145 \times (\text{annual mean}^3) + \frac{206}{\text{annual mean}}.$$

Other Model Parameters

A32 There are a number of other parameters that are used within the ADMS-Roads which are described here for completeness and transparency:

- the model requires a surface roughness value to be inputted.
  - a value of 1 was used for the site which is representative of 'Cities, woodlands'; and
  - a value of 0.5 was used for London Heathrow Meteorological Station which is representative of parkland and open suburbia;
- the model requires the Monin-Obukhov length (a measure of the stability of the atmosphere) to be inputted. A value of 100m (representative of Large Conurbations > 1,000,000) was used for the modelling; and
- the ADMS-Roads model requires the Road Type to be inputted. 'London [Outer]' was selected for the road links used in the model verification and 'London [Outer]' was used for the modelling of receptors in proximity to the site.

Model Verification

A33 Model verification is the process of comparing monitored and modelled pollutant concentrations for the same year, at the same locations, and adjusting modelled concentrations, if necessary, to be consistent with monitoring data. Model verification increases the robustness of modelling results.

A34 Discrepancies between modelled and measured concentrations can arise for a number of reasons, for example:

- traffic data uncertainties;
- background concentration estimates;
- meteorological data uncertainties;
- sources not explicitly included within the model (e.g. car parks and bus stops);
- overall model limitations (e.g. treatment of roughness and meteorological data, treatment of speeds); and
- uncertainty in monitoring data, particularly diffusion tubes.

A35 Verification is the process by which uncertainties such as those described above are investigated and minimised. Disparities between modelling and monitoring results are likely to arise as result of a combination of all the above aspects.

[6] *Department for Environment, Food & Rural Affairs. 2025. NOx to NO_2 Calculator v9.1, August 2024*

Nitrogen Dioxide

A36 The dispersion model was run to predict annual mean NO_x concentrations at the following diffusion tubes in LBH:

- HILL04 – Hillingdon Primary School, Uxbridge Road;
- HILL18 – Blyth Road, Hayes (lamp post 4); and
- HILL28 – Blyth Road, Hayes (lamp post 17, the westernmost lamp post in front of 133 Enterprise House); and
- HILL40 – zone sign at the corner of Sipson Close and Sipson Road.

A37 These roadside diffusion tube monitoring locations were considered most suitable for model verification. Other diffusion tubes in the locality of the site did not have suitable traffic data or were located under building overhangs and not open to the sky. In accordance with the LAQM.TG(22)[3] these diffusion tubes were not considered suitable for verification and were discounted.

A38 Table 3 compares the modelled and equivalent measured roadside NO_2 concentrations at the diffusion tube sites.

Table 3 Annual Mean NO_2 Modelled and Monitored Concentrations

Site ID	Monitored Annual Mean NO_2 ($\mu g/m^3$)	Modelled Total Annual Mean NO_2 ($\mu g/m^3$)	% Difference
HILL04	20.0	21.15	6%
HILL18	22.9	23.19	1%
HILL28	18.8	19.12	2%
HILL40	24.1	24.87	3%

A39 Table 3 indicates that the model slightly over-predicts total annual mean NO_2 concentrations at all four diffusion tube locations, with differences between modelled and monitored concentrations ranging from 1% to 6%. In accordance with Box 7-17 of LAQM.TG(22)[3] Box 7-17, where the majority of results are within 25%, and preferably within 10%, of monitored concentrations, model adjustment is not necessarily required. As all results are within 10%, adjustment of the modelling results was not undertaken.

Particulate Matter (PM_{10} and $PM_{2.5}$)

A40 As the model verification for NO_2 indicated good agreement between modelled and monitored concentrations, no adjustment factor was applied to the modelled roadside PM_{10} or $PM_{2.5}$ results.

Statistical Analysis

A41 To confirm the model is performing well further, statistical analysis of the performance of the modelled results has been undertaken using the methodology detailed in LAQM.TG(22)[3] Box 7.21: Methods and Formulae for Description of Model Uncertainty. Statistical analysis checks the performance of the model used and the accuracy of the results (observed vs predicted).

A42 The methodology for the calculations is presented in LAQM.TG(22)[3] for the following:

- Correlation Coefficient: Measures the linear relationship between the predicted and observed data. A value of zero means no relationship and a value of 1 means an absolute relationship. This statistic can be particularly useful when comparing many model and observed data points.
- Fractional Bias: Identifies if the model shows a systematic tendency to over or under predict. Values very between +2 and -2 with an ideal value of zero. Negative values suggest a model over-prediction and positive values suggest a model under-prediction.
- Root Mean Square Error: Defines the average error or uncertainty of the model. The units of the Root Mean Square Error are the same as the quantities compared.

A43 The results of the statistical calculation are presented in Table 4.

Table 4 Statistical Calculations of Error for the Modelled Results

Statistical Calculation	Perfect Value	Acceptable Variable Tolerance	Unadjusted Model Score
Correlation Coefficient	1	N/A	0.986
Fractional Bias	0	+2 to -2	0.725
Root Mean Square Error	0	±10	-0.029

A44 Based on the results presented in Table 4, it is considered the model is performing well. There is no systematic over or under prediction of results and the root mean square error is within the acceptable tolerance levels. The statistical analysis confirms that further model adjustment is not necessary.

Verification Summary

A45 Any atmospheric dispersion model study will always have a degree of inaccuracy due to a variety of factors. Factors include uncertainties in traffic emissions data, the differences between available meteorological data and the specific microclimate at each receptor location, and simplifications made in the model algorithms that describe the atmospheric dispersion and chemical processes. There will also be uncertainty in the comparison of predicted concentrations with monitored data, given the potential for errors and uncertainty in sampling methodology (technique, location, handling, and analysis) as well as processing of any monitoring data.

A46 Whilst systematic under or over prediction can be considered through the model verification process, random errors will inevitably occur and a level of uncertainty will still exist in corrected/adjusted data.

A47 Model uncertainties arise because of limited scientific knowledge, limited ability to assess the uncertainty of model inputs, for example, emissions from vehicles, poor understanding of the interaction between model and / or emissions inventory parameters, sampling and measurement error associated with monitoring sites and whether the model itself completely describes all the necessary atmospheric processes.

A48 Overall, it is concluded that with the adjustment factors applied to the ADMS-Roads model, the model is performing well and modelled results are considered to be suitable to determine the potential effects of the Proposed Development on local air quality.

Assessor Experience

- Name: Andy Fowler
- Years of Experience: 15
- Qualifications:
  - CEnv
  - BSc (Hons)
  - Member of the IAQM
  - Full Member of the Institution of Environmental Sciences (IES)

Andy has been responsible for the technical delivery of a wide range of air quality projects for a variety of clients in both the public and private sector. These projects include consideration of emissions from both transportation and industrial sources, through both monitoring and modelling, and therefore he has an in depth understanding of the regulatory requirements for these sources and the published technical guidance for their assessment.

- Name: Alex Forest
- Years of Experience: 3
- Qualifications:
  - MSc (Hons), BSc (Hons)
  - Associate Member of the IAQM
  - Associate Member of the Institution of Environmental Sciences (IES)

Alex has supported the technical delivery of a range of air quality projects for clients in both the public and private sector. His experience includes assisting with assessments of emissions from transport and industrial sources, including the review of monitoring data and the use of dispersion modelling. Through this work, he has developed a sound understanding of relevant regulatory requirements and published technical guidance for air quality assessment.

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