



Holland and Holland
Artisan Gun Making Workshop
Harefield, Northwood
HA6 2ST

Air Quality Assessment

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Client: Environmental Engineering Partnership
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For Information

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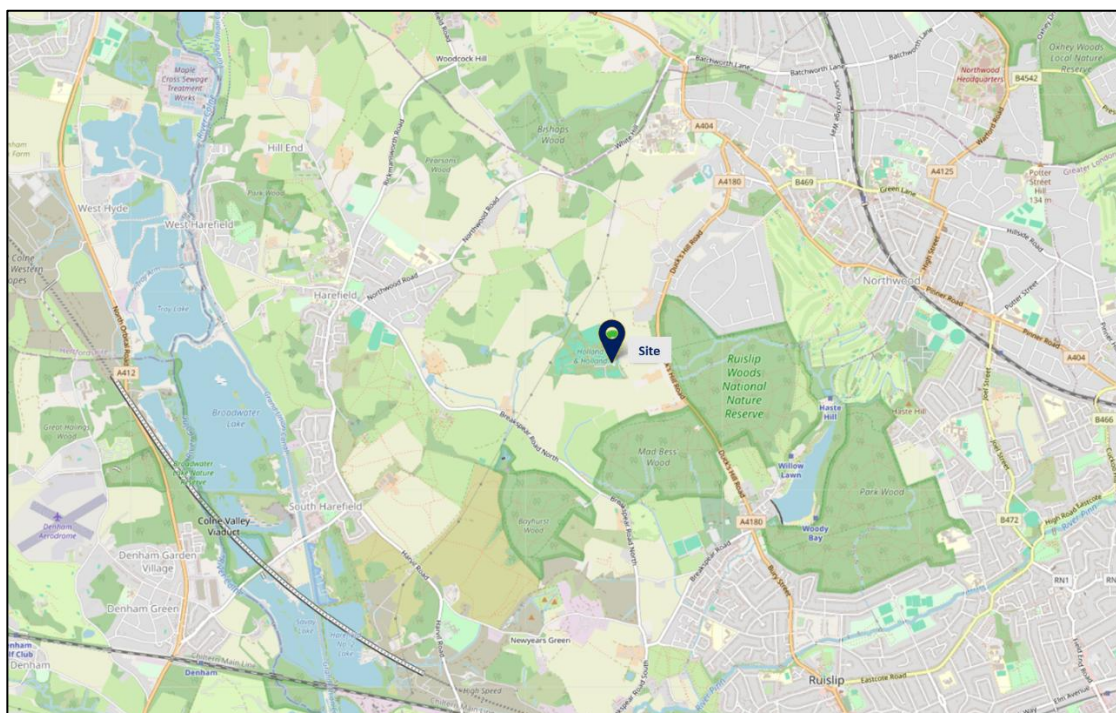
1.0 INTRODUCTION

- 1.1 Quantum Air Ltd has been commissioned by Environmental Engineering Partnership (EEP) to prepare this Air Quality Assessment to support the planning application to deliver the demolition of existing site buildings and construction of new workshop and training facilities at Holland & Holland - Artisan Gun Making Workshop, Northwood.
- 1.2 When considering the potential air quality impacts in relation to such development, there are four fundamental air quality considerations:
- First, the significance of existing, baseline levels of pollutants and whether existing pollutant concentrations pose a health risk or nuisance to existing and future receptors.
 - Second, the potential significance of pollutants arising during the construction stage of the development and whether pollutant emissions will have health impacts or create nuisance for existing receptors (and future receptors, should these come into being during the proposed construction programme);
 - Third, the potential significance of pollutants arising during the operational stage of the development, including pollution associated with additional traffic that may be generated by the development and emissions associated with the building services such as heating and;
 - Fourth, the potential significance of pollutants during the construction and operational phases of the development in the context of any neighbouring protected habitats / sites.
- 1.3 This report therefore presents a review of existing baseline pollutant concentrations at the site and construction, transport and any other operational emissions to determine whether this raises any health concerns in the context of air quality objectives for England.
- 1.4 This report is structured as follows:
- **Section 2** describes the location of the site;
 - **Section 3** presents the development proposals for the site;
 - **Section 4** provides a commentary on air quality related legislation, governmental and regional air quality strategies and policies and national and local planning guidance;
 - **Section 5** reviews background concentrations of pollutants;
 - **Section 6** assesses the significance of pollutants based on Air Quality Objectives for England;
 - **Section 7** assesses the construction dust and its mitigation;
 - **Section 8** assesses the transport emissions due to the proposed development site;
 - **Section 9** assesses the operational impacts at the proposed development site;
 - **Section 10** assesses the air quality neutral requirements for the proposed development site and Conclusions are presented in **Section 11**.

2.0 SITE DESCRIPTION

- 2.1 The proposed development site is located within the jurisdiction of London Borough of Hillingdon (LBH).
- 2.2 The site is located in Ducks Hill Road, Northwood, which is roughly 17–18 miles north-west of central London, shown in the figure below.

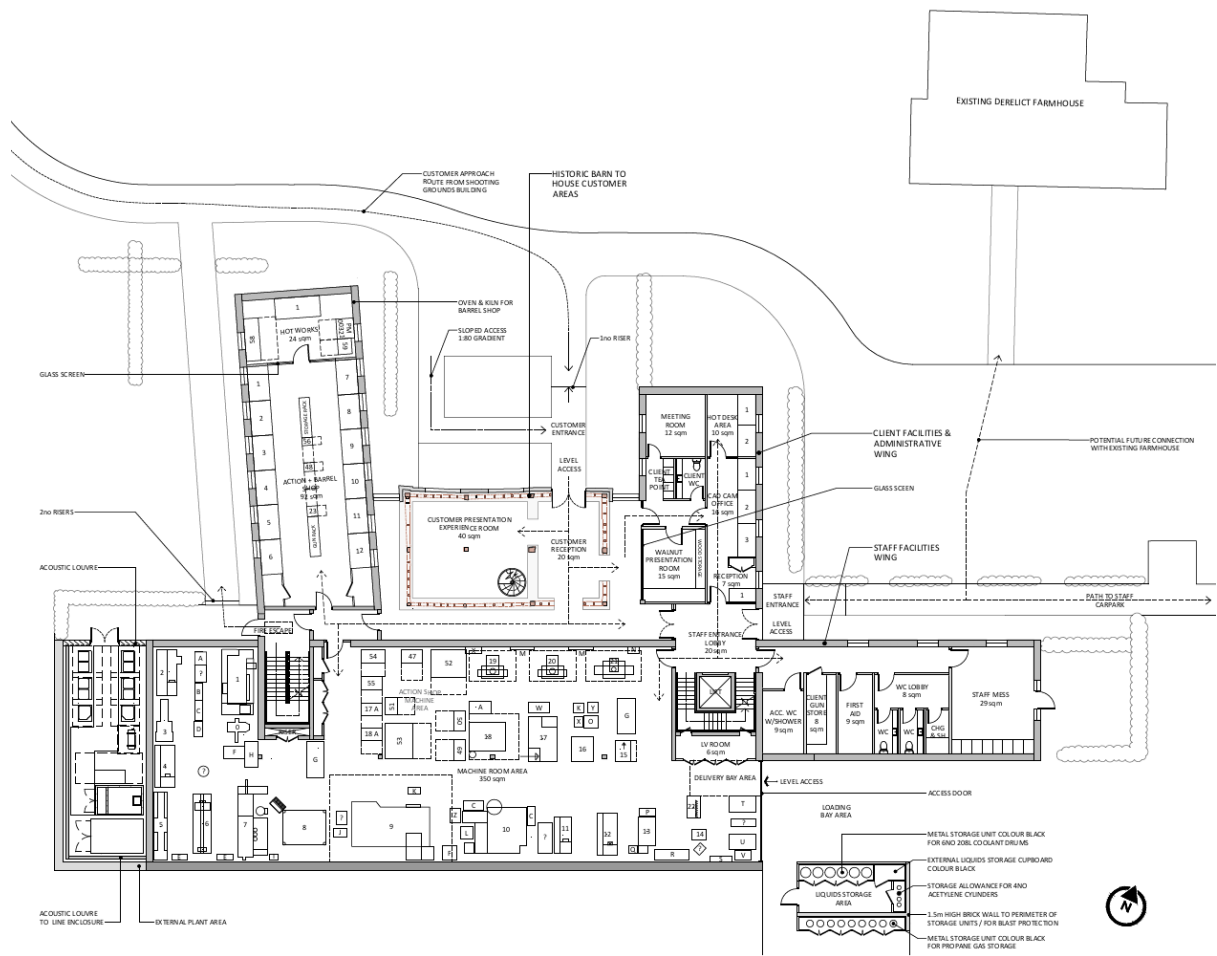
Site Location Plan (© OpenStreetMap Contributors, 2024)



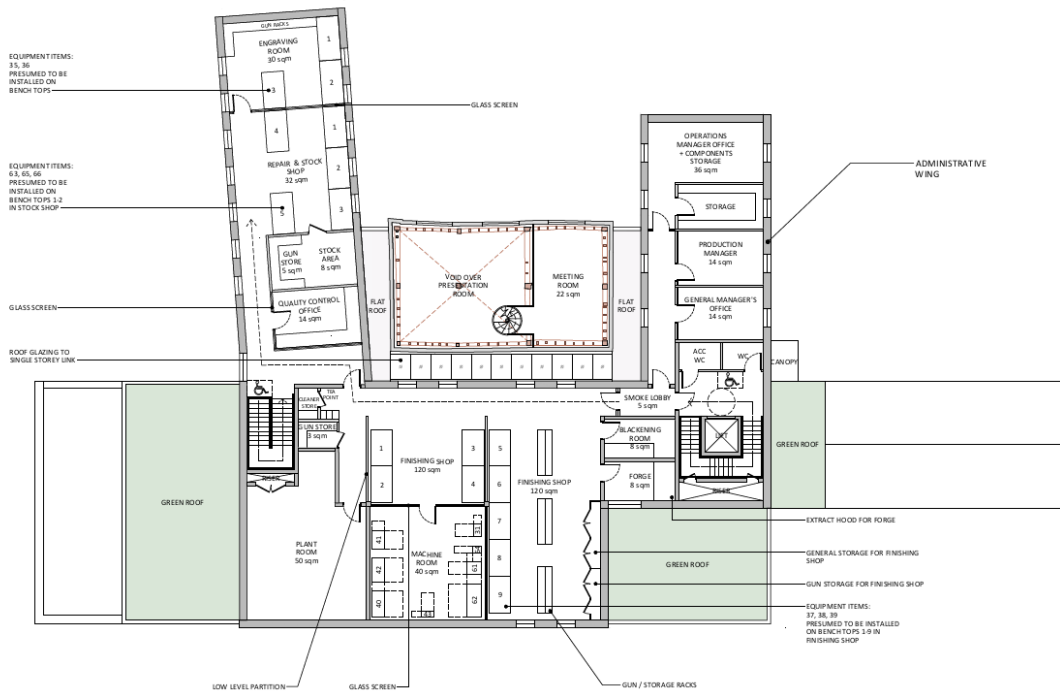
- 2.3 The site is well connected, with Northwood Underground Station approximately a 15–20-minute walk away and West Ruislip Station located around 3.5–4.5 km from the site. It is accessed via Ducks Hill Road from the A4180 and is within easy reach of the M25 and M40 motorways.
- 2.4 The site contains a series of outdoor clay shooting layouts, rifle ranges, landscaped shooting stands, earth bunds/backstops, access tracks, areas of hardstanding, and a main lodge building with associated facilities and parking. The built form is dispersed across the site and generally set within a well-screened rural environment.
- 2.5 The surrounding area is characterised by open countryside, woodland, and low-density residential development, reflecting the semi-rural character of this part of north-west London. Access to the site is taken from Ducks Hill Road through a private entrance.

3.0 PROPOSED DEVELOPMENT

- 3.1 The proposed development is for the “Demolition of the existing site buildings (with central timber framed barn retained), removal of existing hardstanding and menage area and the redevelopment of the site to provide a new high quality workshop facility including associated access improvements, parking, hard and soft landscaping, sustainable drainage and ecological enhancements.”
- 3.2 The proposed site plan drawings are shown below:



Proposed Ground Floor plan



Proposed First Floor plan

4.0 LEGISLATION AND PLANNING POLICY CONTEXT

Legislation

The Environment Act 1995

- 4.1 Part IV of the Environment Act 1995 (as amended) requires the UK Government to publish an “Air Quality Strategy” (AQS) every five years. The AQS is required to set out air quality standards, objectives and measures for improving ambient air quality within the UK. In addition to the protection of human health, the AQS must also set standards and objectives for the protection of vegetation and ecosystems.
- 4.2 The Act also sets out requirements for the Local Air Quality Management (LAQM) regime, which imposes duties on Local Authorities to regularly review and assess air quality within its area.
- 4.3 In addition to the protection of human health, the AQS also sets standard and objectives for the protection of vegetation and ecosystems.

The Air Quality (England) Regulations 2000 (as amended)

- 4.4 The Air Quality (England) Regulations 2000 set out quantitative Air Quality Objectives (AQO’s) for England. Pollutants covered include benzene, 1,3-butadiene, carbon monoxide, lead, nitrogen dioxide particulate matter (PM10) and sulphur dioxide.
- 4.5 The Air Quality (England) (Amendment) Regulations 2002 introduced amended AQO’s for benzene and carbon monoxide.
- 4.6 All Air Quality Objectives (AQO’s) objectives include compliance dates, taking account of the economic considerations, practicability and technical feasibility of their delivery.
- 4.7 AQO’s apply at locations where members of the public are regularly present. Where any of the prescribed AQO’s are not likely to be achieved within any part of a Local Authority’s area, the authority concerned must designate that part of its area as an “Air Quality Management Area” (AQMA). An action plan covering the designated area will then have to be prepared setting out how the authority intends to exercise its powers in relation to the designated area in pursuit of the achievement of the prescribed AQO’s.

Air Quality Standards Regulations (2010) (as amended)

- 4.8 The Air Quality Standards Regulations 2010 transpose AQO’s defined in EU Ambient Air Quality Directive (2008/50/EC) and the Fourth Daughter Directive (2004/107/EC) into UK legislation.
- 4.9 The Air Quality Standards (Amendment) Regulations 2016 amend the 2010 Regulations, including updated definitions for Directive 2008/50/EC and Directive 2004/107/EC: adjustments to the criteria

for the location and operation of air quality monitoring stations and new requirements for documents and reviewing the selection of monitoring sites.

Conservation of Habitats and Species Regulations 2017 (as amended)

- 4.10 The Conservation of Habitats and Species Regulations (as amended) are a key piece of UK Legislation aimed at conserving biodiversity by protecting habitats and species. The Regulations essentially transpose the requirements of EU Wild Birds Directive (2009/147/2009) and EU Habitats Directive (92/43/EEC).
- 4.11 The Regulations require the designation of protected habitats sites, protection of listed species and ensuring that any project that might have a significant adverse effect on a protected site is appropriately assessed and, if required, effects mitigated.
- 4.12 The Regulations were amended by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 to ensure the continued effectiveness of the 2017 Regulations, but transferring responsibilities previously held by EU Institutions to UK bodies and other legal and practical continuity updates.

The Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020

- 4.13 The Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020 were introduced to address minor errors and ensure the continued effectiveness of environmental laws in the UK post-Brexit.
- 4.14 The most significant amendment was to the AQO for PM_{2.5}, to ensure that this aligned with the UK's air quality objectives.

Environment Act 2021

- 4.15 The Environment Act 2021 introduces several significant measures aimed at improving air quality management in the UK, including:
- 4.16 The setting of short-term and long-term air quality targets. Of particular note, is a legally binding target for reducing fine particulate matter (PM_{2.5}) in ambient air;
- 4.17 A requirement for the Secretary of State to review the air quality strategy at least every five years and produce an annual report to Parliament on progress towards meeting air quality objectives;
- 4.18 Enhancing the LAQM framework requiring greater cooperation between local authorities and other relevant public bodies to improve air quality;
- 4.19 A requirement for Local Authorities to declare Air Quality Management Areas (AQMA's) within 12 months of identifying an exceedance of air quality objectives and produce an Air Quality Action Plan within 18 months;

- 4.20 Amendments to the Clean Air Act 1993 to allow local authorities to impose civil penalties for breaches in smoke control areas, replacing the existing criminal offence. This specifically aims to reduce PM2.5 emissions from domestic stoves and fires;
- 4.21 Creating a power for the recall of vehicles and engines that do not meet environmental standards, including air emissions standards; and
- 4.22 Designating National Highways as a “Relevant Public Authority” and creating a legal requirement for it to work with local authorities to meet air quality standards and objectives on road networks.

Environmental Targets (Fine Particulate Matter) (England) Regulations 2023

- 4.23 These Regulations set out specific targets for the reduction of fine particulate matter (PM2.5). Key targets include:
 - 4.24 A requirement to reduce the annual mean concentration of PM2.5 to 10 µg/m³ nationwide by 2040, with an interim target of 12 µg/m³ to be achieved by January 2028; and
 - 4.25 A 35% reduction in average population exposure to PM2.5 by 2040, with an interim target of a 22% reduction by January 2028 (both compared to 2018 baseline concentrations).
- 4.26 These new targets have been imposed to drive reductions in the worst PM2.5 hotspots across the country, whilst ensuring an overall nationwide improvement in air quality.

Environmental Protection Act 1990

- 4.27 Construction works may give rise to dust emissions, including coarse (PM10) and fine (PM2.5) particulate matter. The unreasonable exposure of individuals to dust is a matter that can be directly enforced through the provision of the Environmental Protection Act 1990, where it is held that such emissions constitute a “statutory nuisance”. For the purposes of the regulations, statutory nuisances related to air quality matters include:
 - “...b - smoke emitted from premises so as to be prejudicial to health or a nuisance.*
 - c - fumes or gases emitted from premises so as to be prejudicial to health or a nuisance.*
 - d - any dust, steam, smell or other effluvia arising on industrial, trade or business premises and being prejudicial to health or a nuisance...”.*
- 4.28 Section 79 of the Act requires that, where a complaint regarding air quality matters falling within the remit of the Act is made by a person living within its area, a Local Authority must take reasonably practicable steps to investigate the complaint. There are no numerical thresholds which define “acceptability”, however, where the Local Authority is satisfied that a statutory nuisance exists (or could occur), it is required to service an “Abatement Notice” under Section 80 of the Act (subject to a period of seven days when alternative steps for the abatement of the nuisance can be explored).
- 4.29 Section 82 of the Act gives an aggrieved individual the power to apply directly to a Magistrates Court to seek an order for the abatement of an alleged nuisance.

Governmental Air Quality Policies and Strategies

Air Quality Plan for Nitrogen Dioxide (NO₂) in the UK (2017)

- 4.30 The Air Quality Plan for Nitrogen Dioxide (NO₂) in the UK outlines the government's strategy to reduce roadside NO₂ concentrations and meet statutory air quality limits. Key objectives include:
- Reducing NO₂ emissions from vehicles, particularly diesel cars;
 - Requiring local authorities to develop and implement measures to achieve compliance with NO₂ limits in the shortest possible time;
 - Promotes the adoption of cleaner transport options, such as electric vehicles and public transportation;
 - The implementation of enhanced monitoring and reporting mechanisms to track progress and ensure transparency.
 - To protect public health, particularly in urban areas where pollution levels are highest.

Clean Air Strategy (2019)

- 4.31 DEFRA published its "Clean Air Strategy" in 2019 to tackle air pollution comprehensively across the UK. Key objectives include:
- Reducing exposure of harmful pollutants, most particularly fine particulate matter (PM_{2.5}) and nitrogen dioxide (NO₂);
 - Reducing pollutant emissions from transport, industry, agriculture and domestic heating;
 - Promoting the development and adoption of environmentally cleaner technologies and practices to support economic growth;
 - Reducing the impact of air pollution on the natural environment, including ecosystems and biodiversity; and
 - Improving the monitoring and reporting of air quality to promote transparency and accountability in progress towards cleaner air.

Environment Improvement Plan (2023)

- 4.32 DEFRA's "Environment Improvement Plan 2023" is the first revision of the UK's Government's "25 Year Environment Plan" and sets out a detailed roadmap to enhance the natural environment in England. It builds on the Clean Air Strategy 2019, promoting the following key objectives:
- Limiting declines in biodiversity by creating and restoring wildlife habitats;

- Improving air and water quality, reducing pollution, and managing exposure to chemicals and pesticides.
- Promoting a circular economy to maximise resource efficiency and minimizing waste
- Mitigating and adapting to climate change through sustainable practices and green finance initiatives.
- Boosting “green” jobs and support farmers in adopting nature-friendly practices.

Air Quality Strategy (2023)

4.33 The latest “Air Quality Strategy” was published by DEFRA in April 2023. The strategy aims to improve air quality across England by setting out a comprehensive framework for local authorities. Key objectives include:

- Achieving long term air quality goals, including ambitious targets in relation to fine particulate matter (PM2.5).
- Providing guidance and tools to help local council’s effectively use their powers to reduce pollution and improve air quality;
- A focus on the reduction of emissions from industrial sources, domestic burning and transportation, including the stricter enforcement of environmental permits and promoting cleaner fuels;
- Promoting training, guidance and knowledge sharing among local authorities to ensure they are equipped to tackle air quality issues.

4.34 As noted earlier, this report seeks to present an air quality assessment for the proposed development. When considering the potential significance of pollution from demolition, construction and construction traffic, the principal pollutants of concern are nitrogen dioxide (NO₂) and particulate matter of size 10 and 2.5 microns (PM₁₀ and PM_{2.5}). Relevant Air Quality Objectives for these pollutants set out in the AQS are summarised in Table below.

Air Quality Objectives in the UK			
Pollutant	Concentration	Measured As	Date to be achieved by (and maintained thereafter)
Nitrogen Dioxide (NO ₂)	200 µg/m ³	1-hour mean not to be exceeded more than 18 times per year	31/12/2005
	40 µg/m ³	Annual mean	31/12/2005

Air Quality Objectives in the UK			
Pollutant	Concentration	Measured As	Date to be achieved by (and maintained thereafter)
Particles (PM ₁₀)	50 µg/m ³	24-hour mean not to be exceeded more than 35 times per year	31/12/2004
	40 µg/m ³	Annual mean	31/12/2004
Particles (PM _{2.5})	20 µg/m ³	Annual mean	2020
	Target of 15% reduction in concentrations at urban background		Between 2010 and 2020
	12 µg/m ³	Interim annual mean target to be achieved by 2028	2028*
	Target of 22% reduction in average population exposure		
	10 µg/m ³	Legally binding nationwide annual mean target to be achieved by 2040	2040**
	Target of 35% reduction in average population exposure		

*Note: Interim PM_{2.5} targets are to be achieved by 2028.

*Note: Legally binding PM_{2.5} targets are to be achieved by 2040.

National Planning Policy

National Planning Policy Framework

- 4.35 The latest version of the NPPF was published in December 2024. The overall environmental objective of national planning policy is “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.”
- 4.36 Section 9 promotes sustainable transport. In relation to air quality, paragraph 109 states that:
- “Transport issues should be considered from the earliest stages of plan-making and development proposals, using a vision-led approach to identify transport solutions that deliver well-designed, sustainable and popular places. This should involve:...”*

(...)

e) identifying and pursuing opportunities to promote walking, cycling and public transport use are identified and pursued;

f) identifying, assessing and taking into account the environmental impacts of traffic and transport infrastructure – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains.

4.37 Additionally, paragraph 110 states:

"The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions and improve air quality and public health..."

4.38 Section 15 'Conserving and enhancing the natural environment' sets out the following policy requirements in relation to air quality:

4.39 Paragraph 187:

"Planning policies and decisions should contribute to and enhance the natural and local environment by:...

...e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of 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, taking into account relevant information such as river basin management plans; ..."

4.40 Paragraph 198:

"Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development..."

4.41 Paragraph 199:

"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".

4.42 In relation to the decision-making process, paragraph 56 and 57 of the NPPF states:

"Local planning authorities should consider whether otherwise unacceptable development could be made acceptable through the use of conditions or planning obligations. Planning obligations should only be used where it is not possible to address unacceptable impacts through a planning condition.

Planning conditions should be kept to a minimum and only imposed where they are necessary, relevant to planning and the development to be permitted, enforceable, precise and reasonable in all other respects...."

Planning Practice Guidance – Air Quality

4.43 The Planning Practice Guidance (PPG) is used to support the National Planning Policy Framework and is published online. The guidance on air quality was originally published in 2014 and updated in November 2019. The PPG provides various principles on how planning can take account of the impact of new development on air quality.

4.44 Paragraph 001 Reference ID 32-001-20191101:

"What air quality considerations the planning regime needs to address?"

4.45 The NPPF Air Quality guidance includes references to relevant legislation, government policy, guidance, datasets and tools which can be utilised when assessing Air Quality.

4.46 Paragraph 002 Reference ID : 32-002-20191101:

"What is the role of plan-making with regard to air quality?"

It is important to take into account air quality management areas, Clean Air Zones, and other areas including sensitive habitats or designated sites of importance for biodiversity where there could be specific requirements or limitations on new development because of air quality".

4.47 Paragraph 005 Reference ID : 32-005-20191101:

"When could air quality consideration be relevant to the development management process?"

Whether air quality is relevant to a planning decision will depend on the proposed development and its location. Concerns could arise if the development is likely to have an adverse effect on air quality in areas where it is already known to be poor, particularly if it could affect the implementation of air quality strategies and action plans and/or breach legal obligations (including those relating to the conservation of

habitats and species). Air quality may also be a material consideration if the proposed development would be particularly sensitive to poor air quality in its vicinity.

Where air quality is a relevant consideration the local planning authority may need to establish:

- *the 'baseline' local air quality, including what would happen to air quality in the absence of the development;*
- *whether the proposed development could significantly change air quality during the construction and operational phases (and the consequences of this for public health and biodiversity); and*
- *whether occupiers or users of the development could experience poor living conditions or health due to poor air quality...".*

4.48 Paragraph 006 Reference ID : 32-006-20191101:

"What specific issues may need to be considered when assessing air quality impacts?

Considerations that may be relevant to determining a planning application include whether the development would:

- *Lead to changes (including any potential reductions) in vehicle-related emissions in the immediate vicinity of the proposed development or further afield. This could be through the provision of electric vehicle charging infrastructure; altering the level of traffic congestion; significantly changing traffic volumes, vehicle speeds or both; or significantly altering the traffic composition on local roads. Other matters to consider include whether the proposal involves the development of a bus station, coach or lorry park; could add to turnover in a large car park; or involve construction sites that would generate large Heavy Goods Vehicle flows over a period of a year or more;*
- *Introduce new point sources of air pollution. This could include furnaces which require prior notification to local authorities; biomass boilers or biomass-fuelled Combined Heat and Power plant; centralised boilers or plant burning other fuels within or close to an air quality management area or introduce relevant combustion within a Smoke Control Area; or extraction systems (including chimneys) which require approval or permits under pollution control legislation;*
- *Expose people to harmful concentrations of air pollutants, including dust. This could be by building new homes, schools, workplaces or other development in places with poor air quality;*
- *Give rise to potentially unacceptable impacts (such as dust) during construction for nearby sensitive locations;*

- *Have a potential adverse effect on biodiversity, especially where it would affect sites designated for their biodiversity value."*

4.49 Paragraph 007 Reference ID : 32-007-20191101:

"How detailed does an air quality assessment need to be?"

Assessments need to be proportionate to the nature and scale of development proposed and the potential impacts (taking into account existing air quality conditions", and because of this are likely to be locationally specific)...".

4.50 Paragraph 008 Reference ID : 32-008-20191101:

"How can an impact on air quality be mitigated?"

"Mitigation option will need to be locationally specific, will depend on the proposed development and need to be proportionate to the likely impact. It is important that local planning authorities work with the applicants to consider appropriate mitigation so as to ensure new development is appropriate for its location and unacceptable risks are prevented...".

Local Planning Policy

Air Quality Strategy for LBH

- 4.51 The London Borough of Hillingdon is actively committed to improving local air quality and protecting public health through a strategic approach centred on monitoring, emission reduction and community engagement.
- 4.52 As part of its statutory duty under the UK's Local Air Quality Management (LAQM) framework, the Council prepares Air Quality Action Plans (AQAPs) to identify how air pollution will be assessed and mitigated in the borough.
- 4.53 The key elements of LBH's air quality strategy includes:

Reducing pollutant emissions

- The council emphasises the importance of lowering emissions from key sources such as vehicles and buildings. It aims to reduce exposure to nitrogen dioxide (NO₂), particulate matter (PM10 and PM2.5) and other harmful pollutants, recognising their impacts on respiratory and cardiovascular health.

Targeted actions to reduce emissions

- **Monitoring and reporting:** Proper monitoring of ambient air including maintaining and expanding air quality monitoring networks.
- **Cleaner transport:** Implementing cleaner transport networks by encouraging low-emission vehicles, active travel (walking and cycling), and measures to reduce congestion and idling.

- Urban environment enhancements: Upgrading the council's urban spaces through sustainable, ecological, and functional improvements to reduce pollution in areas where residents are most affected.
- Protecting vulnerable groups: The vulnerable groups such as children, the elderly, pregnant people, and those with pre-existing cardiac/pulmonary conditions, through targeted interventions and awareness campaigns.
- Education and awareness: Educating and raising public awareness on the understanding of health impacts and ways to improve air quality.

Planning, Development and Construction

- Hillingdon integrates air quality considerations into the planning process to ensure that new developments minimise adverse effects. Planning measures are used to control emissions from construction and operational phases of development proposals. This will be achieved by enforcing the planners to adhere to the following actions:
- All major developments and planning applications
 - Need to meet Air Quality Neutral standards and submit robust Air Quality Assessments identifying both construction and operational impacts.
 - Enforce stringent NRM standards, requiring Stage V-compliant plant and mandatory registration.
 - Mandate Construction Environmental Management Plans (CEMPs) including dust suppression, track-out control, and real-time PM monitoring for high-risk sites.
 - Integrate green infrastructure, such as street trees, green walls and vegetated buffers, especially near schools and busy transport corridors.
 - Utilize low-emission heating technologies (e.g., heat pumps) to avoid NO_x emissions from gas combustion in new developments.

Reducing inequalities in exposure

- The strategy also commits to addressing inequalities in exposure to poor air quality, with particular attention to areas most affected by traffic, industrial emissions and Heathrow Airport impacts.
- Implement School Air Quality Zones, restricting idling, improving walking routes, and installing protective planting schemes.
- Conduct Clean Air Education Campaigns, raising awareness of sources, health impacts, and behavioural actions residents can take.
- Deploy mobile monitoring units during community events and around new developments to help understand short-term pollution patterns.

Collaboration and statutory compliance

- Delivery of this strategy requires cross-departmental collaboration between Environmental Health, Planning, Highways, Public Health, and Climate Action teams. Strong partnerships with TFL, Heathrow Airport, local schools, community groups, and neighbouring boroughs will help deliver consistency and maximise impact.
- Regular stakeholder engagement will ensure actions remain adaptive to new evidence, technological changes, and evolving policy requirements such as London-wide ULEZ and national air quality targets.

4.54 Hillingdon's air quality strategy is a comprehensive and proactive framework that integrates emission reduction, robust planning controls, high-quality monitoring, and meaningful community engagement to protect public health and deliver long-term improvements in air quality across the borough. By coordinating transport measures, development regulation, data-driven assessment and targeted local interventions, the strategy provides a clear path toward cleaner air, healthier communities and a more resilient future for Hillingdon.

Air Quality Action Plan for LBH

4.55 The London Borough of Hillingdon has developed an Air Quality Action Plan (AQAP) for 2025–2030 as part of its statutory duties under the London Local Air Quality Management (LLAQM) framework. The AQAP sets out the Council's approach to improving air quality, reducing residents' exposure to harmful pollutants, and supporting public health and wellbeing.

4.56 The AQAP aims to deliver a set of strategic outcomes aligned with the Council's broader goals, including:

- Reduction of pollutant emissions as far as possible, ensuring emissions are mitigated wherever feasible.
- Lower the air pollutant concentrations, with a focus on WHO guideline levels rather than just legal limits.
- Removing inequalities in exposure, by protecting vulnerable groups and communities most affected by poor air quality.
- Embedding air quality considerations within the planning system to ensure new development does not worsen conditions and where possible contributes to improvements.
- Raising public awareness of air pollution's health impacts and informing residents and stakeholders about prevention actions.
- Influencing change through regular stakeholder engagements and cross-departmental collaboration across council services and with partners

- 4.57 The AQAP is structured around a series of themes that cover key sources and drivers of air pollution, including:
- Monitoring and reporting – enhanced networks to better understand pollutant levels and trends.
 - Cleaner transport and sustainable travel – promoting walking, cycling, low-emission vehicles and reduced traffic emissions.
 - Reduction of emissions from buildings and developments – using planning controls and enforcement to limit construction and building emissions.
 - Protecting vulnerable people – targeted measures around schools, healthcare settings and other sensitive locations.
 - Public awareness and education – campaigns to increase understanding of health impacts and actions individuals and organisations can take.
 - Partnership and influence – working with regional and national bodies to address sources beyond the Council’s direct control.
- 4.58 The AQAP 2025–2030 has been approved for consultation and is subject to engagement with stakeholders and residents before formal adoption.
- 4.59 The Council emphasises continued action on enforcement (e.g. anti-idling), planning integration, and long-term strategic improvements to air quality across the borough.
- 4.60 There is a clear focus on aligning local actions with broader policy aspirations, including WHO guidelines and London-wide initiatives.

Non-Regulatory Thresholds

- 4.61 The World Health Organization (WHO) released its “Air Quality Guidelines Global Update” in 2005, which was published in 2006. The update included “Air Quality Guidelines” (AQG’s) to reduce public health impacts from the adverse effects of air pollution including health impacts such as respiratory and cardiovascular diseases and premature death.
- 4.62 The guidelines were updated in 2021, in response to more recent epidemiological studies which indicate adverse effects at lower levels than had previously observed. In recognition of the difficulty of meeting the AQGs in many jurisdictions, the WHO guidance also proposed a series of Interim Targets (IT’s) which represent steps towards achieving the AQG’s.
- 4.63 The AQG’s are set out in the table below.

WHO Guidelines and Interim Targets						
Pollutant	Time Period	Interim Target Level, $\mu\text{g}/\text{m}^3$				Air Quality Guideline Level, $\mu\text{g}/\text{m}^3$
		1	2	3	4	
Nitrogen Dioxide NO_2	1-hour mean	-	-	-	-	200
	24-hour mean	120	50	-	-	25
	Annual mean	40	30	20	-	10
Particulate Matter PM_{10}	24-hour mean	150	100	75	50	45
	Annual mean	70	50	30	20	15
Particulate Matter $\text{PM}_{2.5}$	24-hour mean	75	50	37.5	25	15
	Annual mean	35	25	15	10	5

- 4.64 It is important to note that the AQG's and IT's do not represent legally binding values for England. The legal requirements for the UK are set out in relevant legislation and accompanying governmental Air Quality Strategy. The WHO values do have provide aspirational non-statutory benchmark reference values against which air quality impacts can be assessed.

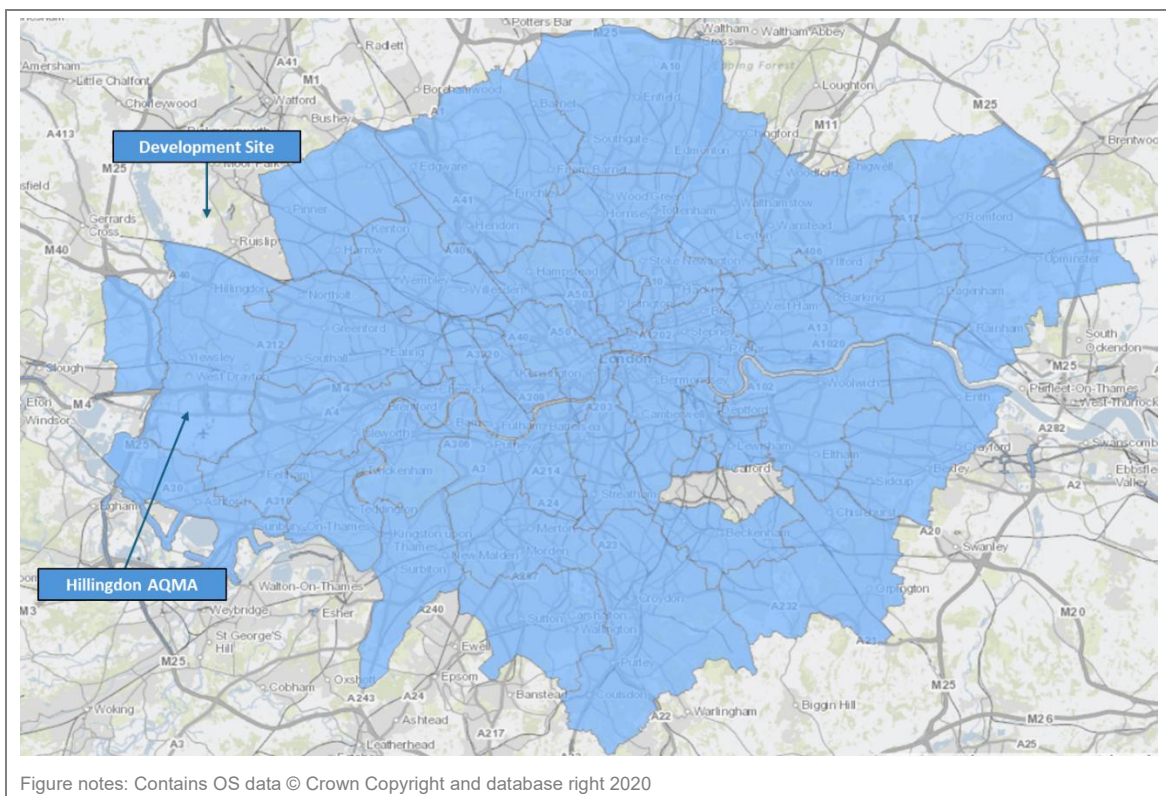
5.0 AIR QUALITY BACKGROUND ASSESSMENT STUDY

- 5.1 The proposed development falls within the jurisdiction of the London Borough of Hillingdon (LBH), which operates twelve automatic air quality monitoring sites. Of these, the London Hillingdon and London Harlington sites are managed by the Automatic Urban and Rural Network (AURN), operated by the Department for Environment, Food & Rural Affairs (DEFRA).
- 5.2 The remaining sites, Hillingdon 1 (South Ruislip), Hillingdon 3 (Oxford Avenue), Hillingdon Sipson, London Harmondsworth, Hillingdon Hayes, and London Harmondsworth Osiris are managed by the local authority as part of LBH's monitoring network and do not form part of DEFRA's national monitoring strategy. In addition, the London Heathrow, Heathrow Oaks Road, Heathrow Green Gates, and London Heathrow Bath Road monitoring sites are operated as part of the Heathrow Airport monitoring network (HAMN); for the purpose of this assessment, these sites have been included within the locally managed monitoring sites for ease of presentation.
- 5.3 The air quality baseline has been assessed using concentrations of nitrogen dioxide (NO₂), particulate matter with an aerodynamic diameter of less than 10 micrometres (PM₁₀), and particulate matter with an aerodynamic diameter of less than 2.5 micrometres (PM_{2.5}).
- 5.4 This desktop study was undertaken using the Information on existing air quality, that has been obtained by collating the results of monitoring carried out by DEFRA, local authority and other available monitoring networks. This covers both the application site and the surrounding area; the latter being used to provide context for the assessment.
- The annual mean background concentrations of NO₂ and particulate matter (PM₁₀ and PM_{2.5}) have been identified using the ambient air quality interactive map published by (DEFRA, 2024). These cover the whole of the country on a 1x1 km² grid of average concentrations.
 - The annual mean roadside concentrations of NO₂ and particulate matter (PM₁₀ and PM_{2.5}) have been obtained from the results of pollution climate mapping (PCM) model for LBH council provided by (DEFRA, 2024a).
- 5.5 The air quality strategy, states that the local authorities have a duty to consider air quality within their boundaries and produce an annual status report.
- The annual status report (ASR) prepared by LBH (LBH, 2025) indicates that air quality within their jurisdiction is generally good. Nonetheless, exceedances of NO₂ levels due to road traffic emissions which is linked to high traffic volumes, congestion on major road corridors, and emissions associated with Heathrow Airport and rail operations prompted the establishment of the Hillingdon AQMA on 01st of September 2003 to provide a statutory framework for managing and improving air quality through targeted local measures set out in the Council's Air Quality Action Plans.
 - Hillingdon AQMA broadly covers the southern two-thirds of the borough, extending south of the Chiltern–Marylebone railway line, where pollutant concentrations and population exposure are greatest. Topographically, the area includes dense urban and suburban residential

neighbourhoods, major transport infrastructure such as strategic road networks, rail lines, and areas influenced by Heathrow Airport operations, as well as associated commercial and industrial land uses. These features collectively contribute to elevated emissions and define the spatial extent of the AQMA, within which air quality impacts must be carefully considered in planning and development decisions.

- 5.6 LBH operates a network of 44 diffusion tubes, strategically positioned (council wide) to estimate the concentrations of NO₂ to capture local air quality trends.
- 5.7 The annual mean concentration of NO₂ was below the relevant air quality objective at all monitoring sites in 2024. The nearest diffusion tube monitoring sites to the proposed development (DT-34@1.45 miles east of the site and DT-44@1.1 miles northeast of the site), located within approximately 1.5 miles of the site, recorded annual mean concentrations of 21.9 µg/m³ and 17.4 µg/m³, respectively. These results indicate that NO₂ concentrations in the vicinity of the development site are well below, and approximately half of, the annual air quality objective for NO₂.
- 5.8 The proposed development site is located at a distance of around 2.3 miles north from Hillingdon AQMA. The site location in relation to the AQMA is illustrated in the figure below.

The proposed development site location in relation to HDC AQMA's.



- 5.9 The annual mean background concentrations of NO₂ and particulate matter (PM₁₀ and PM_{2.5}) have been identified using the ambient air quality interactive map (DEFRA, 2024) which contains data from the Pollution Climate Mapping (PCM) for 1x1 km² grid squares.
- 5.10 The data in the table below is taken by using the option named as “click on the feature” and find the respective concentrations. The site is located two grids of 1 km × 1km (Four-digit grid reference: TQ0789; TQ0790), hence we obtained the concentration data from these two grids (eastings and northings are X: 507830, Y: 189903; X: 507436, Y: 190458) and presented the annual mean concentrations in the table below.

DEFRA annual mean roadside and background concentrations for 2024

Annual Mean Concentrations				
Pollutant	Limit Values (µg/m ³)	Roadside Concentrations (µg/m ³) ^a	Background Concentrations (µg/m ³) ^b	Compliance with Limit Values
NO ₂	40	18.0	10.5	✓
PM ₁₀	40	15.3	11.8	✓
PM _{2.5}	20	8.9	7.4	✓

Table notes:

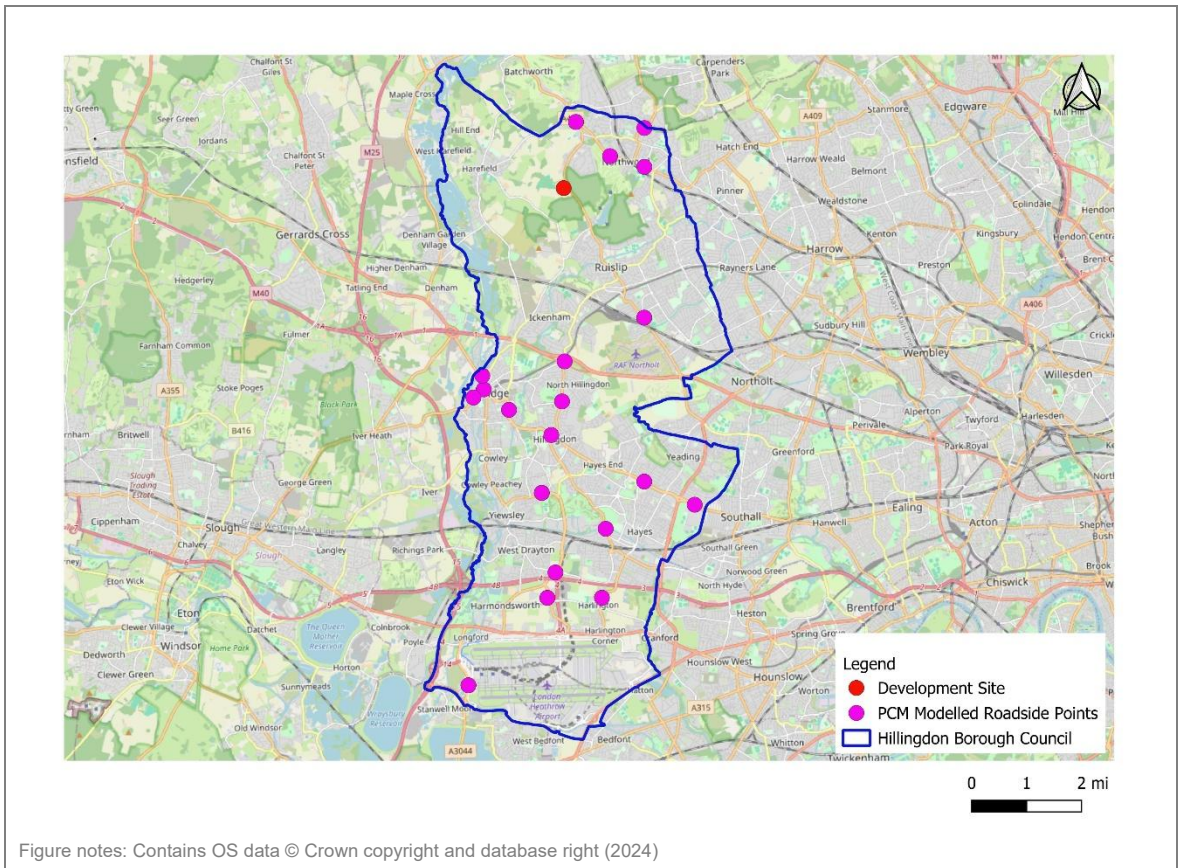
a Annual mean roadside concentrations obtained from 24 different roadside points used by the PCM model as critical exposure points for Hillingdon Borough Council

b Annual mean background concentrations from UK ambient air quality interactive map with 1 Kilometre Grid Square Selection.

Source: UK AIR: Air Information Resource; Link: <https://uk-air.defra.gov.uk/data/gis-mapping/>

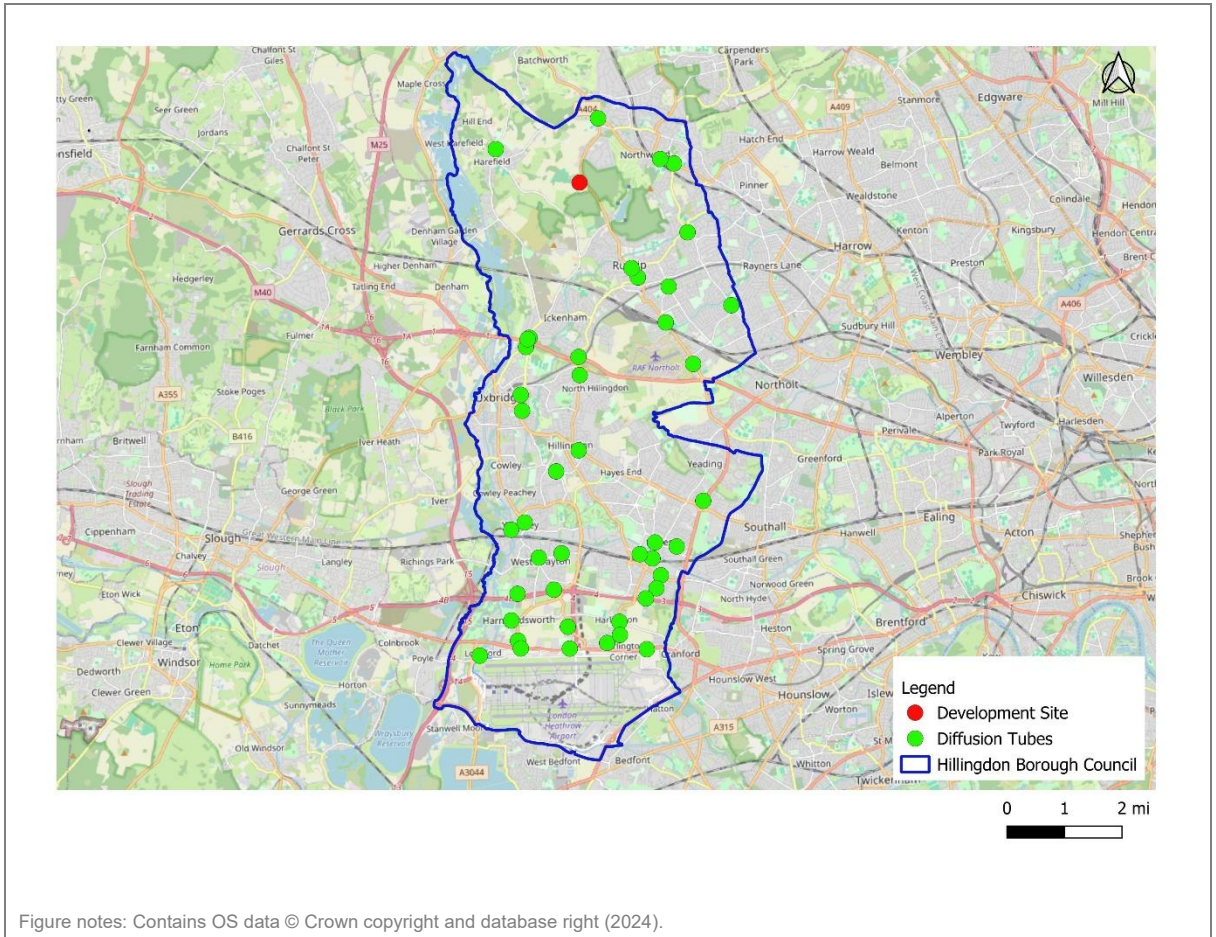
- 5.11 The roadside concentrations of NO₂ and particulate matter (PM₁₀ and PM_{2.5}) were obtained from the results of PCM model by (DEFRA, 2024a) for the local authority (LBH) and are obtained from 24 different roadside points used by the PCM model as critical exposure points for LBH.

PCM modelling points for roadside concentrations for NO₂ and PM (PM₁₀ and PM_{2.5}) in LBH in relation to the development site.



5.12 LBH published their latest Air Quality Annual Status Report (ASR) in May 2025 (LBH, 2025) which provides annual mean concentrations of NO₂ for 2018 to 2024 monitored by the local authority. The local authority uses diffusion tube samplers to monitor the NO₂ levels within their boundaries. These are identified as non-automatic monitoring locations, and the sites in close reference to the development site are illustrated in the figure below, and their corresponding NO₂ levels are mentioned in the table below.

Location of Proposed Development Site in relation to Non-Automatic Monitoring Sites



Annual mean NO₂ concentrations at the non-automatic monitoring sites in LBH for the years 2018 to 2024.

Site ID	X	Y	Type of site	^a NO ₂ annual mean concentrations (µg/m ³)						
				2018	2019	2020	2021	2022	2023	2024
DT - 1	506926	178614	Roadside	42	38.6	25.6	25.7	29.4	27.5	24
DT - 2	505996	184058	Roadside	40.7	36.9	28.9	30.9	32.8	27.9	22.1
DT - 3	510821	184923	Roadside	43.4	35.5	26.7	27.3	30	24.2	19.8

DT - 4	507617	182506	Roadside	28.5	27.8	22.6	23.3	24.7	21.3	20
DT - 5	506989	181920	Roadside	33.4	34.1	27.4	25.4	27.8	26.7	24
DT - 6	506243	185653	Roadside	37.6	35	30.9	29.7	32.2	27.6	23.2
DT - 7	509918	179015	Roadside	37.7	36.9	28.1	28.8	30.5	28.8	23.7
DT - 8	509798	178654	Roadside	33.9	33.9	24.1	25.3	26.7	25.9	21.7
DT - 9	508758	177718	Roadside	37.2	36.4	23.8	24.5	28.8	26.7	23.5
DT - 10	508414	177125	Roadside	39.6	39.7	25.2	26.4	28.3	31.5	26
DT - 11	505736	177752	Roadside	28.5	25.3	20.3	18.2	21.9	20.1	18
DT - 12	504851	176770	Roadside	36	33	22.4	23	28.2	24	21.8
DT - 13	505731	180288	Roadside	29.5	27.9	19.9	21	21	21.3	18.4
DT - 14	505299	190923	Background	20.5	22.4	15.5	15.4	16.5	13.6	11.1
DT - 15	511889	186563	Roadside	26.9	27.2	19.9	21.6	23.3	19.7	16.9
DT - 16	505920	177188	Roadside	38.6	37.7	25.4	26.4	31	28	25.8
DT - 17	510361	179820	Background	31	31.6	24.7	24.2	24.1	22.6	19.6
DT - 18	509683	179486	Roadside	38.5	37.4	29.9	27.6	28.3	25.7	22.9
DT - 19	506108	180493	Background	35	34.6	27.1	27.6	28.7	26.2	23.1
DT - 20	506503	179510	Background	36.6	36.6	31.6	31.5	34.5	29.2	23.6
DT - 21	507141	179628	Background	34.9	32.3	23.4	24.1	27.9	24.5	21.9
DT - 22	507649	184611	Roadside	42.4	38.3	31.3	33.7	33.5	29.6	24.6
DT - 23	506143	185395	Background	35.1	29.3	22.1	23.8	25	17	17.1
DT - 24	506035	183611	Roadside	36.9	34.7	27.6	32	31.1	27	23.5
DT - 25	508773	177352	Background	39.3	38.7	28.3	28.5	32.8	30.2	25.7
DT - 26	509499	178370	Roadside	42	40	28.2	26.8	29.2	27.7	23.1
DT - 27	509755	179934	Roadside	32.5	33.2	24.5	25.3	26.8	26.9	24.6
DT - 28	509328	179603	Roadside	31.7	31.7	23	23.5	27.1	21.4	18.8
DT - 29	505906	178497	Background	-	32.6	23.7	23	25.2	24.1	20.4
DT - 30	507612	185118	Background	-	25.3	20	19.2	19.9	17.4	15

DT - 31	511103	181097	Background	-	32.5	24.3	23.2	25.3	22	19.2
DT - 32	510664	188599	Background	-	44.4	32.5	37.4	40.1	36.3	31.4
DT - 33	510284	190524	Roadside	-	39.5	29	31.8	31.5	27.4	23.7
DT - 34	509900	190648	Roadside	-	35.9	26.3	28.4	30.1	25.6	21.9
DT - 35	510055	186080	Roadside	-	36.9	28.9	28	27.2	23.9	19.5
DT - 36	509275	187340	Roadside	-	38.5	28.1	31.6	32.7	29.7	25.7
DT - 37	509097	187597	Roadside	-	39.9	28.1	30.4	31.7	27.1	23.5
DT - 38	509525	176949	Roadside	-	44	33	28.9	35.6	34.4	29.1
DT - 39	506000	176969	Roadside	-	45.7	29.2	29.1	37.1	32.6	27
DT - 40	507316	177576	Roadside	-	35.5	23.6	23.4	26.6	27.8	24.1
DT - 41	507369	176966	Roadside	-	48.7	31.8	32.9	40.1	38.6	32
DT - 42	506192	185614	Roadside	-	39.6	28.9	29.3	31.5	26.8	21
DT - 43	510134	187086	Roadside	-	39.4	29.1	28.2	28.6	24.1	20.3
DT - 44	508162	191784	Roadside	-	-	-	27	26.1	22.8	17.4

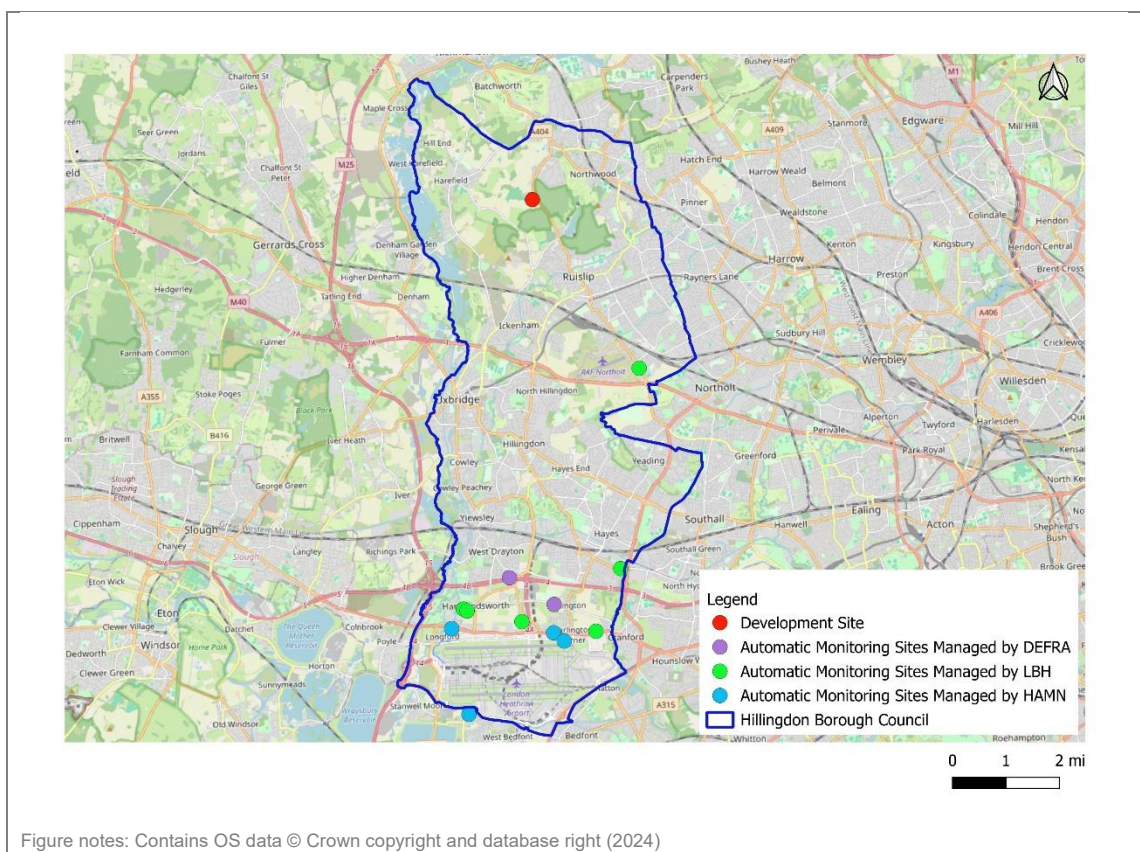
Table notes:

^a Annual mean NO₂ concentrations from the non-automatic monitoring sites (Diffusion tubes) at 44 different locations deployed by London Borough of Hillingdon

The values in bold represent the exceedances in air quality objective of 40 (µg/m³).

- 5.13 As previously stated, there are twelve automatic monitoring stations, out of which two monitoring stations are run by DEFRA and six monitoring stations run by the local authority LBH and four monitoring sites managed by HAMN.

Location of Proposed Development Site in relation to Automatic Monitoring Sites run by DEFRA, local authority, and Heathrow Airport Monitoring Network



- 5.14 The type of pollutants monitored, and the location of the automatic monitoring sites managed by DEFRA, and locally managed monitoring sites (both local authority and Heathrow Airport Monitoring Network) (DEFRA, 2024b) are provided in the tables below.

Annual mean concentrations of NO₂, PM₁₀, and PM_{2.5} and at the automatic monitoring sites managed by DEFRA in LBH for the years 2018-2024

Annual mean concentrations of NO ₂ , PM ₁₀ , and PM _{2.5} managed by DEFRA										
Site Name	Coordinates	Site Type	Pollutant	Annual Mean Concentrations (µg/m ³)						
				2018	2019	2020	2021	2022	2023	2024
London Hillingdon	506951 178605	Urban Background	NO ₂	46	45	28	25	28	25	23
			PM ₁₀	-	-	-	-	-	14	13
			PM _{2.5}	-	-	-	-	-	7	7
London Harlington	508295 177800	Urban Industrial	NO ₂	30	31	20	20	24	22	19
			PM ₁₀	15	15	15	14	13	13	11
			PM _{2.5}	9	9	10	8	8	8	7

Table notes:
 Data obtained from DEFRA UK AIR: Information resource.
 London Hillingdon Link: https://uk-air.defra.gov.uk/networks/site-info?uka_id=UKA00266
 London Hillingdon Link: https://uk-air.defra.gov.uk/networks/site-info?uka_id=UKA00472

Annual mean concentrations of NO₂, PM₁₀, and PM_{2.5} and at the automatic monitoring sites locally managed by LBH and HAMN for the years 2018-2024

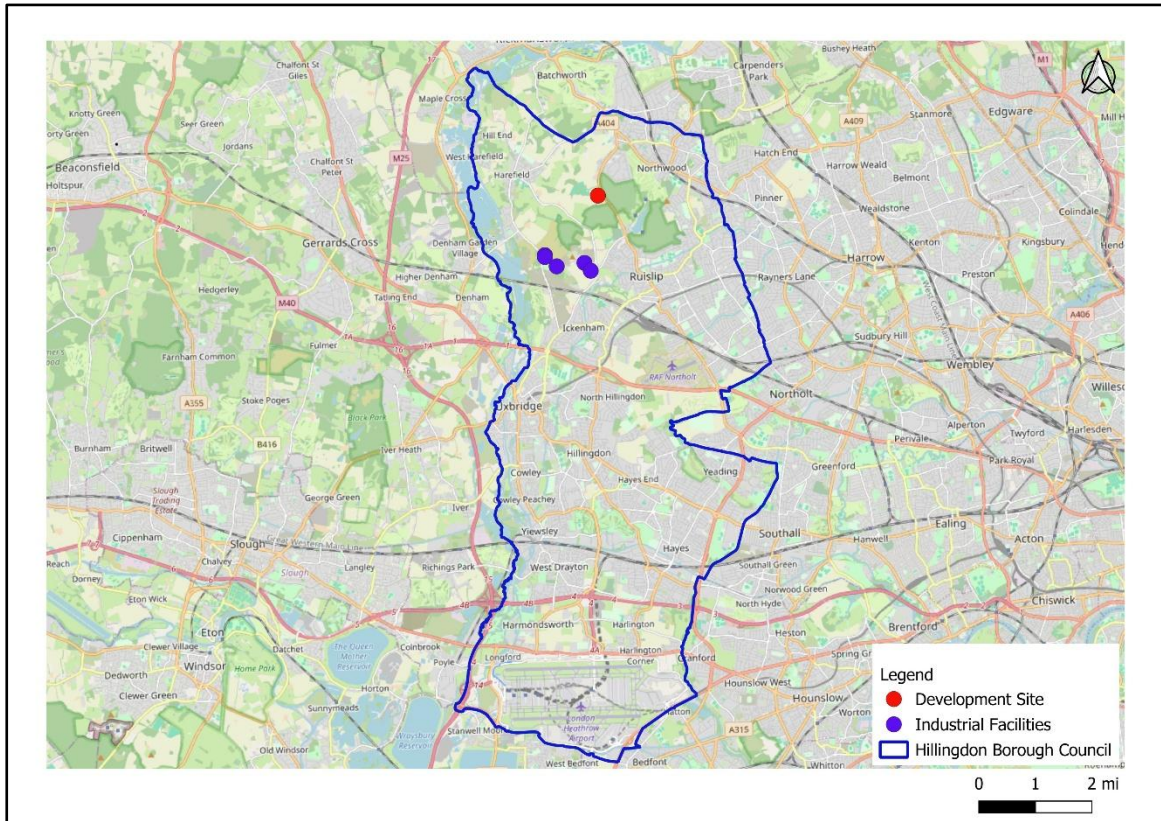
Annual mean concentrations of NO ₂ , PM ₁₀ , and PM _{2.5} managed by AURN at the automatic monitoring sites managed by LBH and HAMN										
Site Name	Coordinates	Site Type	Pollutant	Annual Mean Concentrations (µg/m ³)						
				2018	2019	2020	2021	2022	2023	2024
Hillingdon 1 - South Ruislip	510857 184917	Roadside	NO ₂	36	34	16	27	28	24	20
			PM ₁₀	17	17	17	18	17	19	18
			PM _{2.5}	-	-	-	-	-	-	-
Hillingdon 3 - Oxford Avenue	509557 176994	Roadside	NO ₂	35	33	22	25	29	27	27
			PM ₁₀	19	24	24	23	20	22	18
			PM _{2.5}	-	-	-	-	-	-	-
Hillingdon Sipson	507325 177282	Urban Background	NO ₂	30	30	19	19	24	23	22
			PM ₁₀	-	-	-	-	-	-	-
			PM _{2.5}	-	-	-	-	-	-	-
London Harmondsworth	505561 177661	Roadside	NO ₂	25	28	18	16	19	18	16
			PM ₁₀	23	18	15	16	14	16	13
			PM _{2.5}	-	-	-	-	-	-	-
London Harmondsworth Osiris	505671 177605	Urban background	NO ₂	-	-	-	-	-	-	-
			PM ₁₀	14	16	14	15	13	14	12
			PM _{2.5}	7	6	5	7	6	7	6
Hillingdon Hayes	510303 178882	Roadside	NO ₂	43	41	31	34	34	34	29
			PM ₁₀	27	30	28	25	26	30	22
			PM _{2.5}	-	-	-	-	-	-	-
Heathrow Bath Road	508279 176949	Roadside	NO ₂	-	-	39.5	34	36	36	32
			PM ₁₀	-	-	-	14	14	16	13
			PM _{2.5}	-	-	-	11	8	9	8
		Airport	NO ₂	30	31	19	20	26	21	18

Annual mean concentrations of NO ₂ , PM ₁₀ , and PM _{2.5} managed by AURN at the automatic monitoring sites managed by LBH and HAMN										
Site Name	Coordinates	Site Type	Pollutant	Annual Mean Concentrations (µg/m ³)						
				2018	2019	2020	2021	2022	2023	2024
Heathrow Green Gates	505207		PM ₁₀	13	14	13	12	12	13	12
	177072		PM _{2.5}	8	7	8	7	7	8	7
Heathrow Oaks	505729 174496	Airport	NO ₂	28	26	17	19	20	20	18
			PM ₁₀	14	15	15	13	12	13	12
			PM _{2.5}	9	10	10	7	7	8	7
London Heathrow	508600 176700	Airport	NO ₂	43	42	25	25	30	32	29
			PM ₁₀	15	14	13	11	11	13	11
			PM _{2.5}	9	8	9	7	7	8	7

Industrial Uses

- 5.15 The industrial facilities in the vicinity to the development site are non-hazardous waste treatment facilities. There are five different facilities located to the southwest of the site at a distance of around 1.5 miles.
- 5.16 The UK Pollutant Release and Transfer Register (PRTR) data set for these industries do not record any air pollutant release for the year 2024 (DEFRA, 2024). Consequently, the development site and the industrial activities around the vicinity of the site does not significantly contribute to air pollution, apart from emissions associated with road traffic. The location of the industries in reference to the development site are illustrated in the figure below.

Location of Proposed Development Site in relation to the Industrial Facilities



List of the industrial facilities and their pollutant release to air are given in the table below

List of Industrial facilities close to the site		
Name of the Facility	Type of Industry	Pollutant release to air
New Years Green Lane Civic Amenity Site	Treatment and disposal of non-hazardous waste	No pollutant release to air
High View Farm	Treatment and disposal of non-hazardous waste	No pollutant release to air
B F A Recycling Ltd	Treatment and disposal of non-hazardous waste	No pollutant release to air

List of Industrial facilities close to the site		
Name of the Facility	Type of Industry	Pollutant release to air
EDS Grab Hire Elm Tree Farm	Treatment and disposal of non-hazardous waste	No pollutant release to air
Crows Nest Farm	Treatment and disposal of non-hazardous waste	No pollutant release to air

- 5.17 This report focuses on air quality assessment and its related health effects concerning the proposed development. Based on the available data, the health impacts from industrial sources in the area are negligible or insignificant.

6.0 ASSESSMENT

- 6.1 The desktop assessment of air quality to determine site suitability has been undertaken using publicly available monitoring and modelling data. This includes measured concentrations obtained from DEFRA through the UK-AIR (UK Air Information Resource) website. Data from automatic monitoring stations within the LBH area operated by DEFRA have also been reviewed.
- 6.2 In addition, information from locally managed automatic monitoring sites operated by LBH has been considered, together with predicted concentrations derived from DEFRA's Pollution Climate Mapping (PCM) modelling. Data from non-automatic monitoring stations administered by the local borough council have also been included to provide a comprehensive understanding of baseline air quality conditions at the site.

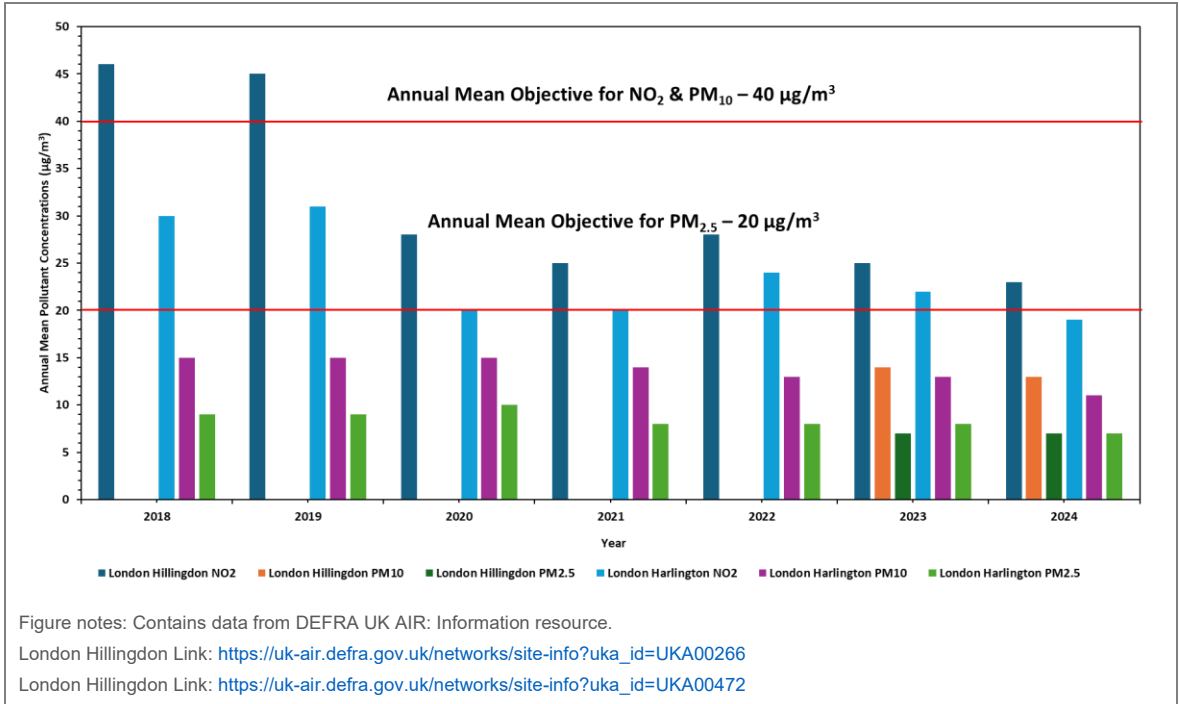
Review of Air Quality Baseline Conditions

- 6.3 The Proposed Development site is located around 2.3 miles north of Hillingdon AQMA discussed in section 5 in detail. The pollutants are reviewed with the aid of the automatic and non-automatic monitoring stations run by DEFRA and LBH Council.
- 6.4 The baseline concentrations of pollutants are considered in relation to three separate types of criteria, covered by different legislation, policy, and guidance. These include Air Quality Objectives (AQOs), Limit Values (LVs), and Air Quality Guidelines (AQGs).

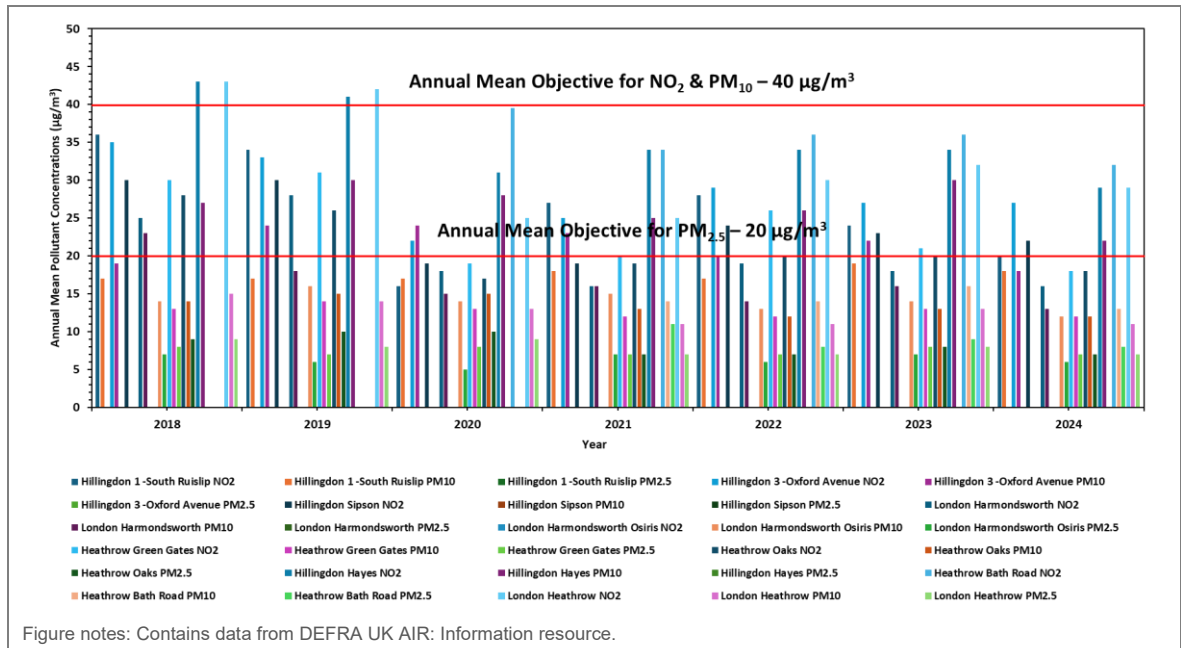
Air Quality Objectives

- 6.5 Measured NO₂ concentrations at all the automatic monitoring sites have not recorded any exceedances of the annual mean AQO of 40 µg/m³ for the year 2024. Similarly, the PM₁₀ and PM_{2.5} concentrations were also found to be well under the AQO of 40 µg/m³ and 20 µg/m³ for the year 2024.

Annual Mean concentrations of NO₂ and PM_{2.5} measured for 2018-2024 at the Automatic Monitoring Sites (London Hillingdon and London Harlington) managed by DEFRA

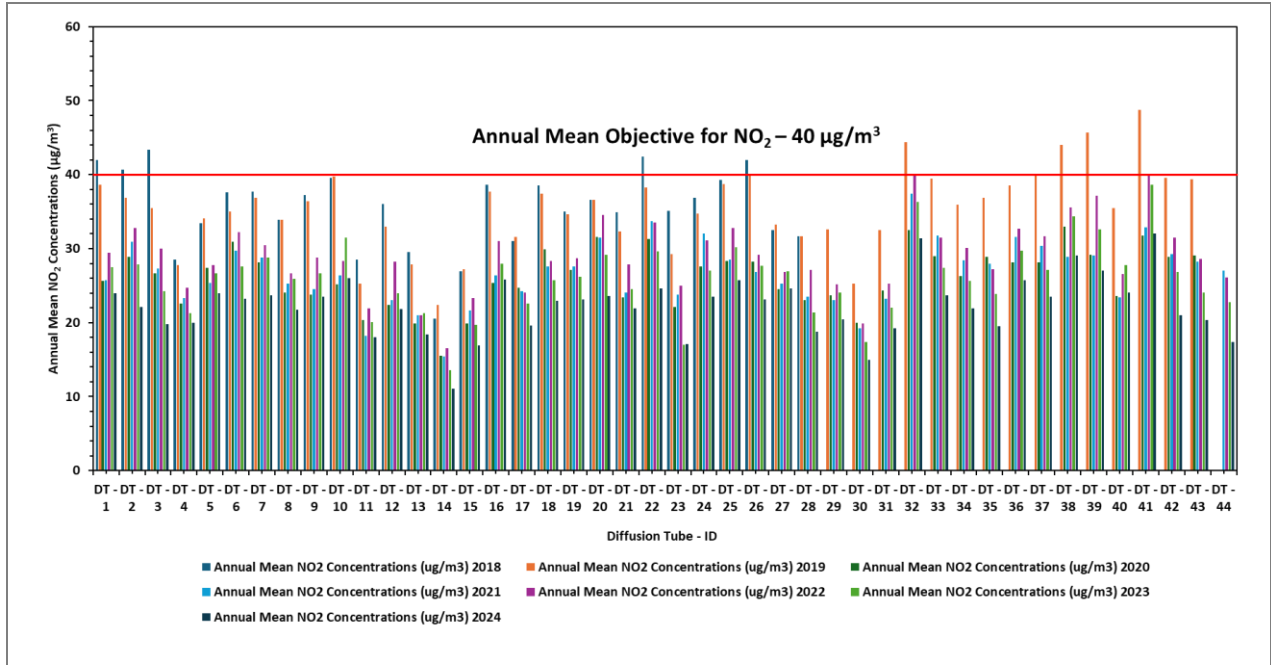


Annual Mean concentrations of NO₂ and PM₁₀ measured for 2018-2025 at the Automatic Monitoring Sites managed by LBH and HAMN



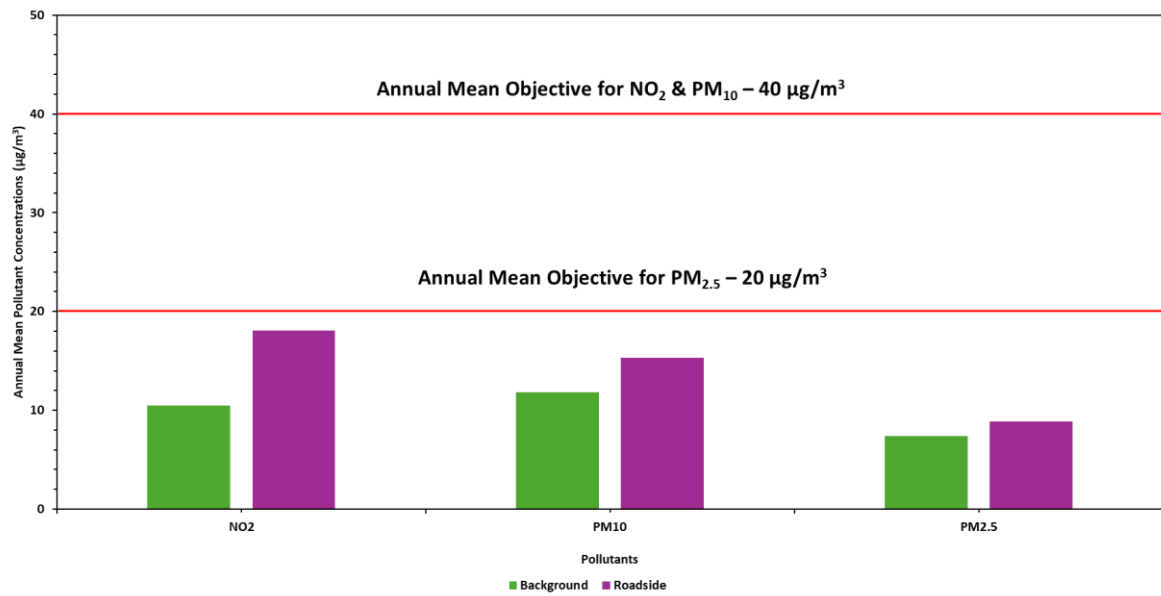
- 6.6 Similarly, the automatic monitoring sites run by local borough council have not recorded any exceedances for NO₂ and PM₁₀ concentrations for the years 2018 to 2024.
- 6.7 The LBH council operates 44 non-automatic monitoring sites (Diffusion Tubes) to measure ambient NO₂ concentrations. The concentrations at all these monitoring sites are well under the national AQO of 40 µg/m³. In addition, the nearest monitoring sites (DT-34, and DT-44) are nearly 50% less than the AQO values.
- 6.8 The concentrations of all the non-automatic monitoring sites in close relation to the site for years 2018 to 2024 and their annual mean concentrations are depicted in the figure below to show the level of air quality at the proposed development site and its surroundings.

Annual Mean concentrations of NO₂ measured for 2018 to 2024 at the non-automatic Monitoring Sites



6.9 The DEFRA mapped annual mean background and roadside concentrations of NO₂, PM₁₀, and PM_{2.5} from the national Pollution Climate Mapping modelling did not exceed AQO of 40 µg/m³ for NO₂, and PM₁₀. Similarly, the PM_{2.5} concentrations did not exceed the AQO of 20 µg/m³ for the year 2024 in the vicinity of the Proposed Development and illustrated in the following figure below.

Annual Mean concentrations of PM₁₀, NO₂ and PM_{2.5} from DEFRA's national Pollution Climate Mapping modelling



Limit Value Compliance

- 6.10 DEFRA have not identified any exceedances of the LVs in the current scenario and in the future up to year 2030 in the PCM modelled results for NO₂, PM₁₀, and PM_{2.5} along the roads in the local area of the Proposed Development. The tables below provide an indication that the air quality levels in the proposed development and its surroundings are well under the AQO and limit values portraying a safe level of air quality.

Annual mean concentrations of NO₂ from DEFRA's national Pollution Climate Mapping modelling for the years 2018-2030.

Year	^a Annual Mean NO ₂ concentrations (µg/m ³)		Compliance with Limit Values (40 µg/m ³)
	Background Concentrations	Roadside Concentrations	
2018	20.3	31.2	✓
2019	19.3	29.3	✓
2020	18.4	27.4	✓
2021	17.7	25.9	✓
2022	17.0	24.5	✓
2023	16.5	23.3	✓
2024	15.9	22.1	✓
2025	15.4	21.0	✓
2026	15.1	20.1	✓
2027	14.8	19.3	✓
2028	14.5	18.5	✓
2029	14.2	17.9	✓
2030	14.0	17.3	✓

^a The mean concentrations are taken from road A4020, A404, A408, A437, A4007, A4180, and A3044

Annual mean concentrations of PM₁₀ and PM_{2.5} from DEFRA's national Pollution Climate Mapping modelling for the years 2018-2030.

Year	Annual Mean PM Concentrations (µg/m ³)		Compliance with Limit Values
	PM ₁₀ (LV - 40 µg/m ³)	PM _{2.5} (LV - 20 µg/m ³)	
2018	17.9	11.3	✓
2020	17.1	10.8	✓
2025	16.3	10.1	✓
2030	16.3	10.1	✓

^a The mean concentrations are taken from road A4020, A404, A408, A4125, A437, A4007, A4180, and A3044

World Health Organization Guidelines

6.11 The table below provide an indication of the baseline air quality for the Proposed Development site with respect to the WHO annual mean ITs and AQGs

Indicative Achievement of Annual Mean WHO Guidelines / Interim Targets (µg/m³) on the Proposed Development site

Pollutant	IT1	IT2	IT3	IT4	AQG
NO ₂	✓	✓	✓	n/a	x
PM ₁₀	✓	✓	✓	✓	x
PM _{2.5}	✓	✓	✓	✓	x

Table notes:

? may achieve IT/AQG; x IT/AQG not achieved; ✓ IT/AQG achieved; n/a not applicable.

6.12 The figures and tables provided in this section and the previous section portrays that the concentrations of air pollutants, such as NO₂, PM₁₀, and PM_{2.5} from the automatic and non-automatic monitoring stations from the vicinity of the proposed development site, is showing no exceedances of the mean national air quality objectives and limit values for the years 2018-2023. In addition, the mean concentrations predicted up to year 2030 falls under the compliance of limit values.

- 6.13 Therefore, this desktop analysis for the proposed development site demonstrates that the annual mean concentrations of NO_2 , PM_{10} , and $\text{PM}_{2.5}$ for the existing scenario and the future predictions are all below national objective.

7.0 CONSTRUCTION DUST ASSESSMENT

- 7.1 In January 2024, the Institute of Air Quality Management (IAQM) released Version 2.2 of its updated guidance on the *Assessment of Dust from Demolition and Construction*. This latest version (IAQM, 2024) represents a comprehensive rewrite of the original 2014 guidance, incorporating lessons learned and advancements made over the past decade.
- 7.2 The updated guidance replaces all previous versions and provides developers, consultants, and environmental health practitioners with a systematic framework for conducting construction dust impact assessments. It aids in determining the significance of impacts and identifying appropriate mitigation measures to eliminate or minimize potential effects.
- 7.3 The IAQM provides guidance on a five-step process to assess the potential impacts of construction dust pre-mitigation, provide mitigation measures specific to the risk and assess the post-mitigation impacts.
- 7.4 The assessment procedure follows the following framework:
- **Step 1** - Screen the requirement for a more detailed assessment;
 - **Step 2** - Assess the risk of dust impacts of the four phases of construction (demolition, earthworks, construction and trackout), taking into account:
 - the scale and nature of the works, which determines the potential Dust Emission Magnitude (**Step 2A**); and
 - the sensitivity of the area (**Step 2B**).
 - These factors are combined to give the risk of dust impacts (**Step 2C**).
 - **Step 3** - Determine the site-specific mitigation for the potential activities;
 - **Step 4** - Examine the residual effects and determine whether or not these are significant; and
 - **Step 5** - Prepare the Construction Dust Assessment.

Step 1 of Assessment

- 7.5 Step 1 of the assessment procedure is to screen the need for a detailed assessment. The guidance provides distance-based criterion in Box 1 of the guidance which states:

An assessment will normally be required where there is:

- a **'human receptor'** within:
 - 250 m of the boundary of the site; or
 - 50 m of the route(s) used by construction vehicles on the public highway, up to 250 m from the site entrance(s).

- an **'ecological receptor'** within:
 - 50 m of the boundary of the site; or
 - 50 m of the route(s) used by construction vehicles on the public highway, up to 250 m from the site entrance(s).

7.6 There are human receptors within the distances set out in the guidance thus a detailed assessment is required for human receptors.

Step 2 of Assessment

Potential Dust Emission Magnitude

7.7 The guidance explains that the dust emission magnitude is based on the scale of the anticipated works and should be classified as Small, Medium, or Large. The guidance provides examples of the magnitude classification for each of the potential stages.

Demolition

7.8 There will be a requirement to demolish the existing buildings scattered in the site. The total volume of which is estimated to be 3200 m³. There will be no crushing or screening on-site, but there will be demolition of concrete, metal cladding and timber, and the demolition site is located at a height <6m. Based on the illustrative criteria in the IAQM guidance, the dust emission class for demolition is considered *Small*.

Earthworks

7.9 There are earthworks to be carried out for the proposed development. The total area involved in the earthworks is 24000 m², and the type of soil parent material is Sand and Silt. The soil material's magnitude of dust impact is small and the total area of earthworks for the proposed falls under the medium category (18000 m² – 110000 m²) of the IAQM guidance. Based on the illustrative criteria in the IAQM guidance, the dust emission magnitude for earthworks is classified as *Medium*.

7.10 The dust generated by the earthworks depends on the nature of the earth and soil at the application site. The characteristics of the soil have been defined using the British Geological Survey's UK Soil Observatory website (British Geological Survey, 2024) and are set out in the table below.

Soil Conditions at the Application Site	
Category	Record
Soil layer thickness	Deep Pre-Quaternary
Soil texture	Clayey loam to Silty loam
Subsoil grain size	Argillaceous
Soil Parent Material	Marine/Estuarine Sand and Silt
Soil pH	5.5
Organic Matter	16.67
Table notes: -Data obtained from https://mapapps2.bgs.ac.uk/ukso/home.html#:~:text=About%20the%20UK%20Soil%20Observatory,contribute%20information%20about%20your%20soil.	

Construction

- 7.11 The proposed development includes a construction volume of around 4700 m³. The exact building materials are concrete, metal cladding, micro rib cladding, aluminium, steel, glass and red brickworks. Based on the illustrative criteria in the IAQM, the dust emission magnitude for construction is considered *Small*.

Track out

- 7.12 The number of HDVs leaving the site on a single day is currently unknown. However, based on the area and construction volume of the project the HDV movements would be less than 20/day. Based on the guidance documents, we can conclude that the dust emission magnitude for track out is considered *Small*.

Summary of Potential Dust Emission Magnitude

7.13 The table below summaries the dust emission magnitude from the construction phases of the Proposed Development.

Construction Dust Assessment	
Activity	Dust Emission Magnitude
Demolition	Small
Earthworks	Medium
Construction	Small
Track out	Small

*Link: <https://iaqm.co.uk/wp-content/uploads/2013/02/Construction-Dust-Guidance-Jan-2024.pdf>

Sensitivity of the Study Area

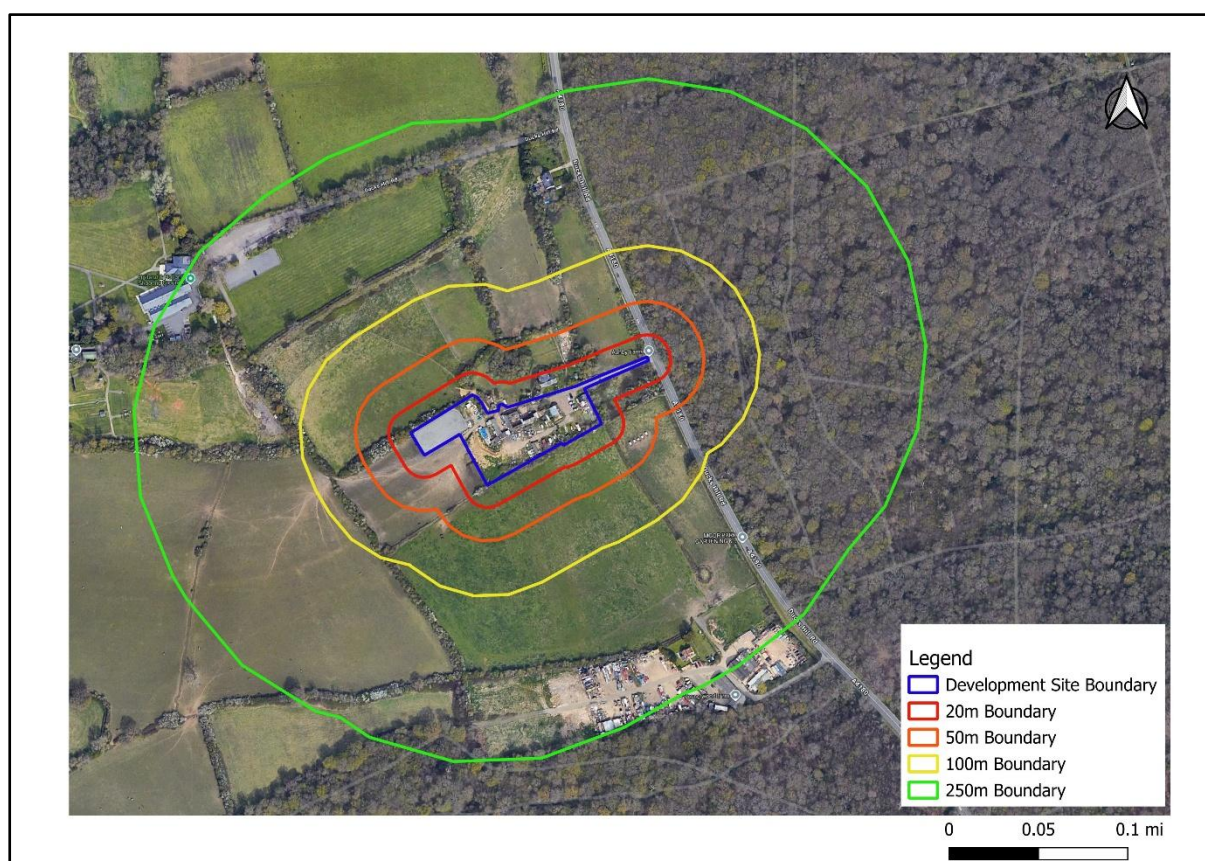
7.14 The guidance explains that the sensitivity of the area should take account of a number of factors including:

- the specific sensitivities of receptors in the area;
- the proximity and number of those receptors;
- in the case of PM₁₀, the local baseline concentration; and
- site-specific factors, such as whether there are natural shelters, such as trees, to reduce the risk of wind-blown dust.

7.15 The IAQM guidance document provides examples of high, medium and low sensitivity receptors for each of the potential effects. These are provided in Box 6 to Box 8 of the guidance and consideration should be given to the additional factors presented in Box 9 of the guidance. The guidance also provides a series of matrices (Tables 2, 3 and 4 of the guidance document) to determine the sensitivity of the area based on the receptor sensitivity, number of receptors, the proximity to the dust emission activity and baseline PM₁₀ concentration. Residential properties are considered high sensitivity receptors to dust soiling and elevated levels of PM₁₀.

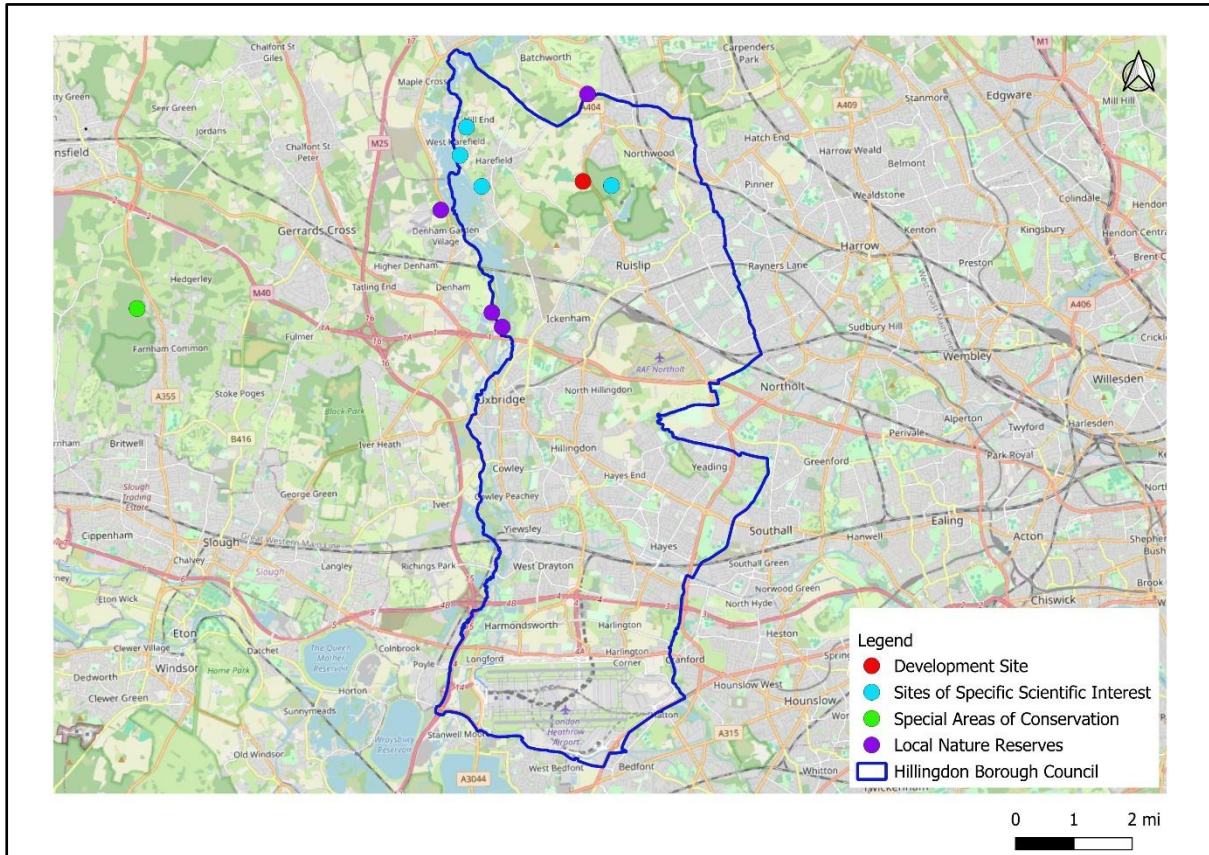
7.16 The site is located alongside Duck Hills Road, within a predominantly rural area. The site is bounded by agricultural land to the [north/south/east/west], with residential properties located approximately at a distance of 596 m to the north of the site, and open farmland to the remaining boundaries. Existing development within the site comprises agricultural buildings and associated access tracks, consistent with its long-established agricultural use.

- 7.17 There are no sensitive receptors located within 250 m of the development site, except for farmlands which are considered low sensitive receptors, and these farmlands are located 250 m south and northeast of the site. Hence, the distance between the site and these sensitive receptors are significantly. Based on Table 2 of the IAQM guidance document, the sensitivity of the area to dust soiling impacts will be *Small*.
- 7.18 The distance radius from the development site to the sensitive receptors are described in the figure below:



- 7.19 Annual mean PM_{10} predicted background concentrations in the vicinity of the Proposed Development are predicted to be $11.8 \mu\text{g}/\text{m}^3$. Based on Table 3 of the IAQM guidance, the sensitivity of the area to human health impacts during the demolition, earthworks, construction, and track out stages will be *Low*.
- 7.20 The nearest sensitive ecological site SSSI Ruislip Woods is located within 20 m from the eastern boundary of the site. Since, the SSSI is located within 20m of the site, the receptor sensitivity is considered Medium. Hence, according to Tabel 4 of the IAQM guidance, the sensitivity of the site with respect to ecological impacts is considered *Medium*.

7.21 The ecological sites in relation to the site are described in the figure below:



Summary of sensitivity of the surrounding area with respect to the development site				
Potential Impact	Sensitivity of the Surrounding Area			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	Low	Low	Low	Low
Human Health	Low	Low	Low	Low
Ecology	Medium	Medium	Medium	Medium

Table notes:

IAQM Guidance states that track out may occur along the public highway for up to 500 m from large magnitude sites, 200 m from medium magnitude sites, and 50 m from small magnitude sites, as measured from the site exit.

Risk of Dust Effect

- 7.22 The guidance has, helpfully, provided a series of matrices (Table 2, Table 3 and Table 4 of the guidance document) to determine the potential impact at receptors based on the receptor sensitivity, number of receptors and the proximity to the dust emission activity.
- 7.23 The dust emission magnitudes have been combined with the sensitivities of the area in using the matrices in the guidance (Table 6, Table 7, Table 8 and Table 9 of the guidance), in order to assign a risk category to each activity. The resulting risk categories for the four construction activities, without mitigation, are set out in the table below.

Summary of Dust Risk for each Stage of construction at the proposed development				
Potential Impact	Risk			
	Demolition ^a	Earthworks ^b	Construction ^c	Trackout ^d
Dust Soiling	Negligible	Low Risk	Negligible	Negligible
Human Health	Negligible	Low Risk	Negligible	Negligible
Ecological	Low Risk	Medium Risk	Low Risk	Low Risk

Table notes:

- a. Based on Table 6 of the IAQM guidance document.
 b. Based on Table 7 of the IAQM guidance document.
 c. Based on Table 8 of the IAQM guidance document.
 d. Based on Table 9 of the IAQM guidance document.

Significance of effects

- 7.24 The IAQM guidance does not provide a method for assessing the significance of effects before mitigation and advises that pre-mitigation significance should not be determined.
- 7.25 Step 3 - The risk categories set out in the table above have been used to determine the appropriate level of mitigation as set out in step 3 of the assessment procedure. Overall, the construction phase risk has been found to be Negligible.

Mitigation

- 7.26 Measures to mitigate emissions will be required during the demolition and construction phase of the proposed development in order to minimise impacts upon nearby sensitive receptors.
- 7.27 The dust risk assessment indicates that the Proposed Development presents a negligible risk of dust-soiling impacts during the demolition, construction, and trackout phases, and a low risk during the

earthworks phase. For human health, the dust risk is negligible across all phases except for earthworks, which presents a low risk. In relation to ecological receptors, the dust risk is assessed as low for all phases other than earthworks, which is classified as medium risk.”

- 7.28 The IAQM guidance document describes measures that should be employed, as appropriate, to reduce the impacts. In addition to this the IAQM has also published guidance on monitoring during demolition and construction (IAQM, 2018). Based on the finding of this assessment, a set of measures that are both highly recommended and desirable to be incorporated into the specification for the construction works has been drawn up. These measures are shown in the following tables.
- 7.29 The mitigation measures for the application site should be written into a dust management plan (DMP). The DMP may be integrated into a Construction Environmental Management Plan which is expected to be secured through appropriate planning condition.
- 7.30 Where mitigation measures rely on water, it is expected that only sufficient water will be applied to damp down the material. There should not be any excess to potentially contaminate local watercourses.

Communication	
Measure	Highly Recommend / Desirable
Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.	Not Required (The main medium risk is due to ecological receptor not human)
Display the name and contact details of person(s) account- able for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.	Highly Recommended
Display the head or regional office contact information.	Highly Recommended
Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. The level of detail will depend on the risk and should include as a minimum the highly recommended measures in this document. The desirable measures should be included as appropriate for the site. In London additional measures may be required to ensure compliance with the Mayor of London’s guidance. The DMP may include monitoring of dust deposition, dust flux, real-time PM ₁₀ continuous monitoring and/or visual inspections.	Desirable

Dust Management: Site Management	
Measure	Highly Recommend / Desirable
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.	Highly Recommended
Make the complaints log available to the local authority when asked.	Highly Recommended
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 logbook.	Highly Recommended
Hold regular liaison meetings with other high risk construction sites within 250 m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes.	Not Required

Dust Management: Monitoring	
Measure	Highly Recommend / Desirable
Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100 m of site boundary, with cleaning to be provided if necessary.	Desirable
Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked.	Highly Recommended
Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.	Highly Recommended

Dust Management: Monitoring	
Measure	Highly Recommend / Desirable
Agree dust deposition, dust flux, or real-time PM ₁₀ continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction. Visual monitoring may be acceptable – important to check with Local Authority requirements.	Desirable

Dust Management: Preparing and maintaining the site	
Measure	Highly Recommend / Desirable
Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.	Highly Recommended
Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.	Highly Recommended
Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period.	Highly Recommended
Avoid site runoff of water or mud.	Highly Recommended
Keep site fencing, barriers and scaffolding clean using wet methods.	Highly Recommended
Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.	Highly Recommended
Cover, seed or fence stockpiles to prevent wind whipping.	Highly Recommended
Install green walls, screens or other green infrastructure to minimise the impact of dust and pollution.	Desirable

Dust Management: Operating vehicle/machinery and sustainable travel	
Measure	Highly Recommend / Desirable
Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone, Ultra-Low Emission Zone, and the London NRMM standards, where applicable.	Highly Recommended
Ensure all vehicles switch off engines when stationary - no idling vehicles.	Highly Recommended
Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable.	Highly Recommended
Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate).	Desirable
Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.	Not required
Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).	Desirable

Dust Management: Operations	
Measure	Highly Recommend / Desirable
Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.	Highly Recommended

Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.	Highly Recommended
Use enclosed chutes and conveyors and covered skips.	Highly Recommended
Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.	Highly Recommended
Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.	Highly Recommended

Dust Management: Waste management

Measure	Highly Recommend / Desirable
Avoid bonfires and burning of waste materials.	Highly Recommended
Reuse and recycle waste to reduce dust from waste materials.	Highly Recommended

Measures specific to demolition

Measure	Highly Recommend / Desirable
Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).	Desirable
Ensure effective water suppression is used during demolition operations. Handheld sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.	Highly Recommended

Measures specific to demolition	
Measure	Highly Recommend / Desirable
Avoid explosive blasting, using appropriate manual or mechanical alternatives.	Highly Recommended
Bag and remove any biological debris or damp down such material before demolition.	Highly Recommended

Measures specific to earthworks	
Measure	Highly Recommend / Desirable
Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.	Desirable
Use Hessian, mulches or tackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.	Desirable
Only remove the cover in small areas during work and not all at once.	Desirable

Measures specific to Construction	
Measure	Highly Recommend / Desirable
Avoid scabbling (roughening of concrete surfaces) if possible.	Desirable

Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.	Highly Recommended
Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.	Desirable
For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust.	Desirable

Measures specific to track out	
Measure	Highly Recommend / Desirable
Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.	Desirable
Avoid dry sweeping of large areas.	Desirable
Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.	Desirable
Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.	Desirable
Record all inspections of haul routes and any subsequent action in a site log book.	Desirable
Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.	Not required

Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).	Desirable
Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.	Desirable
Access gates to be located at least 10 m from receptors where possible.	Desirable

Summary of Construction Dust Assessment

- 7.31 The construction dust assessment for the proposed development has been conducted in compliance with IAQM guidance.
- 7.32 Construction activities have the potential to generate dust and emissions. The proposed development site has been found to possess negligible risk for all phases, except for earthworks phase which pose a low risk for dust soiling and human health impacts and a medium risk for ecological impacts. To address this, a comprehensive package of mitigation measures will be implemented to minimize dust emissions. With these measures in place, any residual effects are anticipated to be 'not significant.'
- 7.33 The IAQM guidance acknowledges that, despite robust dust management plans, it is not always possible to ensure complete effectiveness under all conditions, such as adverse weather. As a result, the local community may occasionally experience short-term annoyance. However, the scale and duration of such occurrences are not expected to be significant enough to alter the conclusion that the overall construction effects of the proposed development will remain 'not significant' if the mitigation measures are properly implemented to minimize dust emissions.

Health Impacts

- 7.34 The health risk and impacts of the construction dust with respect to the high, medium and low sensitivity receptors were found to be low, since the annual mean PM₁₀ predicted background concentrations be a maximum of 11.8 µg/m³ in the vicinity of the proposed development and no high sensitivity receptors were found exposed to these concentrations < 250 m of the application site poses a low risk, showing that no further assessment or mitigation measures are required.

Construction Traffic and Plant

- 7.35 As previously stated, there is no significant construction and demolition effects from the proposed development. However, we recommend some of the following Best Available Techniques (BAT) to be adopted during the construction phase, as listed below:
- All vehicles should switch off engines when stationary, no idling vehicles;
 - Minimise the movement of construction traffic around the site;
 - Maximising efficiency (this may include alternative modes of transport, maximising vehicle utilisation by ensuring full loading and efficient routing);
 - Vehicles should be well maintained and kept in a high standard of working order;
 - Avoid the use of diesel or petrol powered generators by using mains electricity or battery powered equipment where possible; and
 - Locate plant away from boundaries close to residential areas.

8.0 TRAFFIC EMISSIONS

- 8.1 The EPUK & IAQM Guidance — 'Planning for Air Quality' (IAQM, 2017) has been used to assess potential traffic impacts associated with the development and this is outlined within the table below.

Indicative criteria requiring an air quality assessment	
The Development will	Indicative criteria to proceed to an air quality assessment
Cause a significant change in Light Duty Vehicle (LDV) traffic flows on local roads with relevant receptors. (LDV = cars and small vans <3.5t gross vehicle weight).	A change of LDV flows of: - more than 100 AADT within or adjacent to an AQMA - more than 500 AADT elsewhere
Cause a significant change in Heavy Duty Vehicle (HDV) flows on local roads with relevant receptors. (HDV = goods vehicles + buses >3.5t gross vehicle weight).	A change of HDV flows of: - more than 25 AADT within or adjacent to an AQMA - more than 100 AADT elsewhere
Realign roads, i.e. changing the proximity of receptors to traffic lanes	Where the change is 5m or more and the road is within an AQMA
Introduce a new junction or remove an existing junction near to relevant receptors	Applies to junctions that cause traffic to significantly change vehicle accelerate/decelerate, e.g. traffic lights, or roundabouts.
Introduce or change a bus station	Where bus flows will change by: - more than 25 AADT within or adjacent to an AQMA - more than 100 AADT elsewhere
Have an underground car park with extraction system	The ventilation extract for the car park will be within 20m of the relevant receptor. Coupled with the car park having more than 100 movements per day (total in and out)

- 8.2 Traffic data for both the existing scenario and the proposed development will be assessed. If the analysis identifies a significant change in traffic volumes that exceeds the indicative thresholds set out in the EPUK & IAQM guidance document, 'Planning for Air Quality', an air quality assessment will be required. If the projected changes remain within the defined thresholds, no further assessment will be necessary. Consequently, mitigation measures are not expected to be necessary
- 8.3 To assess the impact of these traffic volume changes on the air quality, the project traffic consultants Clewlow Consulting have provided the operational traffic generation data relating to baseline and future operational traffic flows. The traffic data supplied is shown below:

Typical Daily Trip Generation Comparison (two-way trips)			
Day of Week	Existing	Proposed	Difference
Monday	49	49	0
Tuesday	49	49	0
Wednesday	49	49	0
Thursday	49	49	0
Friday	49	27	-22
Saturday	37	0	-37
Sunday	37	0	-37
Total	319	223	-96

- 8.4 The proposed development provides parking in accordance with London Borough of Hillingdon standards, including 10% accessible parking provision and electric vehicle charging infrastructure comprising a minimum of 5% active and 5% passive charging points, in line with Local Plan Part 2 Policy DMT 6.
- 8.5 The proposed development site is not located within an Air Quality Management Area (AQMA), and the proposed development would result in a reduction in vehicle trip generation compared with the existing baseline conditions. As a result, traffic generation associated with the development is well below the screening thresholds set out in the EPUK & IAQM guidance Planning for Air Quality (IAQM, 2017). On this basis, we can conclude that further detailed air quality assessment is not required.

9.0 OPERATIONAL IMPACTS

Building Emissions

- 9.1 The proposed development is being designed as a net-zero-carbon, low-energy facility, incorporating sustainability measures that minimise operational building emissions and demonstrate a strong commitment to energy efficiency, climate resilience and responsible resource management.
- 9.2 The development will adopt a fabric-first approach, prioritising high-performance insulation, enhanced airtightness and reduced thermal bridging to minimise heat loss and overall energy demand. Efficient building services, including low-carbon heating and cooling systems, renewable energy technologies, including rooftop photovoltaic (PV) panels, which will generate a proportion of the facility's energy demand onsite and contribute directly to meeting net-zero-carbon operational goals.
- 9.3 These renewable energy systems contribute to reducing greenhouse gas emissions and lowering the carbon footprint. They do not release toxic pollutants such as nitrogen oxides, carbon monoxide, or other combustion-related emissions, thereby minimizing any potential adverse impacts on air quality.
- 9.4 The scheme incorporates sustainable drainage measures, including an attenuation pond to manage surface water, enhance biodiversity and reduce reliance on energy-intensive drainage infrastructure. Responsible material use will be promoted through the re-use and recycling of existing onsite materials, helping to minimise embodied carbon. In addition, the building design prioritises employee health and wellbeing by maximising natural daylight, ventilation and views, which reduces dependence on mechanical systems and contributes to lower operational energy demand.
- 9.5 Any future change of use, new buildings or demolition emissions that could deteriorate air quality would be subject to appropriate future planning controls and would be required to comply with relevant regulations, such as the Environmental Permitting Regulations (UK Legislation, 2018).

10.0 AIR QUALITY NEUTRAL

- 10.1 The site falls within London Borough of Hillingdon and therefore according to Hillingdon's air quality action plan (AQAP) (LBH AQAP, 2025) and GLA policy the site needs to demonstrate compliance with Air Quality Neutral (AQN) standards.
- 10.2 Building Emission Benchmark: The proposed development does not incorporate any combustion-based heating systems such as gas-fired boilers or biomass units. Instead, it relies entirely on a mixture of renewable technologies such as photovoltaic (PV) panels, and low-carbon heating and cooling systems, which are assumed to produce zero heat-related NO_x emissions in accordance with the London's Air Quality Neutral guidance (GLA, 2023).
- 10.3 As stated in the London Plan Guidance (LPG), developments that do not introduce new combustion plant are considered to meet the Building Emissions Benchmark (BEB) by default and are therefore deemed air quality neutral in terms of building emissions. Since the proposed development does not include any backup diesel generators for the purpose of business continuity and therefore meets the BEB criteria, it is considered compliant with the AQN requirements and does not contribute to worsening local air quality.
- 10.4 Transport Emission Benchmark: The development does not introduce any new parking spaces in comparison with the existing operations, and the anticipated vehicle movements are lower than those associated with the existing site use. As such, the proposal is consistent with the London Plan parking standards. In accordance with paragraph 2.2.1 of the Air Quality Neutral London Plan Guidance (GLA, 2023), the scheme does not give rise to any additional emission sources and can therefore be considered inherently Air Quality Neutral. Consequently, a detailed Air Quality Neutral assessment is not required.
- 10.5 Therefore, the proposed development is considered compliant with both the building and transport emissions benchmarks set out in the Air Quality Neutral Guidance. It can therefore be deemed air quality neutral and excluded from any requirement for further assessment under the AQN framework.

11.0 CONCLUSIONS

- 11.1 The baseline desktop air quality assessment for the proposed development site has been carried out using the data from DEFRA automatic monitoring site, local council's non-automatic monitoring sites, and the PCM modelled results from the UK Air: Information resource.
- 11.2 The air pollutant concentrations for the proposed development are well below the current legislated AQOs and LVs.
- 11.3 The construction dust assessment shows that the dust risk is negligible for dust soiling and human health impacts, for all phases except for earthworks phase which shows a low dust risk. Similarly, for ecological impacts the dust risk is low for all phases except for earthworks which pose a medium risk due to the presence of a SSSI in close vicinity of the development site.
- 11.4 The predicted traffic changes arising from the proposed development were found to be in compliance with the EPUK and IAQM guidance. Therefore, no further air quality assessment is required.
- 11.5 The development is compliant with both the council's AQAP and GLA's Air Quality Neutral standards for both building emission and transport emission benchmarks. The proposed development meets both building and transport emissions benchmark which is in accordance with the Greater London Authority's AQN guidance. Therefore, the site is considered air quality neutral and requires no further assessment under the AQN framework.
- 11.6 Overall, the air quality assessment demonstrates that the development site is suitable for the proposed uses, as air quality levels comply with all regulatory standards. The air quality impacts due to the proposed development are considered to be 'not significant'.

Glossary, References and Appendices

Glossary

AADF	Annual Average Daily Traffic Flow
AADT	Annual Average Daily Traffic
An exceedance	A period of time (defined for each standard) where the concentration is higher than that set out in the Standard.
An objective	The target date on which exceedances of a Standard must not exceed a specified number.
AMCT	Annual Mean Concentration Target
AQAP	Air Quality Action Plan
AQFA	Air Quality Focus Areas
AQG	Air Quality Guidelines
AQMA	Air Quality Management Area
AQN	Air Quality Neutral
AQO's	Air Quality Objectives
Air Quality Standards	Concentrations recorded over a given time period, which are considered to be acceptable in terms of what is scientifically known about the effects of each pollutant on health and on the environment.
AQS	Air Quality Strategy
ASHPs	Air Source Heat Pumps
ASR	Annual Status Report
AURN	Automatic Urban and Rural Network
BREEAM	Building Research Establishment Environmental Assessment Methodology
DEFRA	Department for Environment, Food and Rural Affairs
DMP	Dust Management Plan
EPUK	Environmental Protection UK
EC	European Community
EEG	Environmental Engineering Partnership
EU	European Union
GLA	Greater London Authority

HGV	Heavy Goods Vehicle
HDV	Heavy Duty Vehicle
HVAC	Heating, Ventilation, and Air Conditioning
IAQM	Institute of Air Quality Management
IT's	Interim Targets
LAQM	Local Air Quality Management
LBH	London Borough of Hillingdon
LDV	Light Duty Vehicle
LGV	Light Goods Vehicle
Limit Values (LVs)	Legally binding parameters that must not be exceeded. Limit values are set for individual pollutants and are made up of a concentration value, an averaging time over which it is to be measured, the number of exceedances allowed per year, if any, and a date by which it must be achieved. Some pollutants have more than one limit value covering different endpoints or averaging times.
LNR	Local Nature Reserve
NO₂	Nitrogen dioxide
NO_x	Nitrogen Oxides
NPPF	National Planning Policy Framework
PCM	Pollution Climate Mapping
PPG	Planning Practice Guidance
PM_{2.5}	Small airborne particles, more specifically particulate matter less than 2.5 micrometres in aerodynamic diameter
PM₁₀	Small airborne particles, more specifically particulate matter less than 10 micrometres in aerodynamic diameter
PRTR	Pollutant Release and Transfer Register
SAC	Special Areas of Conservation
SSSI	Site of Special Scientific Interest
TfL	Transport for London
VFR	Variable Refrigerant Flow
WCC	Westminster City Council
WHO	World Health Organization
µg/m³	Microgrammes per cubic metre

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