6 Air Quality

6.1 Introduction

6.1.1 This chapter sets out the assessment of air quality impacts and effects from the construction and operation of the Proposed Development.

6.1.2 The Proposed Development concerns the outline application for redevelopment of the former Sipson Garden Centre site to provide a data centre facility including associated energy infrastructure, security measures and access arrangements.

6.1.3 During the construction phase, the Proposed Development has the potential to impact on air quality due to site emissions of dust and finer particulate matter from construction activity and combustion emissions from site plant and the construction traffic.

6.1.4 During the operational phase, the Proposed Development has the potential to impact on air quality due to combustion emissions from the testing and maintenance of backup generators and combustion emissions from operational traffic movements. The unplanned 'emergency' operation of the backup generators also has the potential to impact on local air quality, although such emissions will be infrequent and of short duration.

6.1.5 The assessment reported in this chapter has been undertaken in line with standard best practice methods for the assessment of air quality impacts from data centre development. It considers the potential for a significant effect to occur with reference to local, regional and national planning policy.

6.1.6 This chapter is also supported by the following technical appendices:

- Appendix 6.1 Legislation, Policy and Guidance
- Appendix 6.2 Construction Site Emissions Assessment Methodology
- Appendix 6.3 Operational Generator Emissions Assessment Methodology

6.1.7 As well as the following figures:

- Figure 6.1 Dusk Risk Assessment Zones
- Figure 6.2 AQ Study Area - Human Health Receptors
- Figure 6.3 AQ Study Area - Ecological Receptors
- Figure 6.4 AQ Study Area - Stack Locations
- Figure 6.5 AQ Study Area - Monitoring Locations
- Figure 6.6 2023 Annual Mean NO2 Concentrations - Normal Operation
- Figure 6.7 2022 1-hour NO2 Concentrations - Normal Operation
- Figure 6.8 2023 Annual Mean NO2 Concentrations - Emergency Operation
- Figure 6.9 5-year windrose plot for Heathrow Airport (2021 - 2025) *(embedded in chapter only)*

6.2 Assessment Methodology

Legislation, Policy and Guidance

6.2.1 Relevant legislation, planning policy and guidance to this assessment is summarised below and described in more detail in Appendix 6.1.

Legislation

- **The Town and Country Planning (Environmental Impact Assessment) Regulations (2017)** (HM Government, 2017), requires developers to evaluate and the significant environmental effects of major projects.
- **Environment Act (1995)** (HM Government, 1995), requires the government to publish a national air quality strategy and mandates local authorities to review, assess, and manage air quality within their areas.
- **Air Quality (England) Regulations (2000)** (HM Government, 2000), establishes legally binding concentration limits and target deadlines at local authority level for specific air pollutants measured in outdoor public areas.
- **Air Quality Standards Regulations (2010)** (HM Government, 2010), set legally binding concentration limits and reduction targets at national level for key outdoor air pollutants to protect public health and the environment.
- **Environment Act (2021)** (HM Government, 2021), establishes long-term statutory targets, enforcement, and systemic post-Brexit governance.
- **The Environmental Protection Act (1990)** (HM Government, 1990), establishes the legal framework for tackling local statutory nuisances.

Planning Policy

National

- **National Air Quality Action Plan** (Defra, 2017), a government strategy that outlines practical steps to cut air pollution, protect public health, and meet legal clean-air targets.
- **National Clean Air Strategy** (HM Government, 2019), sets out comprehensive actions across transport, homes, farming, and industry to reduce damaging air pollutants, protect public health, and improve the environment.
- **Environmental Improvement Plan** (2023) (HM Government, 2023), roadmap to halt biodiversity decline, clean up air and water, and improve England's natural environment across 10 long-term goals.
- **Air Quality Strategy** (AQS) (Defra, 2023), a framework for local authorities in England to use their existing powers to improve community air quality, reduce pollution emissions, and meet long-term public health and environmental targets
- **National Planning Policy Framework** (NPPF) (Ministry of Housing, Communities and Local Government (MHCLG), 2026), central policy document that guides local planning authorities in England on preparing local development plans and making decisions on planning applications.

Regional

- **The London Plan – Spatial Development Strategy for Greater London** (Greater London Authority (GLA), 2021), sets an integrated economic, environmental, transport, and social framework for the physical development and growth of Greater London.
- **Mayor's London Environment Strategy** (GLA, 2018), framework launched by the Mayor of London to improve air quality and protect the capital's environment up to 2050.
- **Mayor's Transport Strategy and Transport Action Plan** (Transport for London, 2017), sets a two-decade framework to reduce car dependency.

Local

- **A Vision for 2026 – Local Plan: Part 1 – Strategic Policies** (Adopted November 2012) (London Borough (LB) of Hillingdon, 2012), sets out the overall growth strategy, spatial vision, and core development policies for the borough up to 2026
- **Local Plan Part 2: Development Management Policies** (Adopted January 2020) (London Borough (LB) of Hillingdon, 2020), provides a detailed set of local planning criteria and guidelines used by the council to evaluate and decide on individual planning applications.
- **Supplementary Planning Document – Planning Obligations** (Adopted July 2014) (London Borough (LB) of Hillingdon, 2014), guidance on how the council secures site-developer contributions and mitigation measures required to make new developments acceptable.

Guidance

- **Local Air Quality Management Technical Guidance (2022)** (LAQM.TG22) Defra, 2022), provides local authorities with means to review, monitor, and model local air pollution levels to meet statutory duties under the Environment Acts.
- **Planning Practice Guidance for Air Quality (2024)** (MHCLG, 2024), describes how local planning authorities should account for the impact of development on air quality and public health under the National Planning Policy Framework
- **IAQM Guidance on the assessment of dust from demolition and construction** (IAQM, 2024), provides the assessment framework to evaluate fugitive dust and site emissions from demolition and construction.
- **EPUK/IAQM Air Quality Assessment Guidance for Planning** (EPUK and IAQM, 2017), provides the assessment framework to evaluate air quality impacts on human exposure.
- **IAQM Air Quality Assessment Guidance for Designated Habitats** (IAQM, 2020), provides a joint framework for air quality and ecological professionals to evaluate and screen the effects of atmospheric pollution and deposition from developments on sensitive habitats.
- **$PM_{2.5}$ Targets: Interim Planning Guidance** (Defra, 2024), instructs developers and local authorities to assess the cumulative impact of new developments on fine particulate matter from the design phase to minimize emissions and exposure

- **Air Quality Neutral Guidance** (GLA, 2023), requires new developments in London to keep building and transport emissions at or below set limits.
- **Air Quality Positive Guidance** (GLA, 2023), requires developers to go beyond compliance by actively maximising air quality benefits and minimising pollution exposure through design.
- **The Control of Dust and Emissions during Construction and Demolition SPG** (GLA, 2014), outlines methods for developers to assess, mitigate, and manage air pollutants during construction.
- **Non-Road Mobile Machinery (NRMM) Practical Guide V.5** (GLA, 2022), the Mayor of London's mandatory emission standards for off-road machinery.
- **Air Emissions Risk Assessment for your Environmental Permit Guidance** (Environment Agency, 2016), a regulatory framework to assess site emissions and offsite impacts by comparison with appropriate air quality standards.
- **Specified generators: dispersion modelling assessment** (Environment Agency, 2019), provides an approach to assessing the air quality impact of generator emissions.

Methodology

Establishing Baseline Conditions

6.2.2 Existing baseline conditions are determined by review of monitoring data gathered within the surrounding area by the Local Authority and modelling data published by Defra and the Air Pollution Information System (APIS).

Construction Phase Site Emissions

6.2.3 The impacts associated with the construction phase of the Proposed Development have been qualitatively assessed with reference to the IAQM published 'Guidance on the assessment of dust from demolition and construction' (IAQM, 2024).

6.2.4 According to the IAQM, the main air quality impacts that may arise during construction activities are:

- Dust deposition, resulting in the soiling of surfaces;
- Visible dust plumes, which are evidence of dust emissions;
- Elevated PM_{10} concentrations, as a result of dust generating activities on Site; and
- An increase in concentration of airborne particles and NO_2 due to exhaust emissions from diesel powered vehicles and equipment on Site and vehicles accessing the Site.

6.2.5 Fugitive emissions of airborne particulate matter (including dust) are readily produced through the action of abrasive forces on materials and therefore a wide range of Site preparation and construction activities can have the potential to generate this type of emission, including:

- Demolition;
- Earthworks;
- Construction; and

- Track-out (the transportation of dust and dirt from the construction Site onto the public road network, where it may be deposited and then re-suspended by vehicles using the network).

6.2.6 The following steps, as defined by the IAQM, were followed;

- Step 1: Screen the requirement for a detailed assessment. Human and ecological receptors were identified and distance to the scheme and construction routes were determined;
- Step 2: Assess the risk of dust impacts. The potential risk of dust impacts occurring for each activity was determined, based on the magnitude of the potential dust emissions and the sensitivity of the area;
- Step 3: Identify the need for Site-specific mitigation. Based on the risk of impacts occurring, Site specific mitigation measures were determined; and
- Step 4: Define impacts and their significance. The significance of the potential residual dust impacts (taking mitigation into account) for each activity was determined.

6.2.7 Emissions from construction-related Non-Road Mobile Machinery ("NRMM") and Site plant will have the potential to increase NO_2, PM_{10} and $PM_{2.5}$ concentrations at locations close to working areas of the Site. However, the IAQM construction dust guidance1 states that:

"Experience of assessing the exhaust emissions from on-Site plant (NRMM) and Site traffic suggests that they are unlikely to make a significant impact on local air quality, and in the vast majority of cases they will not need to be quantitatively assessed."

6.2.8 The study area for the assessment of construction phase site emissions includes air quality sensitive land uses within 250m of the construction site boundary and locations within 50m of sections of public road that are within 250m from a site egress, in line with IAQM guidance (2024).

6.2.9 A detailed description of the IAQM construction site emissions assessment is provided in Appendix 6.2. Figure 6.1 shows the construction dust assessment study area.

Construction and Operational Phase Road Traffic Emissions

6.2.10 The IAQM and EPUK Air Quality Planning Guidance (EPUK and IAQM, 2017) provides screening criteria by which to gauge the detail of assessment required to assess the air quality impact of a development for planning purposes. The screening criteria are more stringent where traffic impacts occur on roads where pollutant concentrations are in exceedance or at risk of exceeding an Air Quality Objective (AQO). The presence of an Air Quality Management Area (AQMA) can be taken to indicate the possibility of an exceedance or risk of an exceedance, although if it is known that the affected roads within a larger AQMA have concentrations below 90% of the AQO value, the less stringent criteria are likely to be more appropriate. The screening criteria are set out below:

- 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 in 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) traffic flows on local roads with relevant receptors. (HDV = goods vehicles + buses >3.5t gross vehicle weight). A change in HDV flows of
    - more than 25 AADT within or adjacent to an AQMA
    - more than 100 AADT elsewhere.

6.2.11 The Proposed Development and surrounding road network are located within the LB Hillingdon AQMA, which was declared in 2003 due to elevated concentrations of annual and hourly mean NO_2, and concerns all the Borough located to the south of Ruislip. AQMAs that cover large areas do not mean that the entirety of that area was or still is in exceedance or at risk of exceeding a AQO value. Elevated concentrations are restricted to locations close to busy and often congested sections of the local road network, and locations closest to Heathrow Airport.

6.2.12 The IAQM and EPUK guidance states that where an air quality assessment is identified as being required, i.e. when the screening criteria are exceeded, the assessment may take the form of either a Simple Assessment or a Detailed Assessment. Exceeding the screening criterion does not necessarily mean that detailed assessment of road traffic emissions (i.e. dispersion modelling) is required. The principle underlying the IAQM and EPUK guidance is that any assessment should provide evidence that will lead to a sound conclusion on the presence, or otherwise, of a significant effect on local air quality. A Simple Assessment will be appropriate, if such evidence can be provided. Should it be the case that road traffic emissions are not modelled, the contribution of these emissions to total pollutant concentrations is accounted for in the background pollutant data and air quality monitoring data used to establish baseline conditions.

Operational Phase Backup Generator Emissions

6.2.13 The scope of the air quality assessment includes the dispersion modelling of emissions from the operation of the back-up generators. The assessment quantifies the potential impact of emissions to air from the generators during both routine testing and maintenance (normal operation) and emergency operation.

6.2.14 The backup generators will operate as follows:

- Routine testing and maintenance will be undertaken periodically throughout the year to ensure the generators remain in working condition. It is currently anticipated that the testing and maintenance regime will include:
    - 15 minute off-load tests at 0% load, once per month for 11 months per year, with one generator running at any one time
    - One 120-minute full-load test at 100% load, once per year, with one generator running at any one time
    - One 2-hour emergency test at 100% load, with all generators operating in unison
- Emergency operation is expected to be infrequent but may involve multiple generators operating simultaneously during a single extended grid outage event. The duration of an emergency event cannot be foreseen.

6.2.15 The assessment considers emissions of the main pollutants associated with the combustion of diesel that have the potential to harm human health and/or sensitive habitats. These include NO_X, CO, Non-Methane Hydro-Carbons (NMHC), PM_{10}, and $PM_{2.5}$. With regards to the NO_X emissions, the nitric oxide (NO) is rapidly oxidised to nitrogen dioxide (NO_2) in the atmosphere,

which has the potential to harm human health. The deposition of NO_2 also contributes to nitrogen (N) deposition (Ndep), which has the potential to harm sensitive habitats.

6.2.16 The study area for the assessment of operational backup generators includes all sensitive land uses within 10km of the site, as required by Environment Agency guidance (Environment Agency, 2016). Impacts are reported at the worst affected receptors within that area in each direction of the site.

6.2.17 Total concentrations predicted are compared against the relevant AQOs, Critical Levels and Critical Loads for the pollutants of concern. The AQOs are set out within the Air Quality England Regulations (2000 and subsequent amendments) and the more recent Air Quality Strategy (Defra, 2023) to provide the standard of air quality to be achieved by Local Authorities as part of the Local Air Quality Management (LAQM) regime. Those of relevance to this assessment are listed in Appendix 6.1 (Table 1). For nature conservation receptors, the AQO for annual mean NO_X is also referred to as a Critical Level, the threshold atmospheric concentration of that pollutant above which direct adverse effects on a habitat may occur. Of relevance to impacts on nature conservation sites, there are also Critical Loads for nitrogen (N) deposition, the rate of N deposition from the atmosphere onto land or water below which significant harmful effects on sensitive habitats do not occur. The Critical loads vary by habitat and species, with some being more sensitive to N deposition than others.

6.2.18 The habitats located in the vicinity of the Proposed Development consist of woodland, grassland and open water habitats. Based on the description of Critical Loads for those habitats descried on the APIS, a Critical Load of 10 kgN/ha/yr has been assumed for this assessment.

6.2.19 A detailed description of the backup generator emissions assessment methodology is provided in Appendix 6.3. Figure 6.2 and Figure 6.3 show the air quality study area for the assessment of backup generator emissions. Figure 6.4 shows the modelled building layout with the site boundary and the location of generator stacks.

Determination of Significance

Construction Phase Site Emissions

6.2.20 For the effect of construction phase Site impacts, the aim of the IAQM guidance (2024) is to bring forward a Proposed Development, including mitigation measures, if necessary, that would control impacts so that they give rise to negligible or minor effects at worst at the closest receptors. Measures that reduce dust emissions from site would also likely reduce emissions of finer particles (PM_{10} and $PM_{2.5}$).

6.2.21 The determination of significance is based on professional judgement, taking account of whether effects are permanent or temporary, direct or indirect, constant or intermittent and whether any secondary effects are caused (in this instance, secondary effects refer to dust that is generated and deposited (primary impact) and then re-suspended and deposited again by further activity).

6.2.22 The classification of amenity and health effects on receptors exposed to impacts has been assessed using the relationship between the magnitudes of impact identified, in combination with receptor sensitivity and other related factors where appropriate (as described in the IAQM guidance (2024)), which results in a classification of effects as defined in Table 6.1.

Table 6.1 Impact Descriptors for Construction Phase Site Emissions

Effect	Change in Deposition Rate and/or Short-term Pollutant Concentrations
Substantial	Impact is likely to be intolerable for any more than a very brief period of time and is very likely to cause complaints from local people. Increase in PM_{10} concentrations at a location where concentrations are already elevated and to the extent that the short-term PM_{10} AQO is likely to be exceeded. A significant effect that is likely to be a material consideration in its own right.
Moderate	Impact is likely to cause annoyance and might cause complaints, but can be tolerated if prior warning and explanation has been given. Increase in PM_{10} concentrations at a location where concentrations are already elevated and to the extent that the short-term PM_{10} AQO is at risk of being exceeded. A significant effect that may be a material consideration in combination with other significant effects, but is unlikely to be a material consideration in its own right.
Slight	Impact may be perceptible, but of a magnitude or frequency that is unlikely to cause annoyance to a reasonable person or to cause complaints. Limited increase in PM_{10} concentrations. An effect that is not significant but that may be of local concern.
Negligible	Impact is unlikely to be noticed by and/or have an effect on sensitive receptors. Negligible increase in PM_{10} concentrations. An effect that is not significant change.

Construction and Operational Phase Road Traffic Emissions and Operational Phase Backup Generator Emissions

6.2.23 Significance of local air quality effects on human health sensitive receptors from combustion emissions is determined in line with IAQM and EPUK Air Quality Planning guidance (2017), except for short-term impacts during emergency operation, which follows an approach described by the Environment Agency (2019).

6.2.24 The IAQM and EPUK approach does not define a graduating scale of human health receptor sensitivity. Instead, human health receptors are considered either sensitive or not, depending on the period of time for which they are exposed to emissions. The absolute magnitude of change in pollutant concentrations between the baseline and assessment scenarios, relative to the AQO value, is described and this is used to consider the risk of those AQOs being exceeded.

6.2.25 For a change in annual mean concentrations of NO_2, PM_{10} and $PM_{2.5}$, of a given magnitude, IAQM and EPUK have published recommendations for describing the effects of such impacts at individual receptors. These are set out in Table 6.2.

Table 6.2 Impact Descriptors for Combustion Emissions

Annual Mean Concentrations at Receptor in Assessment Year (% of AQO Value)	% Change in Concentration Relative to an AQO Value				
	<1 %[1]	1 %[2]	2-5 %[3]	6-10 %[4]	>10 %[5]
≤75 %	Negligible	Negligible	Negligible	Slight	Moderate
76 % – 94 %	Negligible	Negligible	Slight	Moderate	Moderate
95 % – 102 %	Slight	Slight	Moderate	Moderate	Substantial
103 % – 109 %	Moderate	Moderate	Moderate	Substantial	Substantial
≥110 %	Moderate	Moderate	Substantial	Substantial	Substantial
[1] Imperceptible; [2] Very low; [3] Low; [4] Medium; [5] Large					

6.2.26 The IAQM/EPUK guidance states that the descriptors are for individual receptors only and that overall significance is determined using professional judgement. It also states that it is unwise to ascribe too much accuracy to incremental changes or background concentrations, and this is especially important when total concentrations are close to the AQO value. For a given year in the future, it is impossible to define the new total concentration without recognising the inherent uncertainty, which is why there is a category that has a range around the AQO value, rather than being exactly equal to it.

6.2.27 A change in predicted long-term (annual mean) concentrations of less than 0.5% of an AQO is considered to be 'Imperceptible'. An impact that is 'Negligible', given normal bounds of variation, would not be capable of having a direct effect on local air quality that could be considered to be significant.

6.2.28 The guidance suggests the potential for 'Low' air quality impacts arises as a result of changes in pollutant concentrations between 2% and 5% of relevant AQO. For example, for annual mean NO_2 and PM_{10} concentrations, this relates to changes in concentrations ranging from 0.6 – 2.1 $\mu g/m^3$. In practice, changes in concentration at the lower end of this magnitude band are likely to be very difficult to distinguish from the inter-annual effects of varying meteorological conditions and are therefore not considered likely to be capable of having a direct effect on local air quality that could be considered to be significant.

6.2.29 Changes in concentration of more than 5% are considered to be of a magnitude which is far more likely to be discernible above the normal variation in baseline conditions and, as such, carry additional weight within the overall evaluation of significance for air quality. 'Moderate' impacts do not necessarily constitute a significant effect, where they do not contribute to an exceedance or risk of an exceedance of an AQO, particularly where such impacts relate to a small minority of receptors when the majority experience lesser impacts. A 'Substantial' impact will almost certainly constitute a significant effect that will require additional mitigation to address.

6.2.30 The IAQM and EPUK guidance also provide thresholds for determining whether short-term (one-hour mean and 24-hour mean) impacts on human health sensitive receptors have the potential to cause a significant effect or not. The guidance indicates that severity of peak short-term concentrations can be described without the need to reference background concentrations as the source contribution is used to measure impact, not the overall short-term concentration at the receptor. The guidance suggests the following criteria to determine the impact of peak short-term source contributions:

- Source contributions ≤10 % of the AQO value represents an Imperceptible impact that is 'Negligible'.

- Source contributions between 11-20 % of the AQO value is Small in magnitude, representing a 'Slight' impact.
- Source contributions between 21-50 % of the AQO value is Medium in magnitude, representing a 'Moderate' impact.
- Source contributions ≥51 % of the AQO value is Large in magnitude, representing a 'Substantial' impact.

6.2.31 In addition to the short-term criteria provided by the IAQM and EPUK (2017), the magnitude of the change in the predicted number of exceedances of the short-term 24-hour PM_{10} AQO value can be directly derived from the predicted annual average PM_{10} value using the relationship defined in LAQM.TG (22) (Defra, 2022). An exceedance of the short-term PM_{10} AQO value is unlikely where annual mean PM_{10} concentrations are less than 32 µg/m^3. Research projects completed on behalf of Defra and the Devolved Administrations have concluded that the short-term 1-hour NO_2 AQO value is unlikely to be exceeded where annual mean concentrations are predicted to be less than 60 µg/m^3.

6.2.32 For short-term impacts of emergency operation, the Environment Agency have produced guidance on the hypergeometric distribution analysis of hourly mean NO_2 concentrations. The effect of short-term impacts from emergency operation are not considered to be significant where the probability of an exceedance is less than 5% (i.e. an exceedance is a 1 in 20 year event) and ideally less than 1% (i.e. an exceedance is a 1 in 100 year event).

6.2.33 For impacts at nature conservation receptors, IAQM guidance (2020) and Environment Agency guidance (2016) both state that impacts may be screened as insignificant ('not significant') where the impact of a Proposed Development is less than 1% of the relevant air quality standards for ecology (AQO for annual mean NO_X (also referred to as a Critical Level) and Critical Load for nitrogen (N) deposition). The Environment Agency apply this screening criterion to statutory designations only (e.g. SACs, SPAs, and SSSIs). At non-statutory designations, the guidance states an impact is insignificant if it is less than 100% of the AQOs or Critical Load. It is important to note that an impact that is not screened as insignificant will not necessarily cause a significant effect. However, that effect should be determined by a competent ecologist.

Consultation

6.2.34 No additional consultation has been undertaken beyond the submission of the Scoping Report.

6.2.35 LBH's EIA Scoping Opinion (Appendix 5.2) was received on 12 October 2026. The comments received in Section 3.7 have been reviewed and are responded to throughout this chapter. On cumulative impacts from the expansion of Heathrow Airport, it is not possible to account for this as a cumulative scheme when no environmental assessments relating to that proposal have been published. Existing Heathrow Airport emissions are accounted for within the baseline monitoring data.

6.2.36 The remainder of the comments within the EIA Scoping Opinion have been taken into account throughout the assessment.

Impacts scoped out of assessment

6.2.37 Table 6.3 lists and describes the impacts scoped out of the air quality assessment.

Table 6.3 Impacts scoped out of the assessment

Potential impact	Justification
Operation phase	
Odour emissions	The Proposed Development will include onsite fuel storage. The assessment of odour emissions due to the storage of fuel on site was scoped out of the assessment. This was done on the basis that the risk of such emissions was so low that there was no risk of a significant effect. Built in mitigation and standard best practice measures will be capable of controlling odour emissions to the extent that any fugitive emissions will be negligible.

Assumptions and Limitations

6.2.38 The air quality assessment reported in this Chapter is subject to the following assumptions and mitigation:

- The Proposed Development Layout and building height information is based on the current masterplan for the site.
- Generator emissions data is based on emissions datasheet for the Cummins QSK78-G23 plant, which is USEPA Tier 2 compliant.
- The traffic data used to inform this assessment is provided by the Applicant's transport expert. The data is subject to the same limitations as the Transport Assessment.
- The assessment does not quantify the contribution of emissions from the local road network or the nearby strategic road network. It is assumed that these emissions from local roads are captured in the Defra background data and the emissions from the nearby strategic road network are captured by LB Hillingdon monitoring data gathered adjacent to those roads.
- The impact of construction phase and operational phase road traffic impacts has been screened out of detailed assessment due to the standard of baseline air quality in the vicinity of the Proposed Development and the limited traffic impact.
- Hourly sequential meteorological data from Heathrow Airport has been assumed to be representative of conditions at the Proposed Development site and surrounding area.
- A number of precautionary assumptions have been made with regards to the modelling of backup generator emissions:
    - It has been assumed that generator operations will be at full load. In reality, some planned tests will be undertaken at reduced loads and the load during emergency operation will be subject to the power demand at that time.

- It has been assumed that the minimum test duration is one hour, due to the resolution of the hourly sequential meteorological data. In reality, some tests are anticipated to last for just 15 minutes.
- For the assessment of testing and maintenance, it has been assumed that each generator could be operational in isolation on any hour of the year and thus coinciding with the worst meteorological hours at each receptor. In reality, such a coincidence in highly improbable.
- In line with Environment Agency guidance (2019), it has been assumed that 70% of long-term NO_X emissions is converted to NO_2 and 35% of short-term NO_X emissions is converted to NO_2. In reality, NO_X to NO_2 conversion is likely to be less efficient that this, particularly during the emergency operation when the conversion is limited by the ozone available.

6.3 Baseline Conditions

Existing Baseline

Local Air Quality Management

6.3.1 The Proposed Development is located within the administrative boundary of the London Borough of Hillingdon (LB Hillingdon). In 2003, LB Hillingdon declared an AQMA encompassing the southernmost two-thirds of the Borough on the basis that concentrations of NO_2 were in exceedance of the annual mean national ambient AQO for this pollutant. In the immediate vicinity of the Site, the main source of pollution is considered to be related to emissions from road traffic, although there are additional contributions from local energy generation, industry and other (non-road) transportation sources.

6.3.2 To assess the significance of any new development proposal (in terms of air quality), it is necessary to identify and understand the baseline air quality conditions in and around the study area. This provides a reference against which any potential changes in air quality can be assessed.

6.3.3 To identify the existing air quality conditions, a review of publicly available information has been undertaken, including the latest local authority air quality reports, monitoring data, and background concentration maps. This section presents the results of the review.

6.3.4 LB Hillingdon has ten Air Quality Focus Areas (AQFAs) which lie along major transport corridors (A40/South Ruislip, A40/Long Lane, A40/Swakeleys Road, Ossie Garvin to Southall Park, Heathrow Area, Hayes, Uxbridge Road Corridor, Uxbridge Town Centre, West Drayton/Yiewsley, and M4 Focus Area). The Proposed Development site is located within and adjacent to the M4 AQFA and the Heathrow Area AQFA.

Local Monitoring Data

6.3.5 Under the requirements of Part IV of the Environment Act, LB Hillingdon has a duty to undertake the periodic review and assessment of local air quality within its administrative area. A review of existing baseline air quality has been undertaken using information available from LB Hillingdon's most recently available Annual Status Report on Local Air Quality Management (LB Hillingdon, 2025). LB Hillingdon operates 12 automatic continuous monitors which measure NO_2 and PM_{10}, as well as undertaking NO_2 monitoring at 44 locations across the borough using passive diffusion tubes.

6.3.6 The monitoring sites located closest to the Proposed Development site are shown on Figure 6.5. The nearest automatic monitoring sites to the Proposed Development are SIPS (Hillingdon Sipson) and HIL (London Hillingdon), located approximately 790m and 590m away respectively. Table 6.4 shows that for the monitoring sites where data is available for 2025, annual mean NO_2 concentrations were well below the AQO value for that pollutant (40 µg/m^3) in the vicinity of the Proposed Development site. The highest concentration measured was at a location adjacent to Bath Road (34 µg/m^3), ~1km to the south. Annual mean NO_2 concentrations were also well below the AQO value in 2024. This is demonstrated by a greater dataset that includes LB Hillingdon's passive diffusion tube monitoring data, for which the 2025 dataset is not yet published. From the period shown in Table 6-4, the most recent exceedance of the annual mean NO_2 AQO value occurred on Bath Road in 2022 (monitoring location 'Hill 41').

Table 6.4 Annual Mean NO_2 Monitoring Data – LAQM and Defra

Site Name	Type	Coordinates (x,y)	Annual Mean Concentration (µg/m^3)[1]					
			2020	2021	2022	2023	2024	2025
Automatic Reference Monitoring Stations								
LHR2	Airport	508600,176700	25	25	30	32	29	29
HIL (Defra)	Urban background	506951,178605	28	25	28	25	23	25
HI3	Roadside	509557,176994	22	22	29	27	27	24
HRL (Defra)	Airport	508295,177800	20	20	24	22	19	22
SIPS	Urban background	507325,177282	19	19	24	23	22	26
HIL1	Roadside	505561,177661	18	18	19	18	16	17
T55	Airport	505207,177072	19	19	26	21	18	20
T54	Airport	505729,174496	17	17	20	20	18	-[4]
HIL5	Roadside	510303,178882	31	31	34	34	29	32
LHRBR	Roadside	508279,176949	**40**[2]	34	36[3]	36[3]	32	34
Passive Non-Reference Diffusion Tubes								
HILL 01	Roadside	506926,178614	25.6	25.7	29.4	27.5	24.0	-[4]
HILL 09	Roadside	508758,177718	23.8	24.5	28.8	26.7	23.5	-[4]
HILL 10	Roadside	508414,177125	25.2	26.4	28.3	31.5	26.0	-[4]
HILL 11	Roadside	505736,177752	20.3	18.2	21.9	20.1	18.0	-[4]
HILL 16	Roadside	505920,177188	25.4	26.4	31.0	28.0	25.8	-[4]
HILL 20	Urban Background	506503,179510	31.6	31.5	34.5	29.2	23.6	-[4]
HILL 21	Urban Background	507141,179628	23.4	24.1	27.9	24.5	21.9	-[4]
HILL 25	Urban Background	508773,177352	28.3	28.5	32.8	30.2	25.7	-[4]
HILL 26	Roadside	509499,178370	28.2	26.8	29.2	27.7	23.1	-[4]
HILL 29	Urban Background	505906,178497	23.7	23.0	25.2	24.1	20.4	-[4]
HILL 39	Roadside	506000,176969	29.2	29.1	37.1[3]	32.6	27.0	-[4]
HILL 40	Roadside	507316,177576	23.6	23.4	26.6	27.8	24.1	-[4]
HILL 41	Roadside	507369,176966	31.8	32.9	**40.1**[2]	38.6[3]	32.0	-[4]

[1] Number of decimal places reported consistent with LB Hillingdon ASR (2025); [2] An **exceedance** of the AQO value; [3] At risk of exceeding the AQO value (within 10%); [4] No data available.

6.3.7 Table 6.5 shows that mean PM_{10} concentrations measured in 2025 were well below the AQO value for that pollutant (40 µg/m^3) in the vicinity of the Proposed Development site. The highest concentration measured was at a location adjacent to North Hyde Road (HIL5) (27 µg/m^3), ~3km to the east. Annual mean PM_{10} concentrations were also well below the AQO value across all years for which data is provided.

Table 6.5 Annual Mean PM_{10} Monitoring Data – LAQM and Defra

Site Name	Type	Coordinates (x,y)	Annual Mean Concentration (µg/m^3)[1]					
			2020	2021	2022	2023	2024	2025
LHR2	Airport	508600,176700	13	11	11	13	11	16
HIL (Defra)	Urban background	506951,178605	-[2]	-[2]	-[2]	14	13	17
HI3	Roadside	509557,176994	24	23	20	22	18	21
HRL (Defra)	Airport	508295,177800	15	14	13	13	11	17
HIL1	Roadside	505561,177661	15	16	14	16	13	13
T55	Airport	505207,177072	13	12	12	13	12	15
T54	Airport	505729,174496	15	13	12	13	12	-[2]
HIL5	Roadside	510303,178882	28	25	26	30	22	27
LHRBR	Roadside	508279,176949	-[2]	14	14	16	13	16

[1] Number of decimal places reported consistent with LB Hillingdon ASR (2025); [2] No data available.

6.3.8 Table 6.6 shows that mean $PM_{2.5}$ concentrations measured in 2025 were well below the AQO value for that pollutant (20 µg/m^3) in the vicinity of the Proposed Development site. Measured concentrations were consistent across all monitoring sites (9 µg/m^3). Annual mean $PM_{2.5}$ concentrations were also well below the AQO value across all years for which data is provided.

Table 6.6 Annual Mean $PM_{2.5}$ Monitoring Data – LAQM and Defra

Site Name	Type	Coordinates (x,y)	Annual Mean Concentration (µg/m^3)[1]					
			2020	2021	2022	2023	2024	2025
LHR2	Airport	508600,176700	9	7	7	8	7	9
HIL (Defra)	Urban background	506951,178605	-[2]	-[2]	-[2]	-[2]	7	9
HRL (Defra)	Airport	508295,177800	10	8	8	8	7	9
T55	Airport	505207,177072	8	7	7	8	7	9
T54	Airport	505729,174496	10	7	7	8	7	-[2]
LHRBR	Roadside	508279,176949	-[2]	11	8	9	8	9

[1] Number of decimal places reported consistent with LB Hillingdon ASR (2025); [2] No data available.

Background Air Quality

6.3.9 Defra publish modelled background pollutant concentration data that provides a data point for every 1km x 1km grid square across the UK. It provides background concentration data projected forwards to represent future years up to 2040 from an existing base model of 2021.

6.3.10 Background concentration data for the existing baseline year of 2026 is presented in Table 6.7 for the main pollutants of concern to this assessment.

Table 6.7 Background Annual Mean NO_2, PM_{10}, and $PM_{2.5}$ Concentration Data (2026)

1km x 1km Grid Square	Pollutant Concentration (µg/m^3)		
	NO_2	PM_{10}	$PM_{2.5}$
506500, 179500	15.5	13.5	7.9
507500, 179500	16.5	13.4	7.8
508500, 179500	16.4	13.5	8.0
506500, 178500	17.2	14.7	8.0
507500, 178500	18.3	14.8	8.1
508500, 178500	17.9	14.8	8.1
506500, 177500	18.8	13.3	7.7
507500, 177500	20.1	13.6	7.8
508500, 177500	20.1	13.3	7.9

6.3.11 The background pollutant concentration data for 2026 shows that concentrations in the vicinity of the Proposed Development site were forecast by the Defra model to be well below the AQO value for each respective pollutant.

Dust Deposition

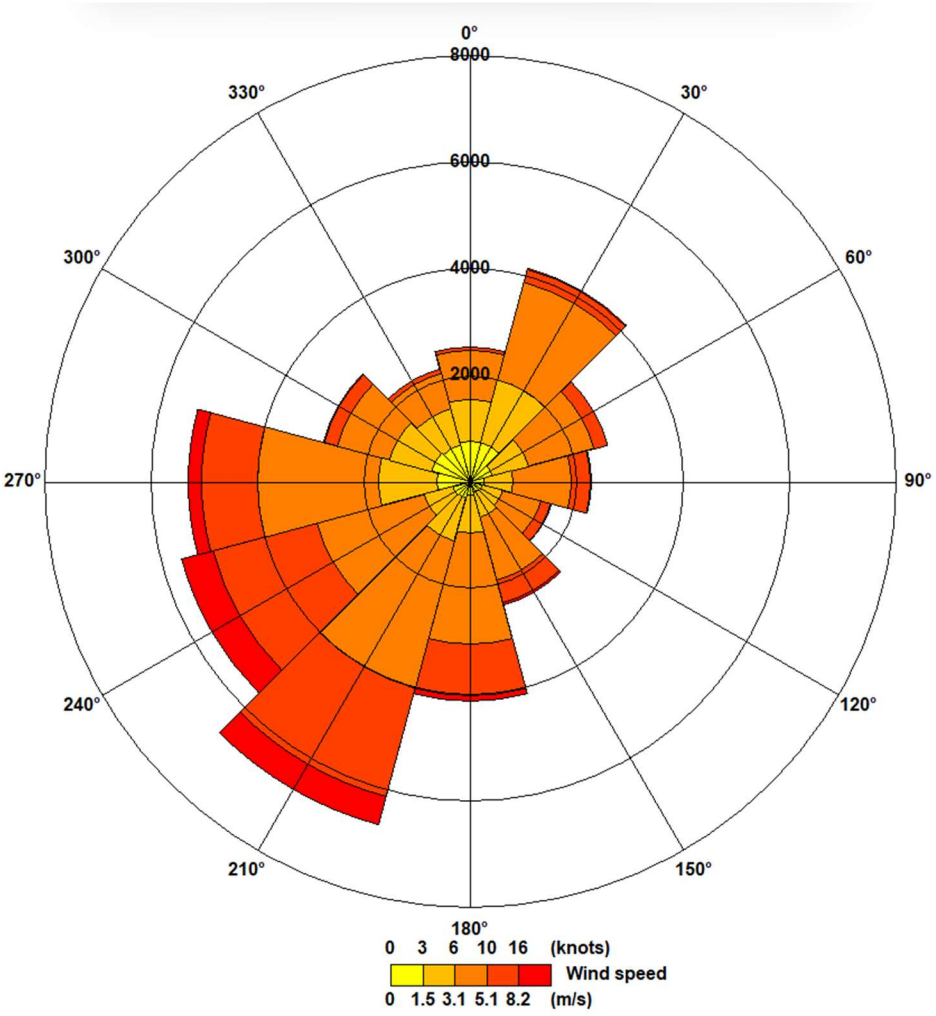
6.3.12 There is no requirement for Local Authorities to monitor dust deposition under their LAQM responsibilities and, as such, there is no baseline dust deposition monitoring data available for the area.

6.3.13 In the absence of data, a review of aerial mapping of the area suggests that baseline dust conditions could potential be more elevated than is typical of a semi-urban environment. This is because of the proximity of the site to the processing facilities of a nearby quarry, less than 150m to the east and southeast of the Proposed Development site, and a waste transfer station, 400m to the west-southwest.

Meteorological Conditions

6.3.14 The assessment is informed by five years of hourly sequential meteorological data from Heathrow Airport, which is located within 2km of the Proposed Development site boundary. A windrose plot of the 5-year dataset is provided in Figure 6.9. The plot shows that predominantly, winds will blow from the site towards receptors located to the north, northeast and east of the Proposed Development site. However, it is important to note that winds will blow from the site towards all receptors on occasions throughout the year.

Figure 6.9 5-year windrose plot for Heathrow Airport (2021 - 2025)



Future Baseline

6.3.15 It is widely accepted that air quality will improve over future years, due to improving emissions technologies and the decarbonisation of the transport and energy sectors. This is evidenced by future projections of background air quality published by Defra and future projections of vehicle emissions factors, also published by Defra.

6.3.16 Projected background pollutant concentration data for the 1km x 1km grid squares in the immediate vicinity of the Proposed Development Site for the first full operational year of the Proposed Development are provided in Table 6.8. The table also demonstrates the level of reduction anticipated from Defra background projections from 2026 to 2029.

Table 6.8 Background Annual Mean NO_2, PM_{10}, and $PM_{2.5}$ Concentration Data (2029)

1km x 1km Grid Square	Pollutant Concentration (µg/m³)[1]		
	NO_2	PM_{10}	$PM_{2.5}$
506500, 179500	14.3 (-8%)	13.3 (-2%)	7.7 (-3%)
507500, 179500	15.3 (-7%)	13.2 (-2%)	7.6 (-3%)
508500, 179500	15.2 (-7%)	13.3 (-2%)	7.8 (-3%)
506500, 178500	15.6 (-9%)	14.5 (-1%)	7.8 (-3%)
507500, 178500	16.6 (-9%)	14.6 (-1%)	7.9 (-3%)
508500, 178500	16.5 (-8%)	14.6 (-1%)	7.8 (-3%)
506500, 177500	17.9 (-5%)	13.0 (-2%)	7.5 (-3%)
507500, 177500	19.0 (-5%)	13.4 (-2%)	7.6 (-3%)
508500, 177500	19.1 (-5%)	13.1 (-2%)	7.7 (-3%)

[1] Reduction in 2029 background pollutant concentration data from existing baseline concentration in 2026 shown in parenthesis.

6.3.17 The background pollutant concentration data for 2029 shows that concentrations in the vicinity of the Proposed Development site were forecast by the Defra model to be well below the AQO value for each respective pollutant. According to the model, annual mean NO_2 concentrations are projected to fall by between 5% and 9% between 2026 and 2029 and annual mean concentrations of PM_{10} and $PM_{2.5}$ are projected to fall by between 1% and 3%.

6.4 Inherent design mitigation

6.4.1 A number of measures have been designed into the Proposed Development to reduce the potential for impacts on local air quality. These are listed in the Table 6.9 below.

Table 6.9 Designed-in measures

Design measure	Justification
The submission of the Environmental Statement for the Proposed Development is supported by an Outline Construction Environmental Management Plan (OCEMP) which will include standard best practice control measures to reduce construction emissions from site.	The assessment of construction dust and site emissions described in this assessment identifies the level of dust mitigation required to ensure that a significant effect on local air quality does not occur from construction. The control measures identified by the assessment are set out in Section 6.6.
The submission of the Environmental Statement for the Proposed Development is supported by an Outline Construction Traffic Management Plan (OCTMP) which will include standard best practice control measures to reduce the impact of construction traffic movements on the public road network.	A secondary benefit such measures can be to reduce emissions to air from construction traffic.

Design measure	Justification
The submission of the Environmental Statement for the Proposed Development is supported by an Outline Operational Traffic Management Plan (OOTMP) which will include standard best practice control measures to reduce the impact of operational traffic movements on the public road network.	A secondary benefit such measures can be to reduce emissions to air from operational traffic.
Backup generator emissions will be released from an appropriate stack height that allows for efficient dispersion.	Efficient dispersion will reduce the impact of emissions at air quality sensitive receptors during normal and emergency operation.
During testing and maintenance, only one generator will be operational at any one time, with the exception of the 120-minute emergency test that will occur once per year.	Will limit the impact of emissions on AQO value with an hourly mean averaging period during normal operation.
During normal testing and maintenance, the one generator being tested will operate at the specified load for no longer than the duration planned: - 1 x 15-minute test load per month on 11 months of the year at 0% load - 1 x 120-minute test per year at 100% load During the emergency test, the generators tested will operate at 100% for no longer than the 120-minutge duration planned.	Will limit the mass of emissions released and subsequent impact of emissions from normal operation.
During emergency operation (outage of the primary high voltage power supply), the generators will operate at the load required for no more than the number of hours per year identified by this assessment. The number of hours is based on a probability analysis to demonstrate that the risk of an exceedance of an air quality standard is improbable.	Will limit the mass of emissions released and subsequent impact of emissions from emergency operation.

6.5 Potential effects prior to additional mitigation

Construction Phase

Site Emissions

6.5.1 The construction dust assessment has been undertaken in line with IAQM guidance (2024). Construction works at the Site will include the following activities:

- Demolition of existing building and structures;
- Levelling of the Site and groundworks;
- Construction of access roads;
- Construction of data centre halls and ancillary buildings and structures; and
- Landscaping.

6.5.2 Step 1 of the IAQM construction dust guidance is to identify whether there are human health sensitive or amenity sensitive receptors within 250m of the Site boundary and/or within 50m of a public road up to 250m away from a Site egress. Step 1 is also to identify any nature conservation receptor within 50m of the Site boundary and/or within 50m of a public road up to 250m away from a Site egress. The findings of Step 1 are summarised as follows:

- There are amenity and human health sensitive receptors with the distances described above. These include:
  - Holiday Inn Hotel to the north of the Proposed Development;
  - Residential properties on Sipson Road to the west of the Proposed Development; and
  - The Lady Nafisa Secondary school for Girls to the south of the Proposed Development.

6.5.3 Figure 6.1 shows the area considered in Step 1 of the guidance. There are no designated nature conservation Sites within 50m of the Site boundary.

6.5.4 Step 2(a) of the IAQM construction dust guidance is to identify the magnitude of dust and particulate emissions that could potentially occur during the construction works, based on the scale of the works and likely activities. Step 2(b) is to also identify the sensitivity of the area dust and particulate matter emissions impacts, based on the sensitivity of individual receptors, and the number and proximity of those receptors to the Site.

6.5.5 The scale and nature of the works have been compared against the criteria given in the IAQM guidance to determine whether the magnitude of dust and particulate emissions is small, medium, or large. This takes in to account several factors, including the volume of building and structures to be demolished, the area of the Site, the volume of buildings and structures being erected, and the number of outward HGV movements from Site. The findings of Step 2 are summarised as follows:

- Magnitude of emissions:
  - Demolition – Medium, because building and structures to be demolished have a volume of less than the IAQM criteria of 12,000m^3, but include structures made from potentially dust generating materials.
  - Earthworks – Medium, because the area of the Site is less than the IAQM high criteria of 110,000m^2 and more than IAQM low criteria of 18,000m^2.
  - Construction – Medium, because whilst the volume of buildings and structures being erected is greater than the IAQM high criteria of 75,000m^3, the construction materials will be prefabricated with a low potential for dust generation and there is no reason for sandblasting to occur on Site.
  - Trackout – Medium, because the peak number of outward HGV movements will be between 20 and 50 trips.
- Sensitivity of the area:
  - Dust soiling and amenity – High, because there are between 10 and 100 high sensitivity land uses within 20m of the Site boundary.
  - Human health – Low, because there background PM_{10} concentrations are less than 24 µg/m^3 and there are less than 100 high sensitivity land uses within 20m of the Site boundary.

6.5.6 For Step 2(c) of the IAQM guidance (2024), the risk of dust impacts occurring is ascertained by the relationship between the magnitude of dust emissions for each construction activity grouping against the sensitivity of the area to the types of impact considered. For the Proposed Development, this is summarised as follows:

- Demolition
  - Amenity – Medium risk
  - Human health – Low risk
- Earthworks
  - Amenity – Medium risk
  - Human health – Low risk
- Construction
  - Amenity – Medium risk
  - Human health – Low risk
- Trackout
  - Amenity – Low risk
  - Human health – Negligible risk

6.5.7 In line with the IAQM guidance, the risk of dust impacts summarised above is used to determine the level of mitigation required to ensure the effect of such impacts is not significant. The mitigation measures determined are provided in Section 6.6.

Traffic Emissions

6.5.8 Construction phase traffic data is not available at this stage of the planning process for the Proposed Development. As such, no quantitative assessment of construction phase traffic emissions impacts is reported in this chapter.

6.5.9 The construction of the Proposed Development will generate additional traffic movements on the public road network associated with the delivery of construction materials, the removal of construction waste, and the commuting of construction staff. There is the potential that during peak periods of construction, construction traffic movements could exceed the IAQM and EPUK screening criteria set out in Paragraph 6.2.10.

6.5.10 However, a review of baseline air quality in the area (see Section 6.3) demonstrates that air quality has been of a good standard over the past two-years of data available for all locations and good for a longer period than that at most locations. Currently, there is considered no risk of an exceedance of any of the relevant AQO values with all recent monitoring showing that annual mean concentrations are below or well below 90% of their AQO values. It is considered unlikely that the temporary impact of construction traffic emissions would cause an exceedance of an AQO value or put an AQO value at risk of an exceedance.

6.5.11 Given the above, the impact of construction traffic emissions is considered to be **Negligible** to **Slight Adverse** at worst. The effect of such an impact is **Not Significant**.

Operational Phase

Site Emissions – Normal Operation

Human Health Sensitive Receptors

6.5.12 During normal operation the backup generators are each operational for 15 hours per year, due to planned testing and maintenance. The Proposed Development includes 32 generators resulting in 480 hours of operation per year across the site, or 5% of the year.

6.5.13 The predicted air quality impact of the Proposed Development during normal operation is presented in Table 6.10 and Table 6.11. Table 6.10 reports the receptor that experiences the largest increase in pollutant concentrations for each pollutant and averaging period included in the assessment. Table 6.11 reports the receptor that experiences the largest total pollutant concentrations for each pollutant and averaging period.

6.5.14 The results shown in both tables are also the worst across the five years of meteorological data used to inform the assessment. Impacts at all receptors modelled are reported in Appendix 6.3. The location of receptors modelled is shown in Figure 6.2. Contour plots showing the spatial distribution of impacts for the key pollutants during normal operation are provided in Figure 6.6 and Figure 6.7.

Table 6.10 Predicted Impacts at the Receptor which Experiences the largest increase in Concentrations during Normal Operation

Pollutant	Averaging Period	Worst Affected Receptor	Proposed Development Cont.[1,2] (µg/m³)	Background Cont.[3] (µg/m³)	Total Conc.[4,5] (µg/m³)	Impact Description[6]
NO_2	Annual	R4a	0.2 (0.5%)	20.6	20.8 (52%)	Negligible
	Hourly	S4	124.1 (62%)	41.1	165.2 (82.6%)	Substantial[7]
PM_{10}	Annual	R4a	<0.1 (<0.1%)	13.7	13.7 (34.2%)	Negligible
	Daily	R4a	1.6 (3.2%)	27.4	29.0 (58.0%)	Negligible
$PM_{2.5}$	Annual	R4a	<0.1 (<0.1%)	7.9	7.9 (39.5%)	Negligible
CO	Running 8-hour	S4	187.1 (1.9%)	992.0	1179.1 (11.8%)	Negligible
HC	Annual	R4a	<0.1 (0.3%)	0.6	0.6 (13.0%)	Negligible

[1] The contribution caused by the Proposed Development; [2] The contribution caused by the Proposed Development as a percentage of the AQO value; [3] The background contribution representing ambient conditions; [4] The total concentration is the sum of the background and Proposed Development Contributions; [5] The total concentration as a percentage of the AQO value; [6] The description of the impact based on the IAQM and EPUK planning guidance (2017); [7] Based on the precautionary assumption that testing of the generator closest to the receptor will coincide with the worst hourly meteorological conditions for that receptor.

Table 6.11 Predicted Impacts at the Receptor which Experiences the Highest Total Concentrations during Normal Operation

Pollutant	Averaging Period	Worst Affected Receptor	Proposed Development Cont.[1,2] (µg/m³)	Background Cont.[3] (µg/m³)	Total Conc.[4,5] (µg/m³)	Impact Description[6]
NO_2	Annual	M5	<0.1 (<0.1%)	34.0[7]	34.0 (85.0%)	Negligible
	Hourly	S4	124.1 (62%)	41.1	165.2 (82.6)	Substantial[8]
PM_{10}	Annual	M3	<0.1 (<0.1%)	15.1	15.1 (37.7%)	Negligible
	Daily	R1a	0.9 (1.7%)	29.8	30.7 (61.3%)	Negligible
$PM_{2.5}$	Annual	M3	<0.1 (<0.1%)	8.3	8.3 (40.6%)	Negligible
CO	Running 8-hour	S4	187.1 (1.9%)	992.0	1179.1 (11.8%)	Negligible
HC	Annual	S7	<0.1 (<0.1%)	0.7	0.7 (13.0%)	Negligible

[1] The contribution caused by the Proposed Development; [2] The contribution caused by the Proposed Development as a percentage of the AQO value; [3] The background contribution representing ambient conditions; [4] The total concentration is the sum of the background and Proposed Development Contributions; [5] The total concentration as a percentage of the AQO value; [6] The description of the impact based on the IAQM and EPUK planning guidance (2017); [7] Based on the monitored concentration to account for the nearby road contribution; [8] Based on the precautionary assumption that testing of the generator closest to the receptor will coincide with the worst hourly meteorological conditions for that receptor.

6.5.15 Table 6.10 shows that the impact of annual mean NO_2, PM_{10}, $PM_{2.5}$, and HC, and the impact of daily mean PM_{10} and 8-hour mean CO, is **Negligible**. However, the impact on hourly mean NO_2 appears elevated. This is due to the overly precautionary nature of the assessment for that pollutant. The hourly mean NO_2 impact reported is the 19th highest hourly concentration during the worst of the five meteorological years considered, assuming each generator could operate in isolation on any hour of the year. The dispersion model therefore predicts the 19th worst hourly concentration assuming that testing and maintenance of the backup generator closest to that receptor is operational on each of the hours that cause the 19 highest concentrations in that calendar year at that location. Given that each generator will only be tested for 15 hours per year (480 hours per year aggregated across all generators), it is highly improbable that the testing of the generators closest to that receptor will occur on those worst meteorological hours. The hourly mean concentration (the 19th worst hour over the calendar year) will be considerably lower than that reported here and the fact that the precautionary assessment does not cause an exceedance of that AQO value is evidence that the impact will be no more than **Slight Adverse**.

6.5.16 Without additional mitigation, the effect of the **negligible to slight adverse** impacts report for normal operation is **Not Significant**.

Nature Conservation Sensitive Receptors

6.5.17 The impact of normal operation on nature conservation sensitive receptors is summarised in Table 6.12. The table provides the worst affected receptor point on each designated site considered in the assessment. Predictions for all receptor points are provided in Appendix 6.3.

Table 6.12 Predicted Impacts at the Receptor which Experiences the Highest Total Concentrations during Normal Operation

Pollutant	Habitat	Proposed Development Contribution	Background Contribution	Total Concentration or Deposition Rate	Impact Description
Annual mean NO_X	South West London Waterbodies (SPA)	<0.1 µg/m³ (<0.1%)	24.8 µg/m³	24.8 µg/m³ (82.7%)	Negligible
	Field Close Open Space (LWS)	<0.1 µg/m³ (<0.1%)	20.5 µg/m³	20.5 µg/m³ (68.4%)	Negligible
	Lower Colne (LWS)	<0.1 µg/m³ (<0.1%)	19.3 µg/m³	19.3 µg/m³ (64.4%)	Negligible
Annual N Deposition Rate	South West London Waterbodies (SPA)	<0.1 kgN/ha/yr (<0.1%)	11.8 kgN/ha/yr	11.8 kgN/ha/yr (118.0%)	Negligible
	Field Close Open Space (LWS)	<0.1 kgN/ha/yr (<0.1%)	13.0 kgN/ha/yr	13.0 kgN/ha/yr (130.0%)	Negligible

Pollutant	Habitat	Proposed Development Contribution	Background Contribution	Total Concentration or Deposition Rate	Impact Description
	Lower Colne (LWS)	<0.1 kgN/ha/yr (<0.1%)	12.5 kgN/ha/yr	12.5 kgN/ha/yr (125.0%)	Negligible

6.5.18 Due to the limited number of operational hours, the impact of the Proposed Development on nature conservation sensitive receptors during normal operation in **Negligible**. The effect of such an impact is **Not Significant**.

Site Emissions – Emergency Operation

Human Health Sensitive Receptors

6.5.19 During emergency operation the backup generators are required to operate in unison for an unplanned number of hours per year. Such events are unforeseeable and, therefore, it is impossible to estimate the aggregated duration of such operation over a calendar year.

6.5.20 For this reason, the Environment Agency have developed a methodology for estimating the number of operational emergency hours that can occur before the probability of an exceedance of the hourly mean AQO value for NO_2 is unacceptable. The hypergeometric distribution analysis focuses on hourly mean NO_2, because that is the AQO value most likely to be exceeded by the emergency operation, given the short-term nature of emergency events. The impact on other pollutants with AQO Values with short-term averaging periods will be no worse than that reported for hourly mean NO_2.

6.5.21 The calculated number of hours of emergency operation based on the probability of an exceedance of the hourly mean NO_2 AQO values is provided in Table 6.13.

Table 6.13 Probability of Emergency Operation causing an Exceedance of the Hourly Mean NO_2 AQO value at the Worst Affected Receptor

Year	Worst Affected Receptor	Number of Hours of Operation per Year	
		Probability of an Exceedance <1%	Probability of an Exceedance <5%
2021	R4a	65	75
2022	S4	55	64
2023	S4	62	72
2024	S4	56	64
2025	S4	62	71

6.5.22 Table 6.13 shows that emergency operation can occur for 55 hours per year before the probability of an exceedance is greater than 1% and 64 hours per year before the probability of an exceedance is greater than 5%.

6.5.23 The Environment Agency state that "*Where the probability is:*

- *1% or less – exceedances are highly unlikely*
- *less than 5% – exceedances are unlikely as long as the generator plant operational lifetime is no more than 20 years*
- *more than or equal to 5% – there's potential for exceedances and the regulator will consider if acceptable on a case-by-case basis".*

6.5.24 Assuming a probability of more than 5% could potentially represent a significant effect, the assessment of emergency operation is based on all generators operating in unison for up to 79 hours per calendar year (15 hours for testing and maintenance + 64 hours for emergency operation). The predicted air quality impact of the Proposed Development during emergency operation is presented in Table 6.14 and Table 6.15. Table 6.14 reports the receptor that experiences the largest increase in pollutant concentrations for each pollutant and averaging period included in the assessment. Table 6.15 reports the receptor that experiences the largest total pollutant concentrations for each pollutant and averaging period. The results shown are also the worst impact across the five years of meteorological data used to inform the assessment.

6.5.25 Impacts at all receptors modelled are reported in Appendix 6.3. Contour plots showing the spatial distribution of impacts for the key pollutant during emergency operation are provided in Figure 6.8.

Table 6.14 Predicted Air Quality Impacts at the Worst Affected Receptor during Emergency Operation

Pollutant	Averaging Period	Worst Affected Receptor	Proposed Development Cont.[1,2] (µg/m^3)	Background Cont.[3] (µg/m^3)	Total Conc.[4,5] (µg/m^3)	Impact Description[6]
NO_2	Annual	R4a	1.0 (2.5%)	20.6	21.6 (54.0%)	Negligible
PM_{10}	Annual	R4a	<0.1 (<0.1%)	13.7	13.7 (34.2%)	Negligible
$PM_{2.5}$	Annual	R4a	<0.1 (0.2%)	7.9	7.9 (39.5%)	Negligible
HC	Annual	R4a	0.1 (1.5%)	0.6	0.7 (14.5%)	Negligible

[1] The contribution caused by the Proposed Development; [2] The contribution caused by the Proposed Development as a percentage of the AQO value; [3] The background contribution representing ambient conditions; [4] The total concentration is the sum of the background and Proposed Development Contributions; [5] The total concentration as a percentage of the AQO value; [6] The description of the impact based on the IAQM and EPUK planning guidance (2017).

Table 6.15 Predicted Impacts at the Receptor which Experiences the Highest Total Concentrations during Emergency Operation

Pollutant	Averaging Period	Worst Affected Receptor	Proposed Development Cont.[1,2] (µg/m³)	Background Cont.[3] (µg/m³)	Total Conc.[4,5] (µg/m³)	Impact Description[6]
NO_2	Annual	M5	0.1 (0.2%)	34.0	34.1 (85.3%)	Negligible
PM_{10}	Annual	M3	<0.1 (<0.1%)	15.1	15.1 (37.7%)	Negligible
$PM_{2.5}$	Annual	M3	<0.1 (0.2%)	8.3	8.3 (41.4%)	Negligible
HC	Annual	R4a	0.1 (1.5%)	0.6	0.7 (14.5%)	Negligible

[1] The contribution caused by the Proposed Development; [2] The contribution caused by the Proposed Development as a percentage of the AQO value; [3] The background contribution representing ambient conditions; [4] The total concentration is the sum of the background and Proposed Development Contributions; [5] The total concentration as a percentage of the AQO value; [6] The description of the impact based on the IAQM and EPUK planning guidance (2017).

6.5.26 Table 6.14 and Table 6.15 shows that the impact of annual mean NO_2, PM_{10}, $PM_{2.5}$, and HC is **Negligible** and **Not Significant** at the worst affected air quality sensitive receptors, should emergency operation occur for up to 64 hours per year.

Nature Conservation Sensitive Receptors

6.5.27 The impact of emergency operation on nature conservation sensitive receptors is summarised in Table 6.16. The table provides the worst affected receptor point on each designated site considered in the assessment. Predictions for all receptor points are provided in Appendix 6.3.

Table 6.16 Predicted Impacts at the Receptor which Experiences the Highest Total Concentrations during Normal Operation

Pollutant	Habitat	Proposed Development Contribution	Background Contribution	Total Concentration or Deposition Rate	Impact Description
Annual mean NO_X	South West London Waterbodies (SPA)	<0.1 µg/m³ (<0.1%)	24.8 µg/m³	24.8 µg/m³ (82.7%)	Negligible
	Field Close Open Space (LWS)	<0.1 µg/m³ (<0.1%)	20.5 µg/m³	20.5 µg/m³ (68.4%)	Negligible
	Lower Colne (LWS)	<0.1 µg/m³ (<0.1%)	19.3 µg/m³	19.3 µg/m³ (64.4%)	Negligible
Annual N Deposition Rate	South West London Waterbodies (SPA)	<0.1 kgN/ha/yr (<0.1%)	11.8 kgN/ha/yr	11.8 kgN/ha/yr (118.0%)	Negligible

Pollutant	Habitat	Proposed Development Contribution	Background Contribution	Total Concentration or Deposition Rate	Impact Description
	Field Close Open Space (LWS)	<0.1 kgN/ha/yr (0.1%)	13.0 kgN/ha/yr	13.0 kgN/ha/yr (130.1%)	Negligible
	Lower Colne (LWS)	<0.1 kgN/ha/yr (0.1%)	12.5 kgN/ha/yr	12.5 kgN/ha/yr (125.1%)	Negligible

6.5.28 Despite the increased number of operational hours in the emergency scenario, the impact of the Proposed Development on nature conservation sensitive receptors during emergency operation remains **Negligible**. The effect of such an impact is **Not Significant**.

Traffic Emissions

6.5.29 The operational phase traffic impact has been estimated by the project Transport Consultant (AECOM) as two-way annual 24-hour average weekday movements. This data is presented in Table 6.17.

Table 6.17 Operational Phase Traffic Impact (as 24-hour Annual Average Daily Traffic Flow)

Road Link	Increase in LGVs	Increase in HGVs
Sipson Road, north of Site Access	372	18
Sipson Road, south of Site Access	82	4
Screening criteria for road links within or adjacent to an AQMA[1]	100	25
Screening criteria for road links not within or adjacent to an AQMA[1]	500	100

[1] If exceeded, there is the potential for a significant air quality effect, where existing concentrations are within 10% of an AQO value, and a detailed air quality assessment is likely to be required.

6.5.30 This data represents a precautionary estimate of two-way annual 24-hour daily average movements. Traffic movements over the weekend, which are not accounted for in the data provided, will be less than those over the working days of the week that are included, bringing the daily average reported down.

6.5.31 The data presented shows that the operational traffic impact of the Proposed Development is likely to exceed the IAQM and EPUK screening criteria set out above for LDVs (assuming that all Light Goods Vehicles (LGV) associated with the Proposed Development will fall into the LDV category) for road links that are located within or adjacent to an AQMA. The data presented shows that it will not exceed the criteria for HDVs (assuming that all Heavy Goods Vehicles (HGV) associated with the Proposed Development will fall into the HDV category).

6.5.32 Despite the fact that the Proposed Development is located within an AQMA, given the review of baseline air quality in the area (see Section 6.3), which demonstrates no exceedances of an AQO value since 2022 and no risk of an exceedance since 2023, screening of the traffic impact against the IAQM and EPUK criteria for road links that aren't within or adjacent to an AQMA is more appropriate. Traffic impacts fall well below that criteria to suggest that the traffic impact of the Proposed Development will not contribute to a significant effect on local air quality. As such,

the operational traffic emissions impact of the Proposed Development has not been quantified in this assessment.

6.5.33 The baseline air quality review described in Section 6.3 demonstrates there is no risk of an exceedance of any of the relevant AQO values with all recent monitoring showing that annual mean concentrations are below or well below 90% of their AQO values. It is unlikely that the emissions associated with the traffic impact reported in Table 6.17 would cause an exceedance of an AQO value or put an AQO value at risk of an exceedance.

6.5.34 It is also worth noting that the traffic impact reported in Table 6.17 is on the road links either side of the Proposed Development's access road. The traffic impact will therefore disperse with increasing distance from the site to the extent that even the more stringent screening criteria will only be exceeded on roads closest to the Proposed Development.

6.5.35 Given the above, the impact of operational traffic emissions is considered to be **Negligible** to **Slight Adverse** at worst. The effect of such an impact is **Not Significant**.

6.6 Additional Mitigation

Construction Phase

6.6.1 Step 3 of the IAQM construction dust guidance (2024) uses the risk of dust impacts identified in Step 2(c) to compile an appropriate list of dust mitigation to offset that risk and ensure that a significant effect does not occur. The IAQM guidance relevant to the construction dust assessment lists measures that should be applied, if practical, relative to the risk identified (see Section 6.6).

6.6.2 A Low/Medium risk of dust impacts was identified in Section 6.5 due to the potential dust emission magnitude and the sensitivity of the area. Therefore, the list of IAQM mitigation measures taken forward for this Project is proportionate to the risk identified. The measures identified for the construction phase of the Proposed Development are as follows, based on IAQM recommendation for low- and medium-risk Sites:

- Develop and implement a stakeholder communications plan that includes community engagement before work commences on Site;
- Display the name and contact details of the person(s) accountable for air quality and dust issues on the Site boundary. This may be the environment manager/engineer or the Site manager;
- Display the head or regional office contact information;
- Develop and implement a Dust Management Plan ("DMP"). The level of detail will depend on the risk from the Site and should include as a minimum the measures set out here. The DMP should also set out the monitoring of Site emissions to verify the suitability of the mitigation measures;
- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken;
- Make the complaints log available to the local authority when asked;
- 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;

- Undertake daily on-Site and off-Site inspections, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This would include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100m of Site boundary, with cleaning to be provided if necessary;
- 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;
- 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;
- If visual inspections identify offsite impacts, or in response to any complaints, dust deposition, dust flux, or real-time PM_{10} monitoring should be considered;
- Plan construction Site layout so that machinery and dust-causing activities are located away from receptors, as far as possible;
- Erect solid screens or barriers around dusty activities or the Site Boundary that are at least as high as any stockpiles on Site;
- Where possible enclose Site or specific operations during periods of adverse meteorology, where activities have a high potential for dust production at that time;
- Avoid Site runoff of water or mud;
- Keep Site fencing, barriers and scaffolding clean using wet methods;
- Remove materials that have a potential to produce dust from the Site as soon as possible, unless being re-used on Site. If they are being re-used on-Site, cover as described below;
- Cover, seed or fence stockpiles to prevent wind whipping;
- Ensure all on-road vehicles comply with the requirements of relevant NRMM standards, where applicable.
- Ensure all vehicles switch off engines when stationary - no idling vehicles;
- Where practicable, use mains electricity or battery powered equipment to minimise the use of diesel- or petrol-powered generators;
- Impose and signpost a maximum-speed-limit of 15mph 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);
- Produce a Construction Traffic Management Plan to manage the sustainable delivery of goods and materials;
- 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;

- Ensure an adequate water supply on the Site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate;
- Use enclosed chutes and conveyors and covered skips;
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate;
- 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;
- Avoid bonfires and burning of waste materials;
- Avoid scabbling (roughening of concrete surfaces) if possible;
- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place;
- 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;
- For smaller supplies of fine powder materials, ensure bags are sealed after use and stored appropriately to prevent dust.
- 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;
- Avoid dry sweeping of large areas;
- Ensure vehicles entering and leaving Sites are covered to prevent escape of materials during transport;
- Inspect on-Site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable;
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the Site where reasonably practicable);
- 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; and
- Access gates to be located at least 10 m from receptors where possible.

Operational Phase

6.6.3 No additional mitigation is proposed for the operational phase of the Proposed Development.

6.6.4 At the detailed planning application stage, the Applicant may need to submit an updated air quality assessment to reflect changes to the modelled parameters used to inform this assessment, should they have the potential to materially change the conclusions of this assessment. At that same stage, the Applicant will need to submit an Air Quality Neutral Assessment and an Air Quality Positive Assessment, in line with Greater London Authority planning policy.

6.7 Residual effects

Construction Phase

6.7.1 With the application of the mitigation measures listed in Section 6.6, which are considered standard best practice on all well-managed construction sites, the effect of construction phase impacts will be **negligible to slight adverse**. Such an effect is **Not Significant**.

Operational Phase

6.7.2 No additional mitigation measures are required to control operational phase emissions, and the residual effects are as reported in Section 6.5 and **Not Significant**.

6.8 Implications of Climate Change

6.8.1 The air quality assessment reported in this chapter is sensitive to climate change impacts for the following reasons:

- Mean air temperature
  - The increase in summer temperatures could lead to an increase in pollutant concentrations due to the increase efficiency of chemical reactions in the atmosphere.
  - The increase in winter temperatures could lead to a reduction in pollutant concentrations due to reduced temperature inversions.
- Average precipitation rate
  - The summer reduction in future precipitation rates will result in a reduction in the rate of wet deposition (washout), whereby precipitation removes pollutants from the air as it falls to the ground.
  - The winter increase in future precipitation rates will result in an increase in the rate of wet deposition
- Average wind speed
  - The summer reduction in windspeed will reduce the efficiency of dispersion and increase the contribution of emissions close to source
  - The winter increase in windspeed will increase the efficiency of dispersion and reduce the contribution of emissions close to source

6.8.2 The points above demonstrate that climate change will have an impact on local air quality, with some factors likely causing a reduction in pollutant concentrations and others leading to an increase.

6.9 Cumulative effects

6.9.1 Cumulative effects relate to the impact of the Proposed Development in combination with the impact of other committed and reasonably foreseeable developments (referred to as 'cumulative developments') within the surrounding area. Local air quality impacts during the construction and operational phases of the Proposed Development and cumulative developments typically affect receptors located in close proximity to the respective site boundaries, and potentially more distant receptors where they are located adjacent to roads that are subject to a large increase in traffic flow due to development-related vehicle movements, and/or receptors located close to where an emissions plume grounds.

6.9.2 The assessment of the Proposed Development in isolation has demonstrated that the impact of its construction and operation will be negligible to slight adverse at worst at receptors within close proximity to the Proposed Development site. Potentially significant cumulative effects are therefore only likely to occur at receptors close to the Proposed Development site. A list of cumulative developments is provided in Chapter 5 – Approach to Assessment.

6.9.3 The nearest cumulative development concerns the construction of a new hotel, 750m to the southeast of the Proposed Development. There are also a number of cumulative residential developments within 2.5 km of the Proposed Development site. Such cumulative developments potentially introduce new sensitive exposure into the air quality study area. In this instance, the air quality assessment already considers existing air quality sensitive receptors that likely represent a greater level of exposure to the Proposed Development's emissions than those introduced by the cumulative developments. These developments may also introduce additional emissions to the future baseline scenario, where such developments include car parking spaces and or their own energy generation plant, potentially increasing total pollutant concentrations above that reported in this assessment. Given the location of the cumulative residential development sites, it is most likely their traffic emissions impacts on the M4 Tunnel Road West and the M4 motorway that could contribute to a cumulative impact. Given the impact of the Proposed Development at receptor locations close to the M4 Tunnel Road West and the M4 motorway, and the fact that receptors located nearest to these roads in the vicinity of the Proposed Development are provided with a setback distance of at least 30m from the roadside, the cumulative impact is considered to be negligible and the cumulative effect will not be significant.

6.9.4 The cumulative developments also include the construction of new data centres and the amendment of existing other data centre sites, the nearest of which is 2.1 km to the north of the Proposed Development (currently unreferenced development at Prologis Park West, Iron Bridge Road). It is noted that whilst the nearest cumulative development is data centre related, it does not introduce any new long-term sources of emission to air. The next nearest cumulative data centre development is 3.3 km to the northeast of the Proposed Development (49261/APP/2024/2904) and concerns the construction and operation of new data centre hall and associated backup generator. Several other data centre developments are located between 3.4 km and 5 km from the Proposed Development site. However, given the distance between the Proposed Development, the cumulative development and the shared receptors, and the intermittent nature of data centre emissions, the impact of cumulative sources on the receptors close to the Proposed Development will be negligible during both construction and operation.

6.9.5 As such, no additional likely significant effects, due to cumulative developments are anticipated.

6.10 Summary

6.10.1 An assessment of the construction and operation of the Proposed Development has been undertaken in line with industry standard guidance.

6.10.2 A review of baseline air quality has demonstrated that conditions in the vicinity of the Proposed Development are of a reasonably good standard, with no risk of an exceedance shown by monitoring data in the most recent year of data available from each monitoring site. In the last five to six years, exceedances of the annual mean AQO value for NO_2 have occurred at limited locations adjacent to the A4 Bath Road, in 2022 and 2023.

6.10.3 An assessment of construction phase site emissions has been undertaken to determine the level of mitigation required to control impacts to the extent that any effect is not significant. The mitigation measures are standard best practice and when implemented will ensure that the effect of impacts generated by the Proposed Development will not be significant.

6.10.4 An assessment of operational phase emissions has been undertaken. Operational road traffic impacts have been reviewed, and it was determined that there is no potential for their emissions to contribute to a significant effect, due to the limited number of anticipated movements and the standard of existing air quality in the vicinity of the Proposed Development.

6.10.5 Detailed dispersion modelling was undertaken to determine if emissions associated with the operation of the Proposed Development's backup generators could have a significant effect on local air quality. The modelling identified that impacts from testing and maintenance would be negligible for most pollutants at all receptors. Impacts were found to be slight adverse for hourly mean concentrations of NO_2.

6.10.6 The modelling also confirmed that the impact from emergency operation was negligible for all relevant pollutants at all receptors considered. In line with guidance, the consideration of hourly mean NO_2 followed a risk-based approach on the probability of an exceedance of AQO value for that pollutant. Providing emergency operation occurs for an aggregated total of 64 hours per year or less, the probability of an exceedance of the AQO value for hourly NO_2 is less than 5%, which is considered within acceptable limits.

6.10.7 With regards to sensitive nature conservation sites, the dispersion modelling assessment has confirmed that impacts at all designated sites in the locality of the Proposed Development are negligible.

6.10.8 Considering the above, it is concluded that effect of air quality impacts identified for the construction and operation of the Proposed Development are not significant and it does not contravene local, regional, or national planning policy.

6.11 References

- Council of the European Union (2008). Directive 2008/50/EC on Ambient Air Quality and Cleaner Air for Europe. Available at: https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX:32008L0050

- Department for Environment, Food and Rural Affairs (2024). PM2.5 Targets: Interim Planning Guidance. Available at: https://uk-air.defra.gov.uk/pm25targets/planning#:~:text=Defra%20is%20developing%20guidance%20for%20applicants%20and%20Planning,targets%20when%20making%20planning%20applications%20and%20planning%20decisions.

- Department for Environment, Food and Rural Affairs (2023). Air Quality Strategy for England, available at: https://www.gov.uk/government/publications/the-air-quality-strategy-for-england/air-quality-strategy-framework-for-local-authority-delivery

- Department for Environment, Foods and Rural Affairs (2022). Local Air Quality Management Technical Guidance (LAQM.TG(22)). Available: https://laqm.defra.gov.uk/wp-content/uploads/2022/08/LAQM-TG22-August-22-v1.0.pdf

- Department for Environment, Food and Rural Affairs (2018). Supplement to the UK plan for tackling roadside nitrogen dioxide concentrations. Available at: https://assets.publishing.service.gov.uk/media/5f57a1bed3bf7f7231ac6433/air-quality-no2-plan-supplement.pdf

- Department for Environment, Food and Rural Affairs (2018). 25 Year Environment Plant. Available at: https://www.gov.uk/government/publications/25-year-environment-plan

- Department for Environment, Food and Rural Affairs (2017), Air Quality Plan for Nitrogen Dioxide (NO2) in UK. Available at: https://www.gov.uk/government/publications/air-quality-plan-for-nitrogen-dioxide-no2-in-uk-2017

- Environment Agency and Department for Environment, Food & Rural Affairs (Defra) (2019). Specified generators: dispersion modelling assessment – Guidance on how to do detailed air quality modelling for specified generators. Available online https://www.gov.uk/guidance/specified-generators-dispersion-modelling-assessment

- Environment Agency and Department for Environment, Food & Rural Affairs (Defra) (2016). Air emissions risk assessment for your environmental permit guidance. Available online: https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit

- Environmental Protection UK and Institute of Air Quality Management (2017). Land-use planning and development control: Planning for air quality. Available at: https://www.the-ies.org/resources/land-use-planning-and#:~:text=Environmental%20Protection%20UK%20%28EPUK%29%20and%20the%20Institute%20of,in%20the%20land-use%20planning%20and%20development%20control%20processes.

- Greater London Authority (2023). Air Quality Neutral (AQN) guidance. Available at: https://www.london.gov.uk/programmes-strategies/planning/implementing-london-plan/london-plan-guidance/air-quality-neutral-aqn-guidance
- Greater London Authority (2023). Air Quality Positive (AQP) guidance. Available at: https://www.london.gov.uk/programmes-strategies/planning/implementing-london-plan/london-plan-guidance/air-quality-positive-aqp-guidance
- Greater London Authority (2022). Non-Road Mobile Machinery (NRMM) Practical Guide V.5. Available at: https://www.london.gov.uk/sites/default/files/nrmm_practical_guide_april_2022_web.pdf
- Greater London Authority (2021). The London Plan 2021. Available at: https://www.london.gov.uk/programmes-strategies/planning/london-plan/london-plan-2021
- Greater London Authority (2018). London Environment Strategy. Available at: https://www.london.gov.uk/programmes-and-strategies/environment-and-climate-change/london-environment-strategy
- Greater London Authority (2018). Mayor's Transport Strategy. Available at: https://www.london.gov.uk/programmes-strategies/transport/our-vision-transport/mayors-transport-strategy-2018
- Greater London Authority (2014). The Control of Dust and Emissions during Construction and Demolition Supplementary Planning Guidance. Available at: https://www.london.gov.uk/sites/default/files/gla_migrate_files_destination/Dust%20and%20Emissions%20SPG%208%20July%202014.pdf
- HM Government (2023). Retained EU Law (Revocation and Reform) Act 2023. Available at: https://www.legislation.gov.uk/ukpga/2023/28/contents
- H.M Government (2023). Environmental Improvement Plan 2023. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1133967/environmental-improvement-plan-2023.pdf
- HM Government (2023). The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 (SI 2023/96). Available at: https://www.legislation.gov.uk/uksi/2023/96/contents/made
- H.M Government (2021). The Environment Act. Available at: https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted
- HM Government (2020). The Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020. Available at: https://www.legislation.gov.uk/uksi/2020/1313/made
- HM Government (2019). The Air Quality (Amendment of Domestic Regulations) (EU Exit) Regulations 2019. Available at: https://www.legislation.gov.uk/uksi/2019/74/made
- HM Government (2019). Clean Air Strategy 2019. Available at: https://www.gov.uk/government/publications/clean-air-strategy-2019

- HM Government (2018). European Union (Withdrawal) Act 2018. Available at: https://www.legislation.gov.uk/ukpga/2018/16/contents
- HM Government (2017). The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (SI 2017/572). Available at: https://www.legislation.gov.uk/uksi/2017/572/contents/made
- HM Government (2016). The Air Quality Standards (Amendment) Regulations (2016) (SI 2016/1184). Available at https://www.legislation.gov.uk/uksi/2016/1184/contents/made
- HM Government (2010). The Air Quality Standards Regulations (2010) (SI 2010/1001). Available at https://www.legislation.gov.uk/uksi/2010/1001/contents
- HM Government (2002). The Air Quality (England) (Amendment) Regulations. Available at: https://www.legislation.gov.uk/uksi/2002/3043/contents/made
- HM Government (2000). The Air Quality (England) Regulations. Available at: https://www.legislation.gov.uk/uksi/2000/928/contents/made
- H.M Government (1995). The Environment Act. Available at: https://www.legislation.gov.uk/ukpga/1995/25/contents
- HM Government (1990). Environmental Protection Act 1990. Available at: https://www.legislation.gov.uk/ukpga/1990/43/contents
- Institute of Air Quality Management (IAQM) (2024), Guidance on the assessment of dust from demolition and construction January 2024 Version 2.2. Available at: Construction-Dust-Guidance-Jan-2024.pdf (iaqm.co.uk)
- Institute of Air Quality Management (2019). A guide to the assessment of air quality impacts on designated nature conservation sites. Available at: air-quality-impacts-on-nature-sites-2019.pdf
- London Borough of Hillingdon (2025). Air Quality Annual Status Report, May 2025. Available at: https://pre.hillingdon.gov.uk/downloads/file/2768/hillingdon-air-quality-annual-status-report-2025.
- London Borough of Hillingdon (2020). Local Plan Part 2: Development Management Policies, Adopted 16 January 2020. Available at: https://pre.hillingdon.gov.uk/downloads/file/2211/hillingdon-local-plan-part-2-development-management-policies
- London Borough of Hillingdon (2014). Supplementary Planning Document – Planning Obligations. Available at: https://pre.hillingdon.gov.uk/downloads/file/2252/document-b-planning-obligations-spd
- London Borough of Hillingdon (2012). A vision for 2026 – Local Plan Part 1: Strategic Policies, Adopted November 2012. Available at: https://pre.hillingdon.gov.uk/downloads/file/2206/local-plan-part-1-strategic-policies.
- Ministry of Housing, Communities, & Local Government (MHCLG). (2026) National Planning Policy Framework (NPPF). Available at: https://www.gov.uk/guidance/national-planning-policy-framework

- Ministry of Housing, Communities, & Local Government (MHCLG). (2019) Planning Policy Guidance (PPG) – Air Quality. Available at: https://www.gov.uk/guidance/air-quality--3
- Transport for London (2017). Healthy Streets for London. Available at: https://content.tfl.gov.uk/healthy-streets-for-london.pdf

6.12 Assessor information

Table 6.18 Assessor Information

Chapter	Responsibility	Name	Qualifications	Assessor information
Air Quality	AECOM	Gareth Hodgkiss	MSc, BSc, MIAQM, MIEnvSc	Gareth is an Associate Director with AECOM and has over 20 years of experience in the field of air quality and 19 years of experience as an air quality consultant. Gareth has led air quality assessments for data centre projects since 2015 and has helped to deliver assessments to accompany planning and regulatory applications for numerous sites in the UK and Ireland, and further afield in continental Europe, the Middle East and South America. Gareth is a certified AECOM Lead Verifier and has supported clients and projects through Public Inquiry and Development Consents Order examination.

Table 6.19 Summary of Effects

Receptor	Receptor sensitivity	Description of potential impact	Proposed mitigation	Residual effect	Significant / not significant
Construction Phase					
Site emissions (dust and site plant)	High (dust soiling and amenity impacts)	Increase in dust deposition and soiling of private and public property. Slight to Medium adverse.	Standard best practice control measures as published in IAQM guidance	Negligible to Slight adverse	Not significant
	Low (human health impacts)	Increased exposure of the public to short-term pollutant concentrations. Negligible to Slight adverse.	Standard best practice control measures as published in IAQM guidance and secured by the Outline Construction Environmental Management Plan	Negligible	Not significant
Traffic emissions	High	Increased exposure of the public to short-term and long-term pollutant concentrations. Negligible to Slight adverse.	No additional mitigation proposed. Embedded mitigation to include Outline Construction Traffic Management Plan, which will have some benefit on local air quality	Negligible to Slight adverse	Not significant
Operation Phase					
Site emissions (backup generators)	High	Increased exposure of the public to short-term and long-term pollutant concentrations. Negligible to slight adverse.	No additional mitigation proposed. Embedded mitigation includes the release of emissions from height, the minimal use of generators and the testing of generators one at a time	Negligible to Slight adverse	Not significant
Traffic emissions	High	Increased exposure of the public to short-term and long-term pollutant concentrations. Negligible to slight adverse.	No additional mitigation proposed. Embedded mitigation to include Outline Operational Traffic Management Plan, which will have some benefit on local air quality	Negligible to Slight adverse	Not significant

6.13 Mitigation commitments Summary

Table 6.20 Summary for Securing Mitigation

Identified receptor	Type and purpose of mitigation measure (prevent, reduce, offset, enhance)	Means by which mitigation may be secured (e.g. planning condition / legal agreement)	Delivered by	Auditable by
Construction Phase				
Dust and air quality sensitive receptors within 250m of the construction site boundary and 50m of a public road used by construction traffic that is within 250m of the construction site access point	All measures set out in Section 6.6 of the Chapter 6: Air Quality, which are based on industry standard guidance and are implemented as standard best practice on well managed construction sites. The measures are primarily aimed at preventing or reducing emissions at source. Measures also include monitoring the effectiveness of mitigation.	CEMP	Construction contractor	Local Planning Authority
Air quality sensitive receptors adjacent to construction traffic routes on the approach to and from the site	Air quality will benefit indirectly from measures that form part of a Construction Traffic Management Plan (CTMP), such as the timing of deliveries to avoid peak hours, for example.	CEMP or Planning Condition	Contractor or Applicant	Local Planning Authority
Operation Phase				
No additional mitigation is proposed for operational phase emissions.				