Report

14 Blackburn Road, Camden

Air Quality Assessment

For Hampstead Asset Management and Fifth State

1 April 2025

Air Quality CONSULTANTS | PART OF Logika Group

Document Control

Project Title:	14 Blackburn Road, Camden
Project Number:	J10-14082B-10
Client:	Hampstead Asset Management and Fifth State
Principal Contact:	James McDonnell
Document Title:	Air Quality Assessment
Document Number:	J10-14082B-10-04
Prepared By:	Rosie Watts and Julia Burnell
Reviewed By:	Martin Peirce

Revision History

01	14/03/2025	First Issue
02	24/03/2025	Updates in response to client comments
03	01/04/2025	Updates in response to legal comments
04	04/04/2025	Final version for submission

Registered Office: 3rd Floor St Augustine's Court, 1 St. Augustine's Place Bristol BS1 4UD Tel: +44(0)117 974 1086

24 Greville Street, Farringdon, London, EC1N 8SS Tel: +44(0)20 3873 4780

First Floor, Patten House, Moulders Lane, Warrington WA1 2BA Tel: +44(0)1925 937 195

8-9 Ship St, Brighton and Hove, Brighton BN1 1AD Tel: +44(0)20 3873 4780

Avenue du Port, 86c Box 204, 1000 Bruxelles Tel: +44(0)20 3873 47840

Executive Summary

The air quality impacts associated with the proposed mixed-use development of 14 Blackburn Road have been assessed. The development will consist of residential and commercial uses. The site falls within a wider consented masterplan (The O2 Centre, planning reference 2022/0528/P) to provide a mixed-use development which extends to the Finchley Road tube station to the East. 14 Blackburn Road is within Outline Phase 2 of the O2 masterplan, referred to as plot S8.

During the construction works, a range of best practice mitigation measures will be implemented to reduce dust emissions, and the overall effect will be 'not significant'; appropriate measures have been set out in this report, to be included in the Dust Management Plan for the works.

The Proposed Development will be 'car-free' and will have an all-electric energy strategy. The site will also include one small emergency diesel generator for life-safety purposes, however this generator would operate for a limited number of hours per year (for maintenance and testing) and will be designed to ensure adequate dispersion. As such, there will be no significant effect upon local air quality as a result of the operation of the Proposed Development.

Air quality conditions for future residents of the Proposed Development have been shown to be acceptable, with concentrations well below the relevant air quality objectives/targets.

The Proposed Development has also been shown to meet the London Plan's requirement that new developments are at least 'air quality neutral'.

Overall, the construction and operational air quality effects of 14 Blackburn Road are judged to be 'not significant'.

Contents

Tables

Figures

1 Introduction

1.1 This report describes the potential air quality impacts associated with the proposed mixed-use redevelopment of 14 Blackburn Road, Camden, London, NW6 1RZ ('the Site'). The Site falls within a wider consented masterplan (The O2 Centre, planning reference 2022/0528/P) to provide a mixed-use development which extends to the Finchley Road tube station to the east; specifically, 14 Blackburn Road is within Outline Phase 2 of the O2 masterplan, referred to as plot S8.

1.2 The development is described as:

"*Demolition and redevelopment of the Site for a mixed-use development comprising purpose built student accommodation (Sui Generis), affordable housing (Use Class C3), lower ground and ground floor flexible commercial/business space comprising of showrooms, retail and ancillary offices (Use Class E/Sui Generis) and a café/PBSA amenity space (Use Class E/Sui Generis) and associated works including service yard, cycle parking, hard and soft landscaping, amenity spaces and plant*." ('the Proposed Development').

1.3 Specifically, the Proposed Development will comprise of 192 purpose-built student accommodation (PBSA) rooms, 35 affordable C3 self-contained homes and 1,619 m^2 of lower ground and ground floor commercial space. As the Proposed Development will provide 10 or more dwellings/houses, it is therefore classified as a major development (The Town and Country Planning, 2015).

1.4 The Proposed Development lies within a borough-wide Air Quality Management Area (AQMA) declared by the London Borough of Camden (LBC) for exceedances of the annual mean nitrogen dioxide (NO_2) and 24-hour mean PM_{10} objectives. It is also close to two of the Greater London Authority's (GLA's) air quality Focus Areas ('*Swiss Cottage from South Hamstead to Finchley Road Station*' to the northeast and '*Kilburn Town Centre*' to the southwest). These are locations with high levels of human exposure where the annual mean limit value for NO_2 is exceeded. The Proposed Development will introduce new residential exposure into this area of potentially poor air quality; thus, an assessment is required to determine the air quality conditions that future residents will experience. The main air pollutants of concern related to road traffic emissions are NO_2 and fine particulate matter (PM_{10} and $PM_{2.5}$).

1.5 The location and setting of the Proposed Development are shown in Figure 1-1, along with the nearby Focus Areas.

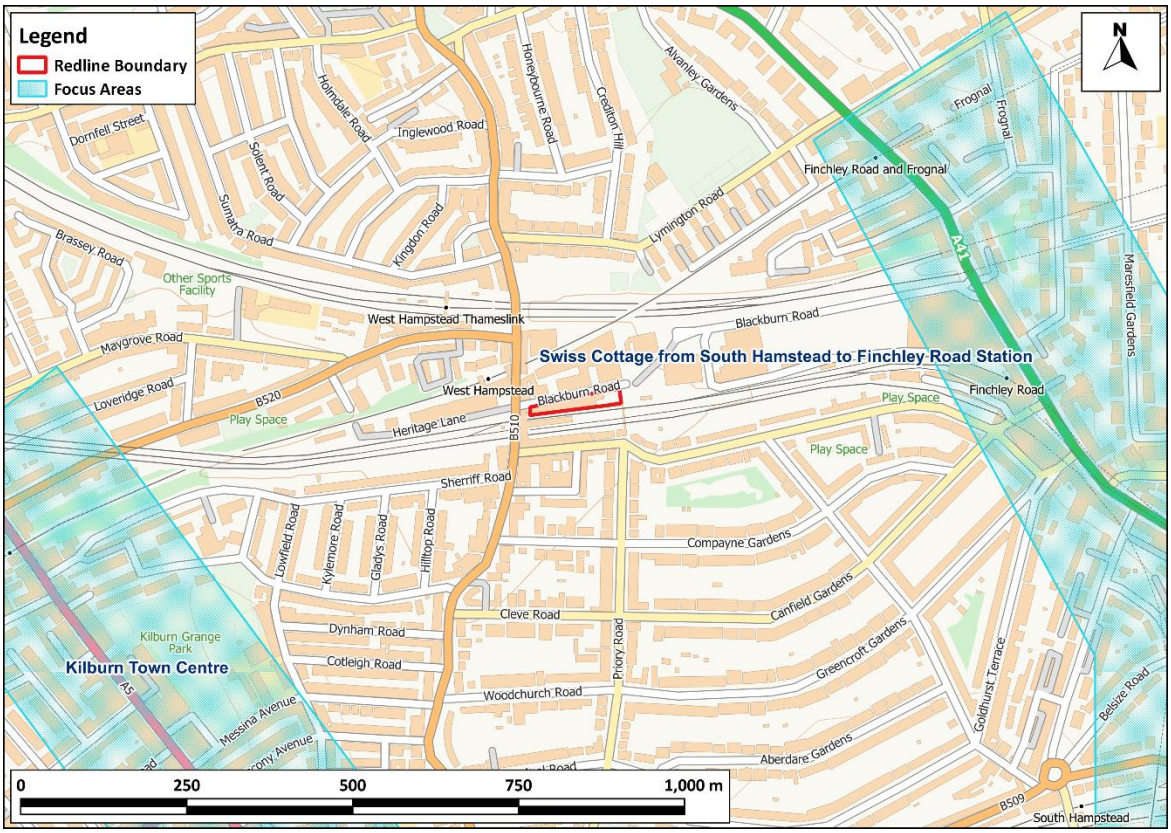

Figure 1-1: Proposed Development Setting in the Context of Air Quality

1.6 The development will be car-free (there will be no on-site parking at the Site beyond two loading bays). The Proposed Development will also employ an all-electric strategy; there will be no on-site combustion plant for the routine provision of energy. However, the Proposed Development will require a life-safety emergency generator; emissions from the routine testing and maintenance may impact on air quality at both existing and proposed residential properties. The main pollutants of concern related to generator emissions are nitrogen dioxide, PM_{10} and $PM_{2.5}$.

1.7 The GLA's London Plan (GLA, 2021) requires new developments to be air quality neutral. The air quality neutrality of the Proposed Development has been assessed following the methodology provided in the GLA's London Plan Guidance (Air Quality Neutral) (GLA, 2023a).

1.8 The GLA has also released Supplementary Planning Guidance (SPG) on the Control of Dust and Emissions from Construction and Demolition (GLA, 2014b). The SPG outlines a risk assessment approach for construction dust assessment and helps determine the mitigation measures that will need to be applied. A construction dust assessment has been undertaken, and the appropriate mitigation set out.

1.9 This report describes existing local air quality conditions and those in the earliest possible year of occupation (2028). The assessment of construction dust impacts focuses on the anticipated duration of the works.

1.10 This report has been prepared taking into account all relevant local and national guidance and regulations, including the LBC Air Quality Camden Planning Guidance (CPG), and follows a methodology agreed with LBC.

2 Policy Context

2.1 All European legislation referred to in this report is written into UK law and remains in place.

Air Quality Strategy 2007

2.2 The Air Quality Strategy (Defra, 2007) published by the Department for Environment, Food, and Rural Affairs (Defra) and Devolved Administrations, provides the policy framework for air quality management and assessment in the UK. It provides air quality standards and objectives for key air pollutants, which are designed to protect human health and the environment. It also sets out how the different sectors: industry, transport and local government, can contribute to achieving the air quality objectives. Local authorities are seen to play a particularly important role. The strategy describes the Local Air Quality Management (LAQM) regime that has been established, whereby every authority has to carry out regular reviews and assessments of air quality in its area to identify whether the objectives have been, or will be, achieved at relevant locations, by the applicable date. If this is not the case, the authority must declare an AQMA and prepare an action plan which identifies appropriate measures that will be introduced in pursuit of the objectives.

Air Quality Strategy 2023

2.3 The Air Quality Strategy: Framework for Local Authority Delivery 2023 (Defra, 2023a) sets out the strategic air quality framework for local authorities and other Air Quality Partners in England. It sets out their powers and responsibilities, and actions the government expects them to take. It does not replace other air quality guidance documents relevant to local authorities.

The Environmental Permitting (England and Wales) (Amendment) Regulations 2018

2.4 The Medium Combustion Plant Directive (MCPD) (The European Parliament and the Council of the European Union, 2015) regulates pollutant emissions from combustion plant with a rated input between 1 and 50 megawatts (MW_{th}) and was transposed into UK law in January 2018 through an amendment to the Environmental Permitting Regulations (2018). The legislation sets emission limits to be applied from December 2018 for new plant and from 2025 or 2030 for existing plant (depending on the rated input). In addition to addressing emissions from plant with a rated input of 1 to 50 MW_{th}, as required by the MCPD, the amendment also introduces emission limits on generator plant, regardless of their rated input. Generators whose sole purpose is maintaining power supply at a site during an on-site emergency, that are operated for the purpose of testing/maintenance for no more than 50 hours per year, will be exempt from the emission limits.

2.5 The Proposed Development includes a 300 kW emergency diesel generator, which is required for life-safety purposes, and will be tested for fewer than 50 hours per year. Therefore, the generator will not require a permit under these regulations

Clean Air Act 1993 & Environmental Protection Act

2.6 Small combustion plant of less than 20 MW net rated thermal input are controlled under the Clean Air Act 1993 (1993). This requires the local authority to approve the chimney height. Plant which are smaller than 366 kW have no such requirement. The local authority's approval will, therefore, not be required for the plant to be installed in the Proposed Development.

2.7 Measures to ensure adequate dispersion of emissions from discharging stacks and vents are included in Technical Guidance Note D1 (Dispersion) (1993), issued in support of the Environmental Protection Act (1990).

Clean Air Strategy 2019

2.8 The Clean Air Strategy (Defra, 2019) sets out a wide range of actions by which the UK Government will seek to reduce pollutant emissions and improve air quality. Actions are targeted at four main sources of emissions: Transport, Domestic, Farming and Industry. At this stage, there is no straightforward way to take account of the expected future benefits to air quality within this assessment.

Reducing Emissions from Road Transport: Road to Zero Strategy

2.9 The Office for Low Emission Vehicles (OLEV) and Department for Transport (DfT) published a Policy Paper (DfT, 2018) in July 2018 outlining how the Government will support the transition to zero tailpipe emission road transport and reduce tailpipe emissions from conventional vehicles during the transition. This paper affirms the Government's pledge to end the sale of new conventional petrol and diesel cars and vans by 2040, and states that the Government expects the majority of new cars and vans sold to be 100% zero tailpipe emission and all new cars and vans to have significant zero tailpipe emission capability by this year, and that by 2050 almost every car and van should have zero tailpipe emissions. It states that the Government wants to see at least 50%, and as many as 70%, of new car sales, and up to 40% of new van sales, being ultra-low emission by 2030.

2.10 The paper sets out a number of measures by which Government will support this transition, but is clear that Government expects this transition to be industry and consumer led. The Government's 'Zero Emission Vehicle' (ZEV) mandate requires that 80% of new cars and 70% of new vans sold in Great Britain must be zero exhaust emission by 2030, increasing to 100% by 2035. If these ambitions are realised then road traffic-related NOx emissions can be expected to reduce significantly over the coming decades, likely beyond the scale of reductions forecast in the tools utilised in carrying out this air quality assessment.

Environment Act 2021

2.11 The UK's new legal framework for protection of the natural environment, the Environment Act (2021) passed into UK law in November 2021. The Act gives the Government the power to set long-term, legally binding environmental targets. It also establishes an Office for Environmental Protection (OEP), responsible for holding the Government to account and ensuring compliance with these targets.

2.12 The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 (SI 2023 No. 96) sets two new targets for future concentrations of $PM_{2.5}$. These targets are described in Paragraph 3.4.

Environmental Improvement Plan 2023

2.13 Defra published its 25 Year Environment Plan in 2018 (Defra, 2018a). The Environment Act (2021) requires Defra to review this Plan at least every five years. The Environmental Improvement Plan 2023 (Defra, 2023b) is the first revision. This outlines the progress made since 2018 and adds detail to the goals defined in the 2018 Plan, including that of achieving clean air.

2.14 The Environmental Improvement Plan 2023 sets out the new air quality targets which have been set for concentrations of $PM_{2.5}$. These targets, which are described in more detail in Paragraph 3.4,

include the long-term targets in the Statutory Instrument described in Paragraph 2.12, and interim targets to be achieved by 2028.

2.15 The 2023 Plan outlines the role of local authorities in helping it meet both its targets and existing commitments. It also outlines the respective roles of industry, agricultural sectors, and the DfT in providing the coordinated action required to meet both its new, and pre-existing targets and commitments.

Planning Policy

National Policies

2.16 The National Planning Policy Framework (NPPF) (2024) sets out planning policy for England. It states that the purpose of the planning system is to contribute to the achievement of sustainable development, and that the planning system has three overarching objectives, one of which (Paragraph 8c) is an environmental objective:

"to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy".

2.17 To prevent unacceptable risks from air pollution, Paragraph 187 of the NPPF states that:

"Planning policies and decisions should contribute to and enhance the natural and local environment by…preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans".

2.18 Paragraph 198 states:

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

2.19 More specifically on air quality, Paragraph 199 makes clear that:

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

2.20 The NPPF is supported by Planning Practice Guidance (PPG) (Ministry of Housing, Communities & Local Government, 2019), which includes guiding principles on how planning can take account of the impacts of new development on air quality. The PPG states that:

"Defra carries out an annual national assessment of air quality using modelling and monitoring to determine compliance with Limit Values. It is important that the potential impact of new

development on air quality is taken into account where the national assessment indicates that relevant limits have been exceeded or are near the limit, or where the need for emissions reductions has been identified".

2.21 Regarding plan-making, the PPG states:

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

2.22 The role of the local authorities through the LAQM regime is covered, with the PPG stating that a local authority Air Quality Action Plan "*identifies measures that will be introduced in pursuit of the objectives and can have implications for planning*". In addition, the PPG makes clear that "*Odour and dust can also be a planning concern, for example, because of the effect on local amenity*".

2.23 Regarding the need for an air quality assessment, the PPG states that:

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

2.24 The PPG sets out the information that may be required in an air quality assessment, making clear that:

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

2.25 The PPG also provides guidance on options for mitigating air quality impacts, as well as examples of the types of measures to be considered. It makes clear that:

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

London-Specific Policies

2.26 The key London-specific policies are summarised below, with more detail provided, where required, in Appendix A1.

The London Plan

2.27 The London Plan (GLA, 2021) sets out an integrated economic, environmental, transport and social framework for the development of London over the next 20-25 years. The key policy relating to air quality is Policy SI 1 on Improving air quality, Part B1 of which sets out three key requirements for developments:

"*Development proposals should not:*

a) lead to further deterioration of existing poor air quality

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

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

2.28 The Policy then details how developments should meet these requirements, stating:

"In order to meet the requirements in Part 1, as a minimum:

a) development proposals must be at least Air Quality Neutral

b) development proposals should use design solutions to prevent or minimise increased exposure to existing air pollution and make provision to address local problems of air quality in preference to post-design or retro-fitted mitigation measures

c) major development proposals must be submitted with an Air Quality Assessment. Air quality assessments should show how the development will meet the requirements of B1

d) *development proposals in Air Quality Focus Areas or that are likely to be used by large numbers of people particularly vulnerable to poor air quality, such as children or older people should demonstrate that design measures have been used to minimise exposure*".

2.29 Part C of the Policy introduces the concept of Air Quality Positive for large-scale development, stating:

"Masterplans and development briefs for large-scale development proposals subject to an Environmental Impact Assessment should consider how local air quality can be improved across the area of the proposal as part of an air quality positive approach. To achieve this a statement should be submitted demonstrating:

1) how proposals have considered ways to maximise benefits to local air quality, and

2) what measures or design features will be put in place to reduce exposure to pollution, and how they will achieve this."

2.30 The Proposed Development is not large-scale development subject to an Environmental Impact Assessment, thus an Air Quality Positive statement is not required. However, an Air Quality Positive statement was prepared for the wider consented masterplan.

2.31 Regarding construction and demolition impacts, Part D of Policy SI 1 of the London Plan states:

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

2.32 Part E of Policy SI 1 states the following regarding mitigation and offsetting of emissions:

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

2.33 The explanatory text around Policy SI 1 of the London Plan states the following with regard to assessment criteria:

"The Mayor is committed to making air quality in London the best of any major world city, which means not only achieving compliance with legal limits for Nitrogen Dioxide as soon as possible and

maintaining compliance where it is already achieved, but also achieving World Health Organisation targets for other pollutants such as Particulate Matter.

The aim of this policy is to ensure that new developments are designed and built, as far as is possible, to improve local air quality and reduce the extent to which the public are exposed to poor air quality. This means that new developments, as a minimum, must not cause new exceedances of legal air quality standards, or delay the date at which compliance will be achieved in areas that are currently in exceedance of legal limits. Where limit values are already met, or are predicted to be met at the time of completion, new developments must endeavour to maintain the best ambient air quality compatible with sustainable development principles.

Where this policy refers to 'existing poor air quality' this should be taken to include areas where legal limits for any pollutant, or World Health Organisation targets for Particulate Matter, are already exceeded and areas where current pollution levels are within 5 per cent of these limits"[1].

2.34 The London Plan includes a number of other relevant policies, which are detailed in Appendix A1.

London Environment Strategy

2.35 The London Environment Strategy was published in May 2018 (GLA, 2018a). The strategy considers air quality in Chapter 4; the Mayor's main objective is to create a "*zero emission London by 2050*". Policy 4.2.1 aims to "*reduce emissions from London's road transport network by phasing out fossil fuelled vehicles, prioritising action on diesel, and enabling Londoners to switch to more sustainable forms of transport*". The strategy sets a target to achieve, by 2030, the guideline value for $PM_{2.5}$ which was set by the World Health Organisation (WHO) in 2005. An implementation plan for the strategy has also been published which set out what the Mayor would do between 2018 and 2023 to help achieve the ambitions in the strategy.

Mayor's Transport Strategy

2.36 The Mayor's Transport Strategy (GLA, 2018b) sets out the Mayor's policies and proposals to reshape transport in London over the next two decades. The Strategy focuses on reducing car dependency and increasing active sustainable travel, with the aim of improving air quality and creating healthier streets. It notes that development proposals should "*be designed so that walking and cycling are the most appealing choices for getting around locally*".

GLA SPG: The Control of Dust and Emissions During Construction and Demolition

2.37 The GLA's SPG on The Control of Dust and Emissions During Construction and Demolition (GLA, 2014b) outlines a risk assessment based approach to considering the potential for dust generation from a construction site, and sets out what mitigation measures should be implemented to minimise the risk of construction dust impacts, dependent on the outcomes of the risk assessment. This guidance is largely based on the Institute of Air Quality Management's (IAQM[2]'s) guidance (IAQM, 2024), and it states that "*the latest version of the IAQM Guidance should be used*".

GLA LPG: Air Quality Neutral

2.38 The GLA's Air Quality Neutral LPG outlines the assessment approach for determining whether a development is Air Quality Neutral (GLA, 2023a). The guidance sets out benchmarks for the maximum allowable emissions of NOx and particulate matter based on the size and use class of a development.

[1] The London Plan was developed based on a World Health Organisation guideline for $PM_{2.5}$ of 10 $\mu g/m^3$ (see Paragraph 2.35).
[2] The IAQM is the professional body for air quality practitioners in the UK

To determine whether a development is Air Quality Neutral, the building and transport emissions from the development are compared to these benchmarks.

Air Quality Focus Areas

2.39 The GLA has identified 160 air quality Focus Areas in London. These are locations that not only exceed the annual mean limit value for NO_2 but also have high levels of human exposure. They do not represent an exhaustive list of London's air quality hotspot locations, but locations where the GLA believes the problem to be most acute. They are also areas where the GLA considers there to be the most potential for air quality improvements and are, therefore, where the GLA and Transport for London (TfL) will focus actions to improve air quality. The Proposed Development is located close to two air quality Focus Areas (as discussed in Section 1).

Local Policies

Camden Local Plan

2.40 The Camden Local Plan (London Borough of Camden, 2017) was adopted on 3rd July 2017 and sets out the Council's planning policies, covering the period from 2016-2031.

2.41 Policy A1 on '*Managing the impact of development*' states that: "*The Council will seek to protect the quality of life of occupiers and neighbours. We will grant permission for development unless this causes unacceptable harm to amenity.*" This policy sets out that it will:

"*a. seek to ensure that the amenity of communities, occupiers and neighbours is protected […]*

c. resist development that fails to adequately assess and address transport impacts affecting communities, occupiers, neighbours and the existing transport network;

d. require mitigation measures where necessary. The factors we will be consider include[…]

i. impacts of the construction phase, including the use of Construction Management Plans[…]

k. odour, fumes and dust […]"

2.42 Additionally, Policy CC4 'Air Quality' states that:

"*The Council will ensure that the impact of development on air quality is mitigated and ensure that exposure to poor air quality is reduced in the borough.*

The Council will take into account the impact of air quality when assessing development proposals, through the consideration of both the exposure of occupants to air pollution and the effect of the development on air quality. Consideration must be taken to the actions identified in the Council's Air Quality Action Plan.

Air Quality Assessments (AQAs) are required where development is likely to expose residents to high levels of air pollution. Where the AQA shows that a development would cause harm to air quality, the Council will not grant planning permission unless measures are adopted to mitigate the impact. Similarly, developments that introduce sensitive receptors (i.e. housing, schools) in locations of poor air quality will not be acceptable unless designed to mitigate the impact.

Development that involves significant demolition, construction or earthworks will also be required to assess the risk of dust and emissions impacts in an AQA and include appropriate mitigation measures to be secured in a Construction Management Plan."

2.43 In support of Policy CC4, the Local Plan also includes Policy T2 which requires "*all new developments in the borough to be car-free*".

2.44 Policy D1 Design has implications to air quality as well, stating that:

"*The Council will seek to secure high quality design in development. The Council will require that development […]*

c. is sustainable in design and construction, incorporating best practice in resource management and climate change mitigation and adaptation;[…]

h. promotes health;[…]

The Council will resist development of poor design that fails to take the opportunities available for improving the character and quality of an area and the way it functions…"

2.45 The plan elaborates that design can impact on air quality and health:

"*The way an area is designed and managed can have a significant impact on people's quality of life, health and wellbeing. Planning has a key role in promoting good physical and mental health by creating streets, spaces and buildings which allow and encourage healthy lifestyles. Architecture and urban design can affect human health through […] air quality [...]. The Council will require applicants to consider how development will contribute to improving health*."

2.46 LBC has also recently commenced consultation on a new Draft Local Plan (Regulation 18) (LB Camden, 2024a). Policy A3 (Air Quality) outlines a number of requirements for new developments including for all developments to be at least air quality neutral, to use design solutions to reduce exposure to existing poor air quality and to consider emergency backup power for development sites early in the design process.

Camden Planning Guidance

2.47 LBC has published a set of Camden Planning Guidance (CPGs) to support the current Camden Local Plan. The Council has published a CPG on Air Quality (London Borough of Camden, 2021), which forms an SPG. This was adopted on 15 January 2021. The document outlines when an air quality assessment should be undertaken and includes guidance on the scope of such assessments. It also states that:

- "*All developments are to protect future occupants from exposure to poor air quality; and*
- *All developments are to limit their impact on local air quality and be at least air quality neutral.*"

2.48 The CPG describes air quality in the borough and measures to minimise emissions. The CPG references the 2005 WHO guidelines for NO_2, PM_{10}, and $PM_{2.5}$ of 40 µg/m^3, 20 µg/m^3 and 10 µg/m^3 respectively which Camden aims to achieve by 2030. The CPG also states that "*for the determination of planning applications and appraisal of Construction Management Plans, consideration must be paid to uncertainty in NO_2 data, therefore 38 µg/m^3 (the 40 µg/m^3 WHO limit less 5%) shall be taken as the limit for this pollutant.*"

Building Standards

2.49 Part F(1) of Schedule 1 of the Building Regulations 2010 as amended June 2022 (Ministry of Housing, Communities & Local Government, 2022) places a duty on building owners, or those responsible for relevant building work[3], to ensure adequate ventilation is provided to building occupants.

2.50 Approved Document F (HM Government, 2021a), which accompanies the Building Regulations, explains that care should be taken to minimise entry of external air pollutants. Specific steps should be taken to manage ventilation intakes where the building is near to a significant source of emissions, or if local ambient concentrations exceed values set in the Air Quality Standards Regulations 2010 (see Paragraph 3.10, later). These steps include maximising the distance between emission source and air intake, considering likely dispersion patterns, and considering the timing of pollution releases when designing the ventilation system.

2.51 Part S(1) of Schedule 1, and Regulation 44D, of the Building Regulations 2010 (Ministry of Housing, Communities & Local Government, 2022) define a requirement for the provision of infrastructure for charging electric vehicles. Precise requirements are explained further within Approved Document S (HM Government, 2021b) and depend on the overall number of parking spaces provided and the average financial cost of installation.

2.52 Compliance with the Building Regulations is not required for planning approval, but the Regulations will be complied with in the completed development.

Air Quality Action Plans

National Air Quality Plan

2.53 Defra has produced an Air Quality Plan to tackle roadside NO_2 concentrations in the UK (Defra, 2017); a supplement to the 2017 Plan (Defra, 2018b) was published in October 2018 and sets out the steps Government is taking in relation to a further 33 local authorities where shorter-term exceedances of the limit value were identified. Alongside a package of national measures, the 2017 Plan and the 2018 Supplement require those identified English Local Authorities (or the GLA in the case of London Authorities) to produce local action plans and/or feasibility studies. These plans and feasibility studies must have regard to measures to achieve the statutory limit values within the shortest possible time, which may include the implementation of a Clean Air Zone (CAZ). There is currently no straightforward way to take account of the effects of the 2017 Plan or 2018 Supplement this assessment; however, consideration has been given to whether there is currently, or is likely to be in the future, a limit value exceedance in the vicinity of the Proposed Development. This assessment has principally been carried out in relation to the air quality objectives, rather than the limit values that are the focus of the Air Quality Plan.

Local Air Quality Action Plan

2.54 LBC'S combined Clean Air Strategy and Clean Air Action Plan (CAAP) (London Borough of Camden, 2022) sets out the strategic objectives for improving air quality in the borough between 2019 and 2034 and the actions that will be undertaken between 2023 and 2026 to support the strategic objectives.

2.55 One of the Clean Air Strategy's key commitments is "*achieving the most stringent evidence-based air quality targets available, in as short a timeframe as possible. Currently, these are the World Health Organization's (WHO) air quality guidelines, published in 2021*" of 10 µg/m^3 for NO_2 by 2034, 15 µg/m^3 for PM_{10} by 2030 and 5 µg/m^3 for $PM_{2.5}$ by 2034. These are more stringent than those published in the

[3] Building work is a legal term for work covered by the Building Regulations. With limited exemptions, the Regulations apply to all significant building work, including erecting or extending a building.

Air Quality CPG (see paragraph 2.48), which are based on the 2005 WHO guidelines and which are recommended for use "*for the determination of planning applications and appraisal of Construction Management Plans*" (London Borough of Camden, 2021).

2.56 The CAAP contains 36 'Clean Air Outcomes' to help improve air quality and protect health in Camden. The Plan sets out seven themes, around which a number of actions have been developed in order to improve local air quality:

- reducing construction emissions;
- reducing building emissions;
- reducing transport emissions;
- supporting communities and schools;
- indirect emissions and lobbying;
- public health and awareness; and
- indoor air quality and occupational exposure.

3 Assessment Criteria

UK Criteria

3.1 The Government has established a set of air quality standards and objectives to protect human health. The 'standards' are based on assessment of the effects of each pollutant on human health, including the effects on sensitive sub-groups. The 'objectives' set out the extent to which the Government expects the standards to be achieved taking account of practical considerations. The objectives for use by local authorities are prescribed within the Air Quality (England) Regulations (2000) and the Air Quality (England) (Amendment) Regulations (2002).

3.2 The UK-wide objectives for NO_2 and PM_{10} were to have been achieved by 2005 and 2004 respectively and continue to apply in all future years thereafter. Measurements across the UK have shown that the 1-hour mean NO_2 objective is unlikely to be exceeded at roadside locations where the annual mean concentration is below 60 µg/m^3 (Defra, 2022). Therefore, 1-hour NO_2 concentrations will only be considered if the annual mean concentration is above this level. Measurements have also shown that the 24-hour mean PM_{10} objective could be exceeded at roadside locations where the annual mean concentration is above 32 µg/m^3 (Defra, 2022).

3.3 The objectives apply at locations where members of the public are likely to be regularly present and are likely to be exposed over the averaging period of the objective. The GLA explains where these objectives will apply in London (GLA, 2019). The annual mean objectives for NO_2 and PM_{10} are considered to apply at the façades of residential properties, schools, hospitals and care homes etc., the gardens of residential properties, school playgrounds and the grounds of hospitals and care homes. The 24-hour mean objective for PM_{10} is considered to apply at the same locations as the annual mean objective, as well as at hotels. The 1-hour mean objective for NO_2 applies wherever members of the public might regularly spend 1-hour or more, including outdoor eating locations and pavements of busy shopping streets.

3.4 For $PM_{2.5}$, the objective set by Defra for local authorities is to work toward reducing concentrations without setting any specific numerical value. In the absence of a numerical objective, it is convention to assess local air quality impacts against the limit value (see Paragraph 3.10), originally set at 25 µg/m^3 and currently set at 20 µg/m^3.

3.5 Defra has also set two new targets, and two new interim targets, for $PM_{2.5}$ concentrations in England. One set of targets focuses on absolute concentrations. The long-term target is to achieve an annual mean $PM_{2.5}$ concentration of 10 µg/m^3 by the end of 2040 (referred to as the annual mean concentration target or AMCT), with the interim target being a value of 12 µg/m^3 by the start of 2028[4]. The second set of targets relate to reducing overall population exposure to $PM_{2.5}$. By the end of 2040, overall population exposure to $PM_{2.5}$ should be reduced by 35% compared with 2018 levels (referred to as the population exposure reduction target or PERT), with the interim target being a reduction of 22% by the start of 2028 (Table 3-1).

[4] Meaning that it will be assessed using measurements from 2027. The 2040 target will be assessed using measurements from 2040. National targets are assessed against concentrations expressed to the nearest whole number, for example a concentration of 10.4 µg/m^3 would not exceed the 10 µg/m^3 target.

Table 3-1: Environment Act $PM_{2.5}$ Targets

Metric	Target	Target year
AMCT	Interim target: 12 µg/m^3	2028
	Legally binding target: 10 µg/m^3	2040
PERT	Interim target: 22% reduction in exposure compared to 2018	2028
	Legally binding target: 35% reduction in exposure compared to 2018	2040

3.6 In 2024 Defra published Interim Planning Guidance on the $PM_{2.5}$ targets (Defra, 2024). This states that:

"The purpose of the targets is to improve air quality by reducing levels of $PM_{2.5}$ across the country, therefore improving public health. While achievement of the targets will be assessed at relevant monitoring sites, the targets apply to ambient (outdoor) air throughout England. Applicants and Local Planning Authorities should therefore consider the impact of developments on air quality in all ambient air, whether a monitor is present or not."

3.7 In order to address the new targets it is not sufficient to assess solely whether a scheme is likely to lead to an exceedance of a legal limit. Instead, developments need to implement appropriate mitigation measures from the design stage, ensuring the minimum amount of pollution is emitted and that exposure is minimised.

3.8 Pending publication of the new guidance, Defra advises applicants to provide evidence that they have identified key sources of air pollution within the scheme and taken appropriate action to minimise emissions of $PM_{2.5}$ and its precursors as far as possible. More detailed assessment is expected for development closer to populations and/or having higher emissions. Defra has posed two questions to be used as prompts to support the interim assessment process:

"How has exposure to $PM_{2.5}$ been considered when selecting the development site?; and

What actions and/or mitigations have been considered to reduce $PM_{2.5}$ exposure for development users and nearby receptors (houses, hospitals, schools etc.) and to reduce emissions of $PM_{2.5}$ and its precursors?"

3.9 As explained in Paragraph 2.35, the GLA has set a target to achieve an annual mean $PM_{2.5}$ concentration of 10 µg/m^3 by 2030. This target was derived from an air quality guideline set by WHO in 2005. In 2021, WHO updated its guidelines, but the London Environment Strategy (GLA, 2018a) considers the 2005 guideline of 10 µg/m^3. While there is no explicit requirement to assess against the GLA target of 10 µg/m^3, it has nevertheless been included within this assessment.

3.10 EU Directive 2008/50/EC (The European Parliament and the Council of the European Union, 2008) sets limit values for NO_2, PM_{10} and $PM_{2.5}$, and is implemented in UK law through the Air Quality Standards Regulations (2010)[5]. The limit values for NO_2 and PM_{10} are the same numerical concentrations as the UK objectives, but achievement of the limit values is a national obligation rather than a local one and concentrations are reported to the nearest whole number. In the UK, only monitoring and modelling carried out by UK Central Government meets the specification required to assess compliance with the limit values. Central Government does not normally recognise local authority monitoring or local

[5] As amended through The Air Quality Standards (Amendment) Regulations 2016 and The Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020.

modelling studies when determining the likelihood of the limit values being exceeded, unless such studies have been audited and approved by Defra and DfT's Joint Air Quality Unit (JAQU).

3.11 The relevant air quality criteria for this assessment are provided in Table 3-2.

Table 3-2: Air Quality Criteria for NO_2, PM_{10} and $PM_{2.5}$

Pollutant	Time Period	Value
NO_2	1-hour Mean	200 µg/m³ not to be exceeded more than 18 times a year
	Annual Mean	40 µg/m³
PM_{10}	24-hour Mean	50 µg/m³ not to be exceeded more than 35 times a year
	Annual Mean	40 µg/m³ [a]
$PM_{2.5}$	Annual Mean	20 µg/m³ [b]
	Annual Mean	10 µg/m³ by 2030

[a] A proxy value of 32 µg/m³ as an annual mean is used in this assessment to assess the likelihood of the 24-hour mean PM_{10} objective being exceeded. Measurements have shown that, above this concentration, exceedances of the 24-hour mean PM_{10} objective are possible (Defra, 2022).

[b] There is no numerical $PM_{2.5}$ objective for local authorities (see Paragraph 3.4). Convention is to assess against the UK limit value which is currently 20 µg/m³.

Camden Criteria

3.12 LBC has committed within the Air Quality CPG and CAAP to meeting the WHO guideline limits for NO_2, PM_{10} and $PM_{2.5}$, as discussed in paragraphs 2.48 to 2.55. However, the two documents quote different WHO limits; the CPG refers to the 2005 WHO limits (World Health Organization, 2006)to be met in 2030 while the CAAP refers to the current (2021) WHO limits (World Health Organization, 2021)to be met in 2034.

3.13 The commitment to meet the new WHO guidelines in the CAAP is described within the context of the Council's local air quality management; the CAAP states that "*We will not consider that we have achieved the WHO guideline objectives until every monitoring location at which the pollutants are measured records annual mean concentrations which meet the relevant standards*". The purpose of the CAAP is to help fulfil their requirements under the LAQM regime, rather than development control. The CAAP does not reference the WHO guidelines for planning, nor does the CAAP include any measures with respect to updating the Air Quality CPG to account for the latest WHO guidelines.

3.14 For the purpose of this assessment, the WHO guidelines outlined in the Air Quality CPG have been used as these relate to planning and are the guidelines quoted in the LB of Camden Air Quality Proforma to be submitted to accompany planning applications (LB of Camden, 2023a). These guidelines are presented in Table 3-3 below. The target years for achievement as outlined in the Camden CAAP have also been provided.

Table 3-3: Camden Air Quality CPG Criteria for NO_2, PM_{10} and $PM_{2.5}$

Pollutant	Guideline target (as an annual mean)	Target achievement year
NO_2	38 µg/m^3 [a]	-[b]
PM_{10}	20 µg/m^3	2026
$PM_{2.5}$	10 µg/m^3	2030

[a] While the WHO guideline is 40 µg/m^3, 38 µg/m^3 has been used in accordance with the Air Quality CPG which states that "*consideration must be paid to uncertainty in NO_2 data, therefore 38 (the 40µg/m^3 WHO limit less 5%) shall be taken as the limit for this pollutant*."

[b] No achievement target timeframe for NO_2 as a target of 38 µg/m^3 should have already been met.

Construction Dust Criteria

3.15 There are no formal assessment criteria for dust. In the absence of formal criteria, the approach developed by the IAQM (2024) has been used (the GLA's SPG (GLA, 2014b) recommends that the assessment be based on the latest version of the IAQM guidance). Full details of this approach are provided in Appendix A2.

Screening Criteria

Road Traffic Assessments

3.16 Environmental Protection UK (EPUK) and the IAQM recommend a two-stage screening approach (Moorcroft and Barrowcliffe et al, 2017) to determine whether emissions from road traffic generated by a development have the potential for significant air quality impacts. The approach, as described in Appendix A3, first considers the size and parking provision of a development; if the development is residential and is for fewer than ten homes or covers less than 0.5 ha, or is non-residential and will provide less than 1,000 m^2 of floor space or cover a site area of less than 1 ha, and will provide ten or fewer parking spaces, then there is no need to progress to a detailed assessment.

3.17 The second stage then compares the changes in vehicle flows on local roads that a development will lead to against specified screening criteria. The screening thresholds (described in full in Appendix A3) inside an AQMA are a change in flows of more than 25 Heavy Duty Vehicles (HDVs) or 100 Light Duty Vehicles (LDVs) per day; outside of an AQMA the thresholds are 100 HDVs or 500 LDVs. Where these criteria are exceeded, a detailed assessment is likely to be required, although the guidance advises that "*the criteria provided are precautionary and should be treated as indicative*", and "*it may be appropriate to amend them on the basis of professional judgement*".

Point Source Assessments

3.18 EPUK and the IAQM have developed an approach (Moorcroft and Barrowcliffe et al, 2017) to determine whether emissions from point sources, such as energy plant, have the potential for significant air quality impacts. The first step of the approach, as described in Appendix A3 is to screen the emissions and the emissions parameters to determine whether an assessment is necessary:

"Typically, any combustion plant where the single or combined NOx emission rate is less than 5 mg/sec is unlikely to give rise to impacts, provided that the emissions are released from a vent or stack in a location and at a height that provides adequate dispersion.

In situations where the emissions are released close to buildings with relevant receptors, or where the dispersion of the plume may be adversely affected by the size and/or height of adjacent buildings (including situations where the stack height is lower than the receptor) then consideration will need to be given to potential impacts at much lower emission rates.

Conversely, where existing nitrogen dioxide concentrations are low, and where the dispersion conditions are favourable, a much higher emission rate may be acceptable".

3.19 This screening approach requires professional judgement, and the experience of the consultants preparing the assessment is set out in Appendix A4.

4 Assessment Approach

Consultation

4.1 The assessment follows a methodology agreed with LBC via email correspondence between Ben Spode (Air Quality Officer (Planning) at LBC) and Julia Burnell (Air Quality Consultants) on 31 January 2025. Specifically, it was agreed that, as the Site will introduce sensitive receptors but is not in an area of poor air quality or will create new air quality impacts, a basic air quality assessment would be undertaken which would include:

- a construction dust risk assessment;
- an air quality neutral assessment; and
- a qualitative assessment of the impact of the Proposed Development on the local area and the impacts of existing sources on future residents and users of the Proposed Development.

4.2 It was also requested that an alternative backup power supply option to a diesel generator is considered and confirmation provided of the services that will need to be supported by the backup power supply. If an alternative power supply is not viable, it was requested that the sizing of the generator is justified. This is addressed in Section 7.

Existing Conditions

4.3 Existing sources of emissions and baseline air quality conditions within the study area have been defined using a number of approaches:

- industrial and waste management sources that may affect the area have been identified using Defra's Pollutant Release and Transfer Register (Defra, 2025a);
- information on existing air quality has been obtained by collating the results of monitoring carried out by the local authority and through examination of the London Atmospheric Emissions Inventory (LAEI) database produced by the GLA (GLA, 2023b). These predicted concentrations cover the whole of the GLA area at 20 m grid resolution;
- background concentrations have been defined using Defra's 2021-based background maps (Defra, 2025b). These cover the whole of the UK on a 1x1 km grid. The background annual mean NO_2 maps have been calibrated against concurrent measurements[6]. The calibration factor has been applied to all years; and
- whether or not there are any exceedances of the annual mean limit value for NO_2 in the study area has been identified Defra's Compliance data (2025c).

Construction Impacts

4.4 The construction dust assessment considers the potential for impacts within 250 m of the Site boundary, or within 50 m of roads used by construction vehicles. The assessment methodology follows the GLA's SPG on the Control of Dust and Emissions During Construction and Demolition (GLA, 2014b), which is based on that provided by IAQM (2024). This follows a sequence of steps:

[6] https://www.aqconsultants.co.uk/resources

- Step 1 is a basic screening stage, to determine whether the more detailed assessment provided in Step 2 is required:
    - Step 2a determines the potential for dust to be raised from on-site works and by vehicles leaving the Site.
    - Step 2b defines the sensitivity of the area to any dust that may be raised.
    - Step 2c combines the information from Steps 2a and 2b to determine the risk of dust impacts without appropriate mitigation.
- Step 3 uses this information to determine the appropriate level of mitigation required to ensure that there should be no significant impacts.

4.5 Appendix A2 explains the approach in more detail.

Road Traffic Impacts

4.6 The first step in considering the road traffic impacts of the Proposed Development has been to screen the development and its traffic generation against the criteria set out in the EPUK/IAQM guidance (Moorcroft and Barrowcliffe et al, 2017), as described in Paragraph 3.16 and detailed further in Appendix A3. Where impacts can be screened out there is no need to progress to a more detailed assessment.

Impacts of Road Traffic on Future Residents of the Proposed Development

4.7 The impacts of NO_2, PM_{10} and $PM_{2.5}$ concentrations on new residents of the development have been assessed qualitatively, taking account of local air quality monitoring data, proximity to local roads, and the GLA's LAEI predicted concentrations.

4.8 The assessment examines air quality conditions in 2028 and assumes these are representative of air quality conditions at the time the development is occupied; this assumption is considered to be worst-case as it is generally expected that NO_2, PM_{10} and $PM_{2.5}$ concentrations will decline in future years.

Impacts of the Proposed Emergency Plant

4.9 The Proposed Development includes a 300 kW life-safety generator which will be located centrally on the roof of the PBSA and C3 blocks.

4.10 The first step in considering the energy plant impacts has been to screen the pollutant emissions against the criteria set out in the EPUK/IAQM guidance (Moorcroft and Barrowcliffe et al, 2017), as described in Paragraphs 3.18 and 3.19. Where impacts can be screened out there is no need to progress to a more detailed assessment.

Assessment of Significance

Construction Dust Significance

4.11 Guidance from IAQM (2024) is that, with appropriate mitigation in place, the effects of construction dust will be 'not significant'. This is the latest version of the guidance upon which the assessment methodology set out in the GLA guidance (GLA, 2014b) is based (the GLA guidance advises that the latest version of the IAQM guidance should always be used). The assessment thus focuses on

determining the appropriate level of mitigation so as to ensure that effects will normally be 'not significant'.

Operational Significance

4.12 There is no official guidance in the UK in relation to development control on how to assess the significance of air quality impacts. The approach developed jointly by EPUK and the IAQM (Moorcroft and Barrowcliffe et al, 2017) has therefore been used. The overall significance of the air quality impacts is determined using professional judgement; the experience of the consultants preparing the report is set out in Appendix A4. Full details of the EPUK/IAQM approach are provided in Appendix A3.

'Air Quality Neutral'

4.13 The GLA's London Plan Guidance (Air Quality Neutral) (GLA, 2023a) sets out guidance on how an 'air quality neutral' assessment should be undertaken. It also provides a methodology for calculating an offsetting payment if a development is not 'air quality neutral' and it is not possible to identify or agree appropriate and adequate mitigation.

4.14 The GLA guidance provides a simplified assessment approach for major developments which are car-free and have no on-site combustion, which has been followed in this report.

5 Baseline Conditions

Relevant Features

5.1 The Site is located in West Hampstead, approximately 20 m northeast of West Hampstead station and west of the allocated redevelopment site of the O2 Centre and car park. It is located to the rear of properties fronting onto West End Lane in West Hampstead and extends east/west along Blackburn Road. The Site is bounded by Blackburn Road to the north and a section of the Jubilee and Metropolitan London Underground railway line to the south. This is an electrified railway line and therefore is not a significant source of emissions of air pollutants. The Site is currently occupied by a builders' merchants.

5.2 The surrounding area is built-up, with existing residential blocks to the north and south (beyond Blackburn Road and the railway line). The Proposed Development is located within a borough-wide AQMA and close to an air quality Focus Area, as highlighted in Figure 1-1.

Industrial Sources

5.3 No significant industrial sources have been identified that are likely to affect the Proposed Development, in terms of air quality.

Local Air Quality Monitoring

5.4 LBC operates a number of automatic monitoring stations within its area, one of which (CD1) is located 1 km from the Proposed Development within the Swiss Cottage Focus Area, at a kerbside location on the A41 Finchley Road. The Council also operates a number of NO_2 monitoring sites using diffusion tubes prepared and analysed by Socotec (using the 50% TEA in acetone method). These include three deployed within 500 m of the Site, west of West Hampstead station. Annual mean results for the automatic and diffusion tube sites closest to the Proposed Development for the years 2018 to 2023 are summarised in Table 5-1, while results relating to the 1-hour mean objective are summarised in Table 5-2. The monitoring locations are shown in Figure 5-1. The monitoring data have been taken from LBC's 2024 Annual Status Report (London Borough of Camden, 2024).

5.5 While 2020 and 2021 results have been presented in this Section for completeness, they are not relied upon in any way as they will not be representative of 'typical' air quality conditions due to the considerable impact of the Covid-19 pandemic on traffic volumes and thus pollutant concentrations.

Table 5-1: Summary of Annual Mean NO_2 Monitoring (2018-2023) (µg/m³) [a]

Site No.	Site Type	Location	2018	2019	2020[c]	2021[c]	2022	2023
CD1	Kerbside	Swiss Cottage (Finchley Road)	**54**	**43**	33	**44**	37	33
CAM24	Roadside	Kingsgate Lower school - Liddell Road	-[b]	-[b]	-[b]	19.6	19.3	19.2
CAM25	Roadside	Kingsgate Lower school - Iverson Road	-[b]	-[b]	-[b]	24.2	24.6	24.6
CAM26	Roadside	Kingsgate Lower school - Ariel Road	-[b]	-[b]	-[b]	29.9	21.3	24.2
Objective / CPG Criterion			40 / 38					

[a] Exceedances of the objectives are shown in bold.

[b] No data for diffusion tubes where the sites were installed in 2021.

[c] There will have been a considerable impact of the Covid-19 pandemic on traffic volumes and thus pollutant concentrations in this year and therefore concentrations are not representative of 'typical' air quality conditions.

Table 5-2: Number of Hours With NO_2 Concentrations Above 200 µg/m³

Site No.	Site Type	Location	2018	2019	2020[a]	2021[a]	2022	2023
CD1	Kerbside	Swiss Cottage (Finchley Road)	2	1	0	2	0	0
Objective			18					

[a] There will have been a considerable impact of the Covid-19 pandemic on traffic volumes and thus pollutant concentrations in this year and therefore concentrations are not representative of 'typical' air quality conditions.

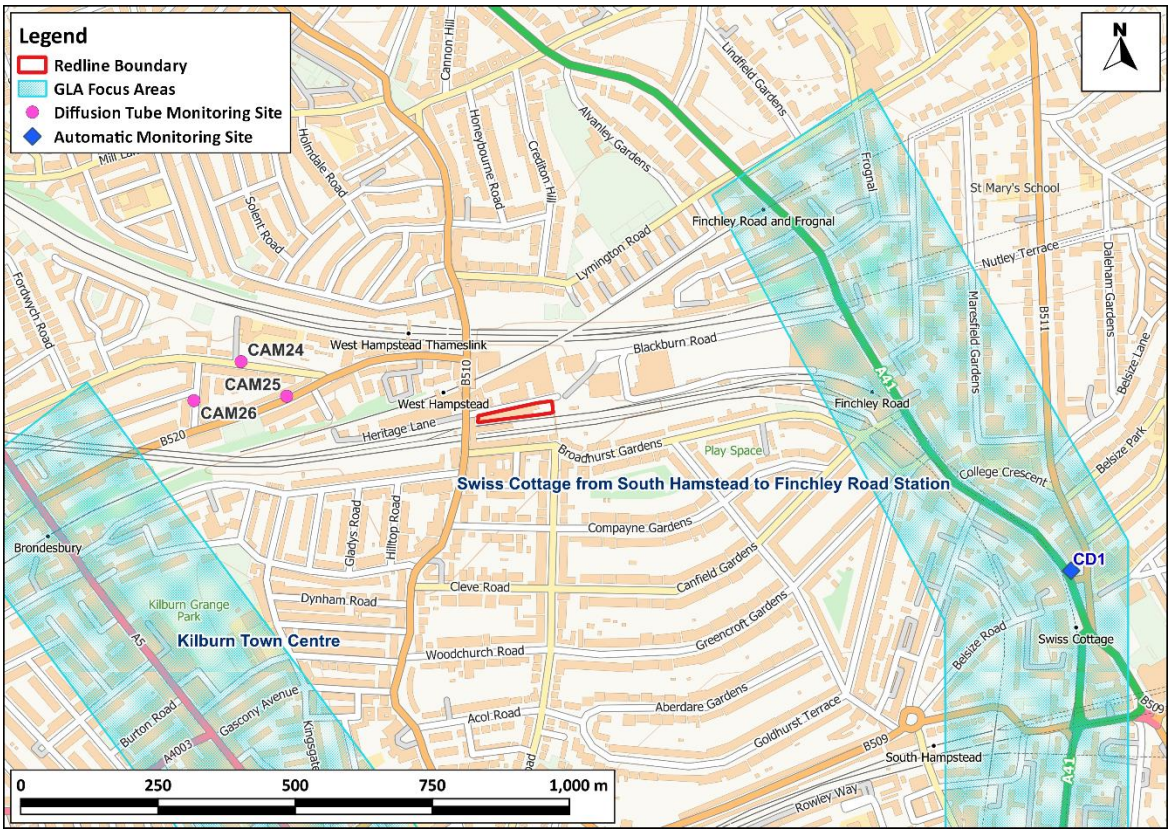

Figure 5-1: Monitoring Locations

5.6 Measured annual mean NO_2 concentrations at the diffusion tubes close to the Proposed Development were well below the national objective and the Air Quality CPG criteria in all years. The automatic monitor (CD1) measured higher concentrations, but there has been a downward trend since 2018 and, since 2022, annual mean NO_2 concentrations were also below the national objective and Air Quality CPG criterion. It should be noted that CD1 is located adjacent to a busy A road within

a Focus Area and therefore will experience greater pollutant concentrations than the Site; the diffusion tube monitoring sites are considered more representative of conditions at the Proposed Development. Nonetheless, the CD1 monitor did not record any exceedances of the short term objective, as demonstrated in Table 5-2. Furthermore, at all monitoring sites, concentrations were less than 60 µg/m^3, indicating it is unlikely there would have been exceedances of the 1-hour mean objective at these locations.

5.7 The CD1 monitor also measures PM_{10} and $PM_{2.5}$ concentrations. Annual mean results for the years 2018 to 2023 are summarised in Table 5-3, while results relating to the daily mean objective are summarised in Table 5-4. The measured annual PM_{10} and $PM_{2.5}$ concentrations were well below both the respective objectives and Air Quality CPG criteria in all years since 2019. The most recent measured annual $PM_{2.5}$ concentrations are also below the GLA target.

Table 5-3: Summary of Annual Mean PM_{10} and $PM_{2.5}$ Monitoring (2018-2023) (µg/m^3)

Site No.	Site Type	Location	2018	2019	2020[c]	2021[c]	2022	2023
PM_{10}								
CD1	Kerbside	Swiss Cottage (Finchley Road)	21	19	16	16	21	18
Objective / CPG Criterion			40 / 20					
$PM_{2.5}$								
CD1	Kerbside	Swiss Cottage (Finchley Road)	11	11	10	9	12	10
Objective / CPG Criterion / GLA target / AMCT [a]			20 / 10 / 10 / 10 [b]					

[a] The 20 µg/m^3 $PM_{2.5}$ objective, which was to be met by 2020, is not in Regulations and there is no requirement for local authorities to meet it. 10 µg/m^3 is the GLA target for annual mean $PM_{2.5}$; again, there is no requirement for local authorities to meet this.

[b] To be met by 2040

[c] There will have been a considerable impact of the Covid-19 pandemic on traffic volumes and thus pollutant concentrations in this year and therefore concentrations are not representative of 'typical' air quality conditions.

Table 5-4: Number of Days With PM_{10} Concentrations Above 50 µg/m^3

Site No.	Site Type	Location	2018	2019	2020 [a]	2021 [a]	2022	2023
CD1	Kerbside		4	8	3	0	0	2
Objective			35					

[a] There will have been a considerable impact of the Covid-19 pandemic on traffic volumes and thus pollutant concentrations in this year and therefore concentrations are not representative of 'typical' air quality conditions.

Exceedances of Limit Value

5.8 There are several AURN monitoring sites within the Greater London Urban Area that have measured exceedances of the annual mean NO_2 limit value (Defra, 2025b). Furthermore, Defra's roadside annual mean NO_2 concentrations (Defra, 2025d), which are used to identify and report exceedances of the limit value, identify exceedances of this limit value in 2023 along many roads in London, but not for the roads close to the Proposed Development. The Greater London Urban Area has thus been reported as exceeding the limit value for annual mean NO_2 concentrations. Defra's predicted concentrations for 2028 (Defra, 2020) also do not identify any exceedances 1 km of the application Site. As such, there is considered to be no risk of a limit value exceedance in the vicinity of the Proposed Development by the time that it is operational.

5.9 Defra's Air Quality Plan requires the GLA to prepare an action plan that will "*deliver compliance in the shortest time possible*", and the 2015 Plan assumed that a CAZ was required. The GLA has already implemented an LEZ and a ULEZ, thus the authority has effectively already implemented the required CAZ. These have been implemented as part of a package of measures including 12 Low Emission Bus Zones, Low Emission Neighbourhoods, the phasing out of diesel buses and taxis and other measures within the Mayor's Transport Strategy.

LAEI Concentrations

5.10 Modelled annual mean NO_2, PM_{10} and $PM_{2.5}$ concentrations presented in the London Atmospheric Emissions Inventory (LAEI) database (GLA, 2023) in the vicinity of the Proposed Development have been examined and presented in Table 5-5 below. The 2025 concentrations are considered worst-case, as the opening year of the Proposed Development is 2028; concentrations at the Proposed Development in the opening year are expected to be between the 2025 and 2030 concentrations presented below.

5.11 The maximum modelled annual mean NO_2 concentration in 2025 at the Proposed Development is 24.0 µg/m^3 (at the southwestern boundary closest to the B510), which is well below the annual mean NO_2 objective and the Air Quality CPG criterion. At locations further east from the B510, modelled concentrations are slightly lower. As modelled annual mean NO_2 concentrations across the application Site in 2025 are well below 60 µg/m^3, this indicates that exceedances of the 1-hour mean objective are unlikely.

5.12 The maximum modelled 2025 annual mean PM_{10} and $PM_{2.5}$ concentrations within the Proposed Development boundary are 17.5 µg/m^3 and 10.3 µg/m^3, which are below the respective national objectives. While the maximum modelled annual mean $PM_{2.5}$ concentrations are above the GLA target and Air Quality CPG criteria of 10 µg/m^3 in 2025, modelled 2030 LAEI concentrations predict the maximum $PM_{2.5}$ concentration at the Proposed Development façade will be 9.2 µg/m^3 and therefore meet both the GLA target and Air Quality CPG criteria.

Table 5-5: LAEI Modelled Concentrations in 2025 and 2030 (µg/m^3)

Year	NO_2	PM_{10}	$PM_{2.5}$
2025	24.0	17.5	10.3
2030	19.0	16.5	9.2
Objective / GLA target	40	40	20 / 10 [a]
AMCT [b]	-	-	10

Year	NO_2	PM_{10}	$PM_{2.5}$

[a] The 20 µg/m³ $PM_{2.5}$ objective, which was to be met by 2020, is not in Regulations and there is no requirement for local authorities to meet it. 10 µg/m³ is the GLA target for annual mean $PM_{2.5}$; again, there is no requirement for local authorities to meet this.

[b] To be met by 2040

Background Concentrations

5.13 Estimated background concentrations at the Proposed Development are set out in Table 5-6 and are all below the respective objectives, GLA target and Air Quality CPG criteria.

Table 5-6: Estimated Annual Mean Background Pollutant Concentrations in 2023 and 2028 (µg/m³)

Year	NO_2	PM_{10}	$PM_{2.5}$
2023	14.3	15.6	8.9
2028	11.6	15.4	8.5
Objective / GLA target	40	40	20 / 10 [a]
AMCT [b]	-	-	10

[a] The 20 µg/m³ $PM_{2.5}$ objective, which was to be met by 2020, is not in Regulations and there is no requirement for local authorities to meet it. 10 µg/m³ is the GLA target for annual mean $PM_{2.5}$; again, there is no requirement for local authorities to meet this.

[b] To be met by 2040

6 Construction Phase Impact Assessment

Construction Traffic

6.1 The excavation works will generate a large number of HGV movements over a 4 month period when the excavation waste will be removed from the Site, but these will be temporary and thus won't have a significant lasting effect on local air quality. When vehicle movements are averaged over the whole construction period, the additional heavy vehicle movements on local roads will be below the 25 AADT screening criterion recommended by EPUK/IAQM guidance (Moorcroft and Barrowcliffe et al, 2017). It is, therefore, not considered necessary to assess the impacts of traffic emissions during the construction phase and it can be concluded that the Proposed Development will not have a significant impact on local roadside air quality as a result of construction traffic emissions.

On-Site Exhaust Emissions

6.2 The IAQM guidance (IAQM, 2024) states:

"Experience of assessing the exhaust emissions from on-site plant (also known as non-road mobile machinery or NRMM) and site traffic suggests that they are unlikely to make a significant impact on local air quality, and in the vast majority of cases they will not need to be quantitatively assessed. For site plant and on-site traffic, consideration should be given to the number of plant/vehicles and their operating hours and locations to assess whether a significant effect is likely to occur".

6.3 The Proposed Development is relatively small, thus the number of NRMM able to operate at any one time will be limited. In line with the GLA's Control of Dust and Emissions During Construction and Demolition SPG, and as describe in Appendix A2, NRMM are expected to comply with emissions standards. Additionally, there will be no idling when vehicles are not in use (as, in accordance with the CMP, all engines will be switched off when not in use), and machinery will be located away from sensitive receptors as far as possible. It is judged that there is no risk of significant effects at existing receptors as a result of on-site machinery emissions.

Construction Dust and Particulate Matter Emissions

6.4 The construction works will give rise to a risk of dust impacts during demolition, earthworks and construction, as well as from trackout of dust and dirt by vehicles onto the public highway. Step 1 of the assessment procedure is to screen the need for a detailed assessment. There are receptors within the distances set out in the guidance (see Appendix A2), thus a detailed assessment is required. The following section sets out Step 2 of the assessment procedure.

Potential Dust Emission Magnitude

Demolition

6.5 There will be a requirement to demolish the existing brick buildings with an approximate total volume 9,000 m^3, anticipated to take place from May to July and thus during drier months. Demolition will occur up to a height of 9 m and will require crushing and screening equipment. Based on the example definitions set out in Table A2-1 in Appendix A2, the dust emission class for demolition is judged to be medium.

Earthworks

6.6 The characteristics of the soil at the Site have been defined using the British Geological Survey's UK Soil Observatory website (British Geological Survey, 2025), as set out in Table 6-1. Overall, it is considered that, when dry, this soil has the potential to be moderately dusty.

Table 6-1: Summary of Soil Characteristics

Category	Record
Soil Layer Thickness	Deep
Soil Parent Material Grain Size	Argillaceous [a]
European Soil Bureau Description	Pre-quaternary Marine/Estuarine Sand and Silt
Soil Group	Medium to Light (Silty) to Heavy
Soil Texture	Clayey Loam [b] to Silty Loam

[a] grain size < 0.06 mm.

[b] a loam is composed mostly of sand and silt.

6.7 The Site covers approximately 2,500 m^2 and all of this will be subject to earthworks, involving the breaking up of paved areas, piling and bulk excavations (for the single level basement across the whole Site area). The earthworks will last up to 4 months and is anticipated to occur during summer. The Site is small thus vehicles will be travelling over unpaved ground for only short distance, however there will be up to a maximum of 5 or 6 vehicles per hour removing soil from the Site. Dust will mainly arise from the handling of dusty materials (such as dry soil). Based on the example definitions set out in Table A2-1 in Appendix A2, the dust emission class for earthworks is judged to be medium as a worst-case because of the number of heavy earth moving vehicles that will be active on the Site.

Construction

6.8 The Proposed Development involves the construction of a 7 storey and 10 storey building, with a total building volume of less than 75,000 m^3. The building will be constructed from ready-mix concrete and brick. Dust will arise from the handling and storage of dusty materials, and from the cutting of concrete. The construction will take place over 24-month period. There will be no on-site concrete batching or sand blasting. Based on the example definitions set out in Table A2-1 in Appendix A2, the dust emission class for construction is judged to be medium because of the building volume, construction materials and type of construction activities that will take place.

Trackout

6.9 During the bulk excavation works, there will be up to 40 outward heavy vehicle movements per day. Based on the example definitions set out in Table A2-1 in Appendix A2, the dust emission class for trackout is therefore judged to be medium because there will be between 20-50 outward heavy vehicle movements in any one day.

6.10 Table 6-2 summarises the dust emission magnitude for the Proposed Development.

Table 6-2: Summary of Dust Emission Magnitude

Source	Dust Emission Magnitude
Demolition	Medium

Source	Dust Emission Magnitude
Earthworks	Medium
Construction	Medium
Trackout	Medium

Sensitivity of the Area

6.11 This assessment step combines the sensitivity of individual receptors to dust effects with the number of receptors in the area and their proximity to the Site. It also considers additional site-specific factors such as topography and screening, and in the case of sensitivity to human health effects, baseline PM_{10} concentrations.

6.12 The IAQM guidance, upon which the GLA's guidance is based, explains that residential properties are 'high' sensitivity receptors to dust soiling, while places of work are 'medium' sensitivity receptors (Table A2-2 in Appendix A2). Residential properties are also classified as being of 'high' sensitivity to human health effects, while places of work are classified as being of 'medium' sensitivity. There are between 10 and 100 residential properties within 20 m of the Site (see Figure 6-1).

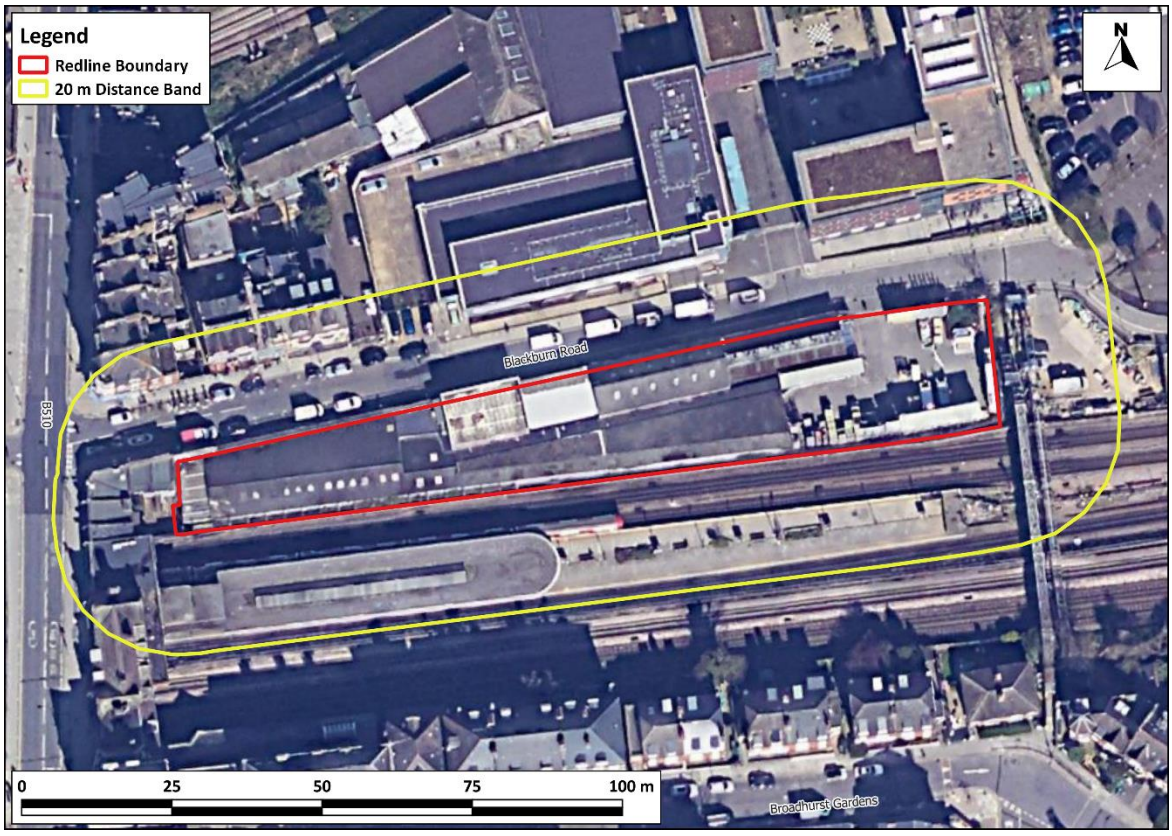

Figure 6-1: 20 m Distance Band around the Site Boundary

Imagery ©2025 Airbus, Maxar Technologies, Mapdata ©2025.

6.13 The IAQM guidance (IAQM, 2024) explains that there is a risk of material being tracked 250 m from the Site exit. Construction vehicles will access the Site via Blackburn Road, approaching from the B510 West End Lane from both the north and south. There are estimated to be more than 100

residential properties within 20 m of the roads along which material could be tracked, as well as retail units and places of work (see Figure 6-2).

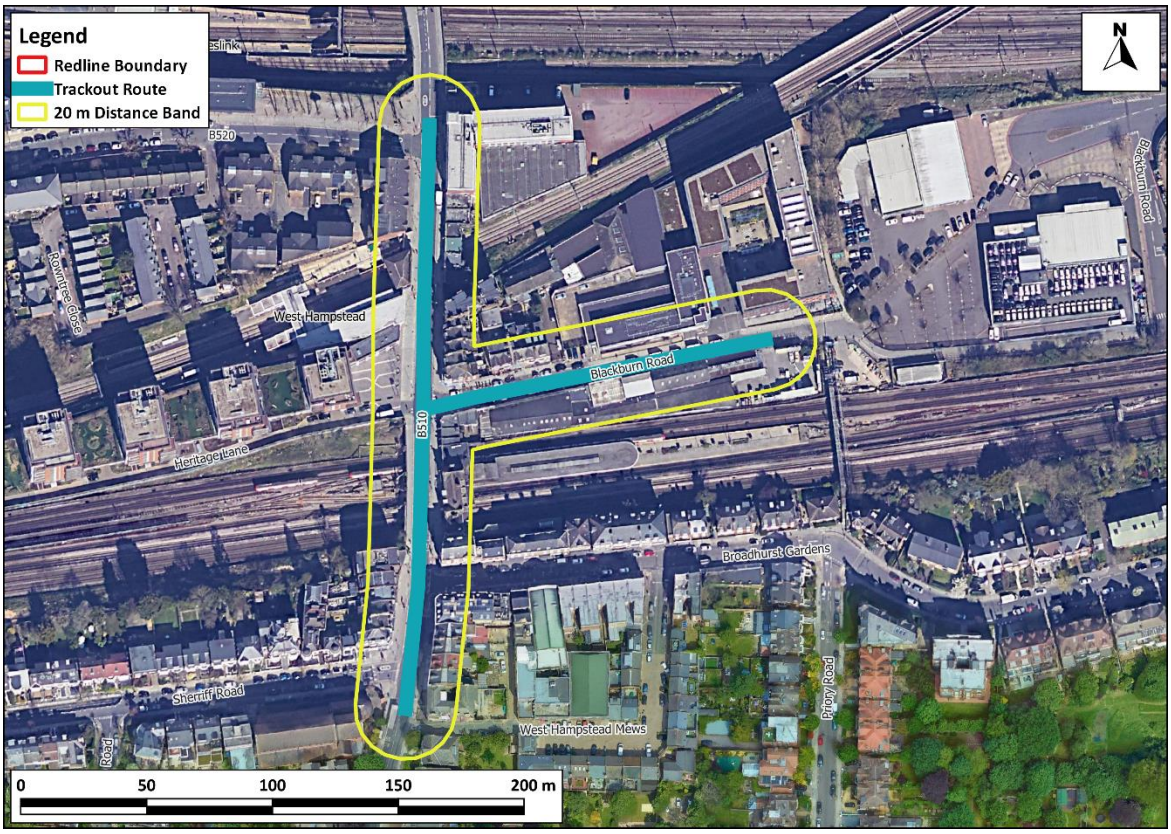

Figure 6-2: 20 m Distance Bands around Roads Used by Construction Traffic within 250 m of the Site Exit

Imagery ©2025 Airbus, Maxar Technologies, Mapdata ©2025.

Sensitivity of the Area to Effects from Dust Soiling

6.14 Using the information set out in Paragraph 6.12 and Figure 6-1 alongside the matrix set out in Table A2-3 in Appendix A2, the area surrounding the on-site works is of 'high' sensitivity to dust soiling. Using the information set out in Paragraph 6.13 and Figure 6-2 alongside the same matrix, the area is also of 'high' sensitivity to dust soiling due to trackout.

Sensitivity of the Area to any Human Health Effects

6.15 The matrix in Table A2-4 in Appendix A2 requires information on the baseline annual mean PM_{10} concentration in the area. The closest measured PM_{10} concentrations are those from 2023 for the CD1 automatic monitor, presented in Table 5-3 (18 µg/m^3). As discussed in Section 5, concentrations at this monitor are likely to be greater than at the Proposed Development and therefore this represents a worst-case. Using the information set out in Paragraphs 6.12 and Figure 6-1 alongside the matrix in Table A2-4 in Appendix A2, the area surrounding the on-site works is of 'low' sensitivity to human health effects. Using the information set out in Paragraph 6.13 and Figure 6-2 alongside the same matrix, the area surrounding roads along which material may be tracked from the Site is also of 'medium' sensitivity.

Sensitivity of the Area to any Ecological Effects

6.16 The guidance only considers designated ecological sites within 50 m to have the potential to be impacted by the construction works. There are no designated ecological sites within 50 m of the Site boundary or those roads along which material may be tracked, thus ecological impacts will not be considered further.

Summary of the Area Sensitivity

6.17 Table 6-3 summarises the sensitivity of the area around the proposed construction works.

Table 6-3: Summary of the Area Sensitivity

Effects Associated With:	Sensitivity of the Surrounding Area	
	On-site Works	Trackout
Dust Soiling	High Sensitivity	High Sensitivity
Human Health	Low Sensitivity	Medium Sensitivity

Risk and Significance

6.18 The dust emission magnitudes in Table 6-2 have been combined with the sensitivities of the area in Table 6-3 using the matrix in Table A2-6 in Appendix A2, in order to assign a risk category to each activity. The resulting risk categories for the four construction activities, without mitigation, are set out in Table 6-4. These risk categories have been used to determine the appropriate level of mitigation as set out in Section 10 (Step 3 of the assessment procedure).

Table 6-4: Summary of Risk of Impacts Without Mitigation

Source	Dust Soiling	Human Health
Demolition	Medium Risk	Low Risk
Earthworks	Medium Risk	Low Risk
Construction	Medium Risk	Low Risk
Trackout	Medium Risk	Medium Risk

6.19 The IAQM guidance does not provide a method for assessing the significance of effects before mitigation, and advises that pre-mitigation significance should not be determined. With appropriate mitigation in place, the IAQM guidance is clear that the residual effect will normally be 'not significant' (IAQM, 2024).

7 Operational Phase Impact Assessment

Impacts at Existing Receptors

Assessment of Development-Generated Road Traffic Emissions

7.1 The Proposed Development is car-free, with no on-site parking. However, the transport consultants for the project (ITP) have estimated that the Proposed Development will generate a total of 56 daily vehicle trips (primarily associated with delivery and servicing vehicles), eight of which would be trips associated with HGVs. These daily trip rates are below the screening threshold of 25 HDVs and 100 LDVs recommended for use inside of an AQMA in the EPUK/IAQM guidance (Moorcroft and Barrowcliffe et al, 2017) (see Paragraph 3.17).

7.2 As such, it is judged that the relevant screening thresholds will not be exceeded and there is no requirement for a detailed assessment of road traffic impacts at existing receptors; it can be concluded that the Proposed Development will not have a significant impact on local roadside air quality.

Assessment of Emergency Generator Emissions

7.3 A 300 kW backup diesel generator is proposed at the Site for life-safety purposes. Alternatives to a diesel generator have been considered e.g. Uninterruptable Power Supplies (UPS), however the MEP consultant for the project (CGP MEP) have stated that these alternatives are not viable:

"BS519 states that the secondary supply should preferably be a standby generator, but it does not rule out the possibility of a secondary mains supply; however certain criteria must be met. Firstly, it must be a completely independent High Voltage (HV) supply, not Low Voltage (LV). BS8519 also states that this option can only be used if assurance can be obtained that the two independent supplies are unlikely to fail concurrently. A secondary HV supply would incur significant costs as this would need to be from a separate HV network, and the utility provider will only classify this as a secondary supply, and not a life-safety supply.

UPS systems can be considered for life-safety but only in residential buildings. As designers we must consider that most UPS systems are designed for short term backup. When used for life-safety, the UPS must be sized to deliver the maximum fault current output required – this makes the room provision considerably large due to the battery sizes to support the electrical loads in question. Cooling of the units and room must also be considered, bearing in mind that there may not be a generator supporting the air conditioning, and the required run time for the life-safety equipment could see thermal build-up within the UPS location. Consideration must also be given if the UPS is being used with equipment that can regenerate reverse power such as lifts; whilst a generator can absorb some regenerative load a UPS may not be able to, and additional equipment may be needed to prevent shutdowns or damage to the UPS equipment.

With growing pressure on generator emissions, selecting a UPS for life-safety does seem an attractive alternative, but this must be considered carefully. BS8519 does state that the secondary supply would preferably be an automatic starting standby generator."

7.4 A 330 kW generator has been proposed as the estimated total load of the life-safety equipment is 185 kW and a starting K factor of 1.6 is required.

7.5 The generator will only be operated routinely for testing and maintenance for less than 50 hours per year. These tests are likely to occur under a variety of meteorological conditions (and wind directions), meaning that it is unlikely that any periods of elevated concentrations would occur at the same

location each time the generator is run. Furthermore, given the low number of annual operating hours and the small size of the generator, the NOx emission rate of the generator is expected to be well below 5 mg/sec when the emissions generated during testing are averaged over a year.

7.6 Moreover, the flue will exhaust at roof level and therefore, provided the height of the flue exhaust is above the height of PBSA student roof, the exhaust stack is considered to facilitate adequate dispersion. Therefore, in accordance with the EPUK/IAQM screening criteria, the effect of the proposed emergency generator testing on local air quality of emissions is considered insignificant.

Impacts of Existing Sources on Future Occupants of the Development

7.7 A review of local authority monitoring data close to the development (see Table 5-6) shows that measured concentrations of NO_2 are below the respective objectives as well as the Air Quality CPG criterion. The maximum modelled NO_2 LAEI concentrations for 2025 within the Proposed Development are also well below the respective objectives/targets (see Table 5-5). As the development is not expected to be occupied until 2028, this represents a worst-case. Therefore, it is expected that concentrations at the Proposed Development will be below the respective national objectives and Air Quality CPG criterion.

7.8 The closest available measured concentrations of PM_{10} and $PM_{2.5}$ are located within a nearby focus area, which would be expected to experience higher concentrations than the Site. Nonetheless, measured concentrations of PM_{10} and $PM_{2.5}$ in 2023 were below the respective objectives, Air Quality CPG criteria and GLA target. The maximum modelled 2025 PM_{10} LAEI concentrations also predict annual mean concentrations to be below the relevant objective (see Table 5-5). However, the maximum modelled $PM_{2.5}$ LAEI concentrations is 10.1 µg/m^3 (see Table 5-5), which is slightly above the GLA target and Air Quality CPG criterion. However, this is worst-case as the Proposed Development will not be fully operational until 2028 and most of the Site has lower modelled concentrations. In 2030, the maximum modelled $PM_{2.5}$ concentration at the Proposed Development reduces to 9.2 µg/m^3 and therefore below the GLA target and Air Quality CPG criteria.

7.9 Thus, it can be concluded that future residents will experience acceptable air quality.

Significance of Operational Air Quality Effects

7.10 The operational air quality effects without mitigation are judged to be 'not significant'. This professional judgement is made in accordance with the methodology set out in Appendix A3 and takes account of the assessment that:

- pollutant concentrations within the Proposed Development will be below the relevant objectives and Air Quality CPG criteria, thus future residents will experience acceptable air quality;
- the Proposed Development will be car-free and generate traffic well below industry screening thresholds;
- the Proposed Development will not have a meaningful effect on whether or not the interim and long-term $PM_{2.5}$ concentration targets are met within the study area; and
- the Proposed Development will have an all-electric energy strategy. While the development will include one small diesel generator for life-safety purposes, this will operate for less than 50 hours per year and the exhaust stack will be located at roof level to ensure good dispersion of emissions.

8 Impacts With and On the Wider O2 Masterplan

Construction Phase

8.1 The IAQM guidance (2024) (upon which the GLA's guidance (2014b) is based) is clear that, with appropriate mitigation measures in place, any residual demolition and construction dust effects from an individual site will be 'not significant'. The guidance also suggests that cumulative construction dust impacts are only likely where sites are within 250 m of each other. Work would also have to be taking place in areas of both sites that are close to a receptor in order for cumulative effects to occur.

8.2 Therefore, if the demolition/construction of the Proposed Development were to occur at the same time as demolition/construction work on the wider O2 masterplan site, it is recommended the construction contractors hold regular liaison meetings to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is also anticipated that the wider O2 masterplan will adopt appropriate mitigation measures to limit emissions of dust. With these measures in place, the effect of construction activities from the Proposed Development with and on the wider O2 masterplan should be not significant.

Operational Phase

8.3 As stated in Paragraph 7.1, the Proposed Development will be car-free and the traffic generated by the Proposed Development is below published screening criteria set out in the EPUK/IAQM guidance (Moorcroft and Barrowcliffe et al, 2017). These screening criteria are designed to provide a threshold below which the effects will be 'not significant' regardless of baseline conditions. Therefore, any local air quality impacts with or on the wider O2 masterplan associated with traffic generated by the Proposed Development will also remain 'not significant'.

8.4 Likewise, provided the suitable mitigation measures discussed in paragraphs 7.5 and 7.6 are implemented for the emergency generator, the impact associated with testing and maintenance of the emergency generator on the wider O2 masterplan would be not significant. Although the wider O2 masterplan may also include generators, given the infrequency of operation of these emergency plant which are operated routinely only for testing and maintenance purposes, cumulative effects with the Proposed Development are considered unlikely.

9 'Air Quality Neutral'

9.1 The purpose of the London Plan's requirement that development proposals be 'air quality neutral' is to prevent the gradual deterioration of air quality throughout Greater London. The 'air quality neutrality' of the Proposed Development, as assessed in this section, does not indicate the potential of the Proposed Development to have significant impacts on human health (this has been assessed separately in the previous section). The air quality neutral assessment has been undertaken using the latest GLA's London Plan Guidance (Air Quality Neutral) (GLA, 2023a).

Building Emissions

9.2 The Proposed Development will have an all-electric energy strategy so does not include any combustion plant for the routine provision of electricity, heating or hot water and will thus have no direct building emissions. It will include a life-safety diesel generator, however the GLA's Air Quality Neutral guidance states that "*backup plant installed for emergency and life safety power supply, such as diesel generators, may be excluded from the calculation of predicted building emissions*". The Proposed Development therefore meets the air quality neutral requirements in terms of building emissions.

Road Transport Emissions

9.3 The Proposed Development is car-free. Paragraph 4.1.3 of the GLA's Air Quality Neutral guidance states "*where major developments meet the definition of 'car-free', they can be assumed to meet the Transport Emissions Benchmark (TEB)*". The Proposed Development therefore meets the air quality neutral requirements in terms of transport emissions.

Summary

9.4 As the Proposed Development is car free and the only source of on-site combustion will be an emergency generator, it therefore complies with the requirement that all new developments in London should be at least air quality neutral.

10 Mitigation

Good Design and Best Practice

10.1 The EPUK/IAQM guidance advises that good design and best practice measures should be considered, whether or not more specific mitigation is required. The Air Quality Positive Statement that was completed for the wider O2 Masterplan in 2022 (Hoare Lea, 2022), contains principles of good design and best practice which should be incorporated into its developments and have subsequently been included within the Proposed Development. Additional measures specific to the Proposed Development have also been included. The Proposed Development will therefore contribute positively to the extant O2 Masterplan and the recent S73 application to amend to the O2 Materplan (if granted), and represents an improvement in terms of the associated public benefits.

10.2 The Proposed Development incorporates the following good design and best practice measures:

- The ground floor of the development will not include any dwellings so that the more sensitive users are furthest away from sources of pollution;
- being a car-free development, with no on-site car parking spaces to discourage the use of private vehicles to access the Proposed Development);
- adoption of a Dust Management Plan (DMP) or Construction Environmental Management Plan (CEMP) to minimise the environmental impacts of the construction works
- provision of a travel plan setting out measures to encourage sustainable means of transport;
- provision of openable windows to reduce reliance on mechanical ventilation systems;
- provision for cycling facilities, including access and storage comprising:
    - 173 long stay cycle parking spaces for the PBSA;
    - 80 long stay cycle parking spaces for the residential C3 element;
    - 6 cycle parking spaces for commercial use; and
    - 38 publicly accessible short stay cycle parking spaces adjacent to the proposed building;
- provision for pedestrian access, including additional clearance of the Blackburn Road frontage to allow for a generously dimensioned high-quality pedestrian amenity;
- installation of mechanical ventilation with ISO $EPM_{2.5}$ filtration of over 50% at all air intakes.
- designing an all-electric energy strategy to avoid the need for on-site combustion;
- designing the flue of the emergency generator to be above roof level of the PBSA block to ensure the best possible dispersion environment; and
- limiting operation of the emergency generator to a maximum of 50 hours per year.

Recommended Mitigation

Construction Impacts

10.3 Measures to mitigate dust emissions will be required during the construction phase of the development in order to minimise effects upon nearby sensitive receptors.

10.4 The Site has been identified as a Medium Risk site during demolition, construction, earthworks and trackout, as set out in Table 6-4. The GLA's SPG on The Control of Dust and Emissions During Construction and Demolition (GLA, 2014b) describes measures that should be employed, as appropriate, to reduce the impacts, along with guidance on what monitoring should be undertaken during the construction phase. This reflects best practice experience and has been used, together with the professional experience of the consultant who has undertaken the dust impact assessment and the findings of the assessment, to draw up a set of measures that should be incorporated into the specification for the works. These measures are described in Appendix A5.

10.5 The mitigation measures should be written into a Dust Management Plan (DMP). The GLA's guidance suggests that, for a Medium Risk site, automatic monitoring of particulate matter (as PM_{10}) will be required. It also states that, on certain sites, it may be appropriate to determine the existing (baseline) pollution levels before work begins. However, the guidance is clear that the Local Authority should advise as to the appropriate air quality monitoring procedure and timescale on a case-by-case basis.

10.6 Where mitigation measures rely on water, it is expected that only sufficient water will be applied to damp down the material. There should not be any excess to potentially contaminate local watercourses.

Road Traffic Impacts

10.7 The assessment has demonstrated that the overall air quality effect of the Proposed Development will be 'not significant'; it will not introduce any new exposure into areas of unacceptable air quality, nor will the development-generated traffic emissions have a significant impact on local air quality. It is, therefore, not considered appropriate to propose further mitigation measures for this development.

10.8 Measures to reduce pollutant emissions from road traffic are principally being delivered in the longer term by the introduction of more stringent emissions standards, largely via European legislation (which is written into UK law). The local air quality action plan that the GLA is required to produce in order to address limit value exceedances in its area will also help to improve air quality; the implementation and expansion of the ULEZ can reasonably be expected to lead to significant improvements. The Council's CAAP will also be helping to deliver improved air quality.

Energy Plant Impacts

10.9 The assessment has demonstrated that the emissions from the energy plant within the Proposed Development will have an insignificant impact on air quality at existing nearby properties and will not lead to any objective exceedances within the development itself. As such, there is no requirement for mitigation beyond the best practice design measures highlighted above. However, if the size, stack design or testing and maintenance profile increases, additional assessment and/or mitigation may be required.

11 Achieving Compliance with the $PM_{2.5}$ Targets

11.1 The annual mean $PM_{2.5}$ concentrations are well below the AMCT target to be met by 2040 at all receptors, with or without the Proposed Development.

11.2 The monitoring data described in Section 5 demonstrate that annual mean $PM_{2.5}$ concentrations currently meet the AMCT, which is to be met by 2040, across the borough. The closest $PM_{2.5}$ monitor also measured concentrations which meet the AMCT.

11.3 Defra have set out in their Interim Planning Guidance (Defra, 2024) two questions designed to consider whether a development supports the AMCT and PERT $PM_{2.5}$ targets. The first question is "*How has exposure to $PM_{2.5}$ been considered when selecting the development site?", whilst the* second question is "*What actions and/or mitigations have been considered to reduce $PM_{2.5}$ exposure for development users and nearby receptors (houses, hospitals, schools etc.) and to reduce emissions of $PM_{2.5}$ and its precursors?*".

11.4 As explained in Section 5.7 exposure to $PM_{2.5}$ and measures to minimise emissions of $PM_{2.5}$ have been considered in the following ways:

- emissions during the construction phase will be managed through the use of appropriate mitigation measures and set out within a DMP secured by condition;
- development of an all-electric energy strategy so there are no on-site combustion sources for the routine provision of heat, hot water and electricity;
- development of a travel plan, encouraging active travel modes, including provision for both pedestrian and cycle access; and
- the Proposed Development will be car-free.

11.5 It is considered that the development complies with the requirements to deliver achievement of the AMCT and PERT by 2040 as appropriate action has been taken to minimise emissions of $PM_{2.5}$ and its precursors as far as is reasonably practicable.

12 Residual Impacts

Construction

12.1 The IAQM guidance, on which the GLA's guidance is based, is clear that, with appropriate mitigation in place, the residual effects will normally be 'not significant'. The mitigation measures set out in Section 10 and Appendix A5 are based on the GLA guidance. With these measures in place and effectively implemented the residual effects are judged to be 'not significant'.

12.2 The IAQM guidance does, however, recognise that, even with a rigorous dust management plan in place, it is not possible to guarantee that the dust mitigation measures will be effective all of the time, for instance under adverse weather conditions. During these events, short-term dust annoyance may occur, however, the scale of this would not normally be considered sufficient to change the conclusion that overall the effects will be 'not significant'.

Operation

12.3 The residual impacts will be the same as those identified in Section 7. The overall effects of the Proposed Development will be 'not significant'.

13 Conclusions

13.1 The assessment has considered the impacts of the Proposed Development on local air quality in terms of dust and particulate matter emissions during construction, emissions from road traffic generated by the completed and occupied development, and emissions from the diesel generator for life-safety power provision. It has also identified the air quality conditions that future residents/users will experience and whether or not the Proposed Development is air quality neutral (as required by the London Plan).

Construction Impacts

13.2 The construction works have the potential to create dust. During construction the necessary package of mitigation measures will be applied to minimise dust emissions. Appropriate measures have been recommended and, with these measures in place, it is expected that any residual effects will be 'not significant'.

Operational Impacts

13.3 Air quality conditions for future residents of the Proposed Development have been shown to be acceptable, with concentrations well below the respective air quality objectives and Air Quality CPG criteria throughout the Site. Annual $PM_{2.5}$ concentrations at the Site will also be below the GLA target.

13.4 A number of best practice measures have been included within the design of the Proposed Development to reduce the impact of the Proposed Development on air quality. Furthermore, the Proposed Development is car free and does not include any routine use of on-site combustion for the routine provision of energy, and it will have a negligible effect on local air quality.

13.5 The overall operational air quality effects of the Proposed Development are judged to be 'not significant'.

Air Quality Neutral

13.6 As the Proposed Development is car free and does not include any on-site combustion plant for the routine provision of energy, the Proposed Development therefore complies with the requirement that all new developments in London should be at least air quality neutral.

Policy Implications

13.7 Taking into account these conclusions, it is judged that the Proposed Development is consistent with Paragraph 198 of the NPPF, being appropriate for its location both in terms of its effects on the local air quality environment and the air quality conditions for future residents. It is also consistent with Paragraph 199, as it will not affect compliance with relevant limit values or national objectives. It is considered that the development complies with the requirements to deliver achievement of the AMCT and PERT by 2040 as appropriate action has been taken to minimise emissions of $PM_{2.5}$ and its precursors as far as is reasonably practicable.

13.8 The Proposed Development is also consistent with Policy A1 and CC4 of LBC's Local Plan, as well as the Air Quality CPG, as it will not have a significant detrimental effect on local air quality and has shown acceptable air quality for new sensitive receptors. Additionally, the Proposed Development is designated as car-free, and thus is compliant with the policy T2.

13.9 The Proposed Development is compliant with Policy SI 1 of the London Plan in the following ways:

- it will not lead to further deterioration of existing poor air quality;
- it will not cause exceedances of legal air quality limits;
- it will not create unacceptable risk of high levels exposure to poor air;
- design solutions have been used to address air quality issues rather than post-design mitigation, including design measures to minimise exposure; and
- it is better than air quality neutral.

14 References

British Geological Survey (2025) *UK Soil Observatory Map Viewer*.

Clean Air Act 1993 (1993), HMSO, Available: http://www.legislation.gov.uk/ukpga/1993/11/contents.

Defra (2007) *The Air Quality Strategy for England, Scotland, Wales and Northern Ireland*, Defra.

Defra (2017) *Air quality plan for nitrogen dioxide (NO2) in the UK*, Available: https://www.gov.uk/government/publications/air-quality-plan-for-nitrogen-dioxide-no2-in-uk-2017.

Defra (2018a) *A Green Future: Our 25 Year Plan to Improve the Environment*, [Online], Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-year-environment-plan.pdf.

Defra (2018b) *Supplement to the UK plan for tackling roadside nitrogen dioxide concentrations*, Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/746100/air-quality-no2-plan-supplement.pdf.

Defra (2019) *Clean Air Strategy 2019*, Available: https://www.gov.uk/government/publications/clean-air-strategy-2019.

Defra (2020) *2020 NO2 projections data (2018 reference year)*, Available: https://uk-air.defra.gov.uk/library/no2ten/2020-no2-pm-projections-from-2018-data.

Defra (2022) *Review & Assessment: Technical Guidance LAQM.TG22 August 2022 Version*, [Online], Available: https://laqm.defra.gov.uk/wp-content/uploads/2022/08/LAQM-TG22-August-22-v1.0.pdf.

Defra (2023a) *Air Quality Strategy: Framework for Local Authority Delivery*, [Online], Available: https://www.gov.uk/government/publications/the-air-quality-strategy-for-england/air-quality-strategy-framework-for-local-authority-delivery.

Defra (2023b) *Environmental Improvement Plan 2023*, [Online], Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1133967/environmental-improvement-plan-2023.pdf.

Defra (2024) *PM2.5 Targets: Interim Planning Guidance*, [Online], Available: https://uk-air.defra.gov.uk/pm25targets/planning.

Defra (2025a) *UK Pollutant Release and Transfer Register*, [Online], Available: http://prtr.defra.gov.uk/map-search.

Defra (2025b) *Local Air Quality Management (LAQM) Support Website*, [Online], Available: http://laqm.defra.gov.uk/.

Defra (2025c) *UK Air Compliance Data*, [Online], Available: https://uk-air.defra.gov.uk/compliance-data.

Defra (2025d) *UK Ambient Air Quality Interactive Map*, [Online], Available: https://uk-air.defra.gov.uk/data/gis-mapping.

Department for Levelling Up, Housing and Communities (DLUHC) (2024) *National Planning Policy Framework*, [Online], Available: https://assets.publishing.service.gov.uk/media/675abd214cbda57cacd3476e/NPPF-December-2024.pdf.

DfT (2018) *The Road to Zero: Next steps towards cleaner road transport and delivering our Industrial Strategy*.

Environment Act 2021 (2021).

Environmental Protection Act 1990 (1990), Available: http://www.legislation.gov.uk/ukpga/1990/43/contents.

GLA (2014a) *Sustainable Design and Construction Supplementary Planning Guidance*, Available: https://www.london.gov.uk/what-we-do/planning/implementing-london-plan/supplementary-planning-guidance/sustainable-design-and.

GLA (2014b) *The Control of Dust and Emissions from Construction and Demolition SPG*, Available: https://www.london.gov.uk/what-we-do/planning/implementing-london-plan/supplementary-planning-guidance/control-dust-and.

GLA (2018a) *London Environment Strategy*, Available: https://www.london.gov.uk/what-we-do/environment/london-environment-strategy.

GLA (2018b) *Mayor's Transport Strategy*, Available: https://www.london.gov.uk/sites/default/files/mayors-transport-strategy-2018.pdf.

GLA (2019) 'London Local Air Quality Management Technical Guidance 2019', no. https://www.london.gov.uk/sites/default/files/llaqm_technical_guidance_2019.pdf.

GLA (2021) *The London Plan: The Spatial Development Strategy for London*, Available: https://www.london.gov.uk/sites/default/files/the_london_plan_2021.pdf.

GLA (2023a) *London Plan Guidance - Air Quality Neutral.*, Available: https://www.london.gov.uk/programmes-strategies/planning/implementing-london-plan/london-plan-guidance/air-quality-neutral-aqn-guidance.

GLA (2023b) *London Atmospheric Emissions Investory (LAEI) 2019, Updated 2023*.

HM Government (2021a) *Ventilation - Approved Document F*, [Online], Available: https://www.gov.uk/government/publications/ventilation-approved-document-f.

HM Government (2021b) *Infrastructure for the charging of electric vehicles - Approved Document S*, [Online], Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1057375/AD_S.pdf.

Hoare Lea (2022) *O2 Masterplan Site, Finchley Road: Air Quality Positive Statement*.

IAQM (2024) *Guidance on the Assessmentof Dust from Demolition and Construction v2.2*, [Online], Available: http://iaqm.co.uk/guidance/.

LB Camden (2024a) *Draft New Camden Local Plan*.

LB of Camden (2023a) *Air Quality Assessment in Planning Applications*, [Online], Available: https://www.camden.gov.uk/air-quality-assessment.

London Borough of Camden (2017) 'Camden Local Plan', Available: https://www.camden.gov.uk/documents/20142/4820180/Local+Plan.pdf/ce6e992a-91f9-3a60-720c-70290fab78a6.

London Borough of Camden (2021) 'Camden Planning Guidance: Air quality', Available: https://www.camden.gov.uk/documents/20142/4823269/Air+Quality+CPG+Jan+2021.pdf/4d9138c0-6ed0-c1be-ce68-a9ebf61e8477?t=1611580574285.

London Borough of Camden (2022) 'Camden Clean Air Action Plan 2022-2026', Available: https://consultations.wearecamden.org/supporting-communities/camden-clean-air-action-plan-2022-2026/supporting_documents/Camden%20Clean%20Air%20Action%20Plan%2020222026%20Consultation%20Draft%20FINAL%20amended%202022.08.31.pdf.

London Borough of Camden (2024) *London Borough of Camden Air Quality Annual Status Report for 2023*, Available: https://www.camden.gov.uk/documents/d/guest/camden-2023-air-quality-annual-status-report-final-v2.

Ministry of Housing, Communities & Local Government (2019) *Planning Practice Guidance*, Available: https://www.gov.uk/government/collections/planning-practice-guidance.

Ministry of Housing, Communities & Local Government (2022) 'The Building Regulations 2010 Schedule 1', Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/899279/Single_stitched_together_pdf_of_all_ADs__Jun20_.pdf.

Moorcroft and Barrowcliffe et al (2017) *Land-Use Planning & Development Control: Planning For Air Quality v1.2*, IAQM, London, Available: http://iaqm.co.uk/guidance/.

Technical Guidance Note D1 (Dispersion) (1993), HMSO.

The Air Quality (England) (Amendment) Regulations 2002, Statutory Instrument 3043 (2002), HMSO, Available: https://www.legislation.gov.uk/uksi/2002/3043/contents/made.

The Air Quality (England) Regulations 2000 Statutory Instrument 928 (2000), HMSO, Available: http://www.legislation.gov.uk/uksi/2000/928/contents/made.

The Air Quality Standards Regulations 2010 Statutory Instrument 1001 (2010), HMSO, Available: http://www.legislation.gov.uk/uksi/2010/1001/pdfs/uksi_20101001_en.pdf.

The Environmental Permitting (England and Wales) (Amendment) Regulations 2018 Statutory Instrument 110 (2018), HMSO, Available: http://www.legislation.gov.uk/uksi/2018/110/pdfs/uksi_20180110_en.pdf.

The European Parliament and the Council of the European Union (1997) *Directive 97/68/EC of the European Parliament and of the Council*, Available: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:31997L0068.

The European Parliament and the Council of the European Union (2008) *Directive 2008/50/EC of the European Parliament and of the Council*, Available: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32008L0050.

The European Parliament and the Council of the European Union (2015) *Directive 2015/2193/EU of the European Parliament and of the Council*, Available: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32015L2193.

The Town and Country Planning (2015) *Development Management Procedure*, Statutory Instrument 2015 No, 595.

World Health Organization (2006) *Air Quality Guidelines: Global Update 2005: Particulate matter, ozone, nitrogen dioxide and sulfur dioxide. ISBN 92 890 2192 6*.

World Health Organization (2021) *WHO global air quality guidelines: Particulate matter (PM2.5 and PM10), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide. ISBN 978-92-4-003422-8*.

15 Glossary

AADT	Annual Average Daily Traffic
AMCT	Annual Mean Concentration Target (for $PM_{2.5}$)
AQC	Air Quality Consultants
AQMA	Air Quality Management Area
AURN	Automatic Urban and Rural Network
CAZ	Clean Air Zone
CEMP	Construction Environmental Management Plan
CPG	Camden Planning Guidance
Defra	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
EPUK	Environmental Protection UK
EU	European Union
EV	Electric Vehicle
Exceedance	A period of time when the concentration of a pollutant is greater than the appropriate air quality objective. This applies to specified locations with relevant exposure
Focus Area	Location that not only exceeds the annual mean limit value for NO_2 but also has a high level of human exposure
GLA	Greater London Authority
HDV	Heavy Duty Vehicles (> 3.5 tonnes)
HGV	Heavy Goods Vehicle
HMSO	His Majesty's Stationery Office
IAQM	Institute of Air Quality Management
JAQU	Joint Air Quality Unit
kW	Kilowatt
LAEI	London Atmospheric Emissions Inventory
LAQM	Local Air Quality Management
LBC	London Borough of Camden
LDV	Light Duty Vehicles (<3.5 tonnes)
LEZ	Low Emission Zone

$\mu g/m^3$	Micrograms per cubic metre
MW_{th}	Megawatts Thermal
NO_2	Nitrogen dioxide
NOx	Nitrogen oxides (taken to be NO_2 + NO)
NPPF	National Planning Policy Framework
NRMM	Non-road Mobile Machinery
OEP	Office for Environmental Protection
Objectives	A nationally defined set of health-based concentrations for nine pollutants, seven of which are incorporated in Regulations, setting out the extent to which the standards should be achieved by a defined date. There are also vegetation-based objectives for sulphur dioxide and nitrogen oxides
OLEV	Office for Low Emission Vehicles
PERT	Population Exposure Reduction Target (for $PM_{2.5}$)
PM_{10}	Small airborne particles, more specifically particulate matter less than 10 micrometres in aerodynamic diameter
$PM_{2.5}$	Small airborne particles less than 2.5 micrometres in aerodynamic diameter
PPG	Planning Practice Guidance
Standards	A nationally defined set of concentrations for nine pollutants based on assessment of the effects of each pollutant on human health, including the effects on sensitive sub-groups.
TEA	Triethanolamine – used to absorb NO_2
TfL	Transport for London
ULEZ	Ultra Low Emission Zone
WHO	World Health Organisation
ZEC	Zero Emission Capable

16 Appendices

A1 London-Specific Policies and Measures

London Plan

Development Plans

A1.1 Policy SI 1 of the London Plan (GLA, 2021) states the following regarding strategic development plans:

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

Electric Vehicle Charging

A1.2 To support the uptake of zero tailpipe emission vehicles, Policy T6.1 of the London Plan states:

"All residential car parking spaces must provide infrastructure for electric or Ultra-Low Emission vehicles. At least 20 per cent of spaces should have active charging facilities, with passive provision for all remaining spaces".

London Environment Strategy

A1.3 The air quality chapter of the London Environment Strategy sets out three main objectives, each of which is supported by sub-policies and proposals. The Objectives and their sub-policies are set out below:

"Objective 4.1: Support and empower London and its communities, particularly the most disadvantaged and those in priority locations, to reduce their exposure to poor air quality.

- Policy 4.1.1 Make sure that London and its communities, particularly the most disadvantaged and those in priority locations, are empowered to reduce their exposure to poor air quality
- Policy 4.1.2 Improve the understanding of air quality health impacts to better target policies and action

Objective 4.2: Achieve legal compliance with UK and EU limits as soon as possible, including by mobilising action from London Boroughs, government and other partners

- Policy 4.2.1 Reduce emissions from London's road transport network by phasing out fossil fuelled vehicles, prioritising action on diesel, and enabling Londoners to switch to more sustainable forms of transport
- Policy 4.2.2 Reduce emissions from non-road transport sources, including by phasing out fossil fuels
- Policy 4.2.3 Reduce emissions from non-transport sources, including by phasing out fossil fuels
- Policy 4.2.4 The Mayor will work with the government, the London boroughs and other partners to accelerate the achievement of legal limits in Greater London and improve air quality
- Policy 4.2.5 The Mayor will work with other cities (here and internationally), global city and industry networks to share best practice, lead action and support evidence based steps to improve air quality

Objective 4.3: Establish and achieve new, tighter air quality targets for a cleaner London by transitioning to a zero emission London by 2050, meeting world health organization health-based guidelines for air quality

- Policy 4.3.1 The Mayor will establish new targets for $PM_{2.5}$ and other pollutants where needed. The Mayor will seek to meet these targets as soon as possible, working with government and other partners
- Policy 4.3.2 The Mayor will encourage the take up of ultra low and zero emission technologies to make sure London's entire transport system is zero emission by 2050 to further reduce levels of pollution and achieve WHO air quality guidelines
- Policy 4.3.3 Phase out the use of fossil fuels to heat, cool and maintain London's buildings, homes and urban spaces, and reduce the impact of building emissions on air quality
- Policy 4.3.4 Work to reduce exposure to indoor air pollutants in the home, schools, workplace and other enclosed spaces"

A1.4 While the policies targeting transport sources are significant, there are less obvious ones that will also require significant change. In particular, the aim to phase out fossil-fuels from building heating and cooling and from NRMM will demand a dramatic transition.

Low Emission Zone (LEZ)

A1.5 The LEZ was implemented as a key measure to improve air quality in Greater London. It entails charges for vehicles entering Greater London not meeting certain emissions criteria, and affects diesel-engine lorries, buses, coaches, large vans, minibuses and other specialist vehicles derived from lorries and vans. Since 1 March 2021, a standard of Euro VI has applied for HGVs, buses and coaches, while a standard of Euro 3 has applied for large vans, minibuses and other specialist diesel vehicles since 2012.

Ultra Low Emission Zone (ULEZ)

A1.6 London's Ultra-Low Emission Zone (ULEZ), originally covering the congestion charge zone, came into force in April 2019, and was expanded outward to the North and South Circular Roads in October 2021. The ULEZ was expanded again to cover all London Boroughs (excluding the M25) at the end of August 2023. The ULEZ currently operates 24 hours a day, 7 days a week. All cars, motorcycles, vans and minibuses are required to meet exhaust emission standards (ULEZ standards) or pay an additional daily charge to travel within the zone. The ULEZ standards are Euro 3 for motorcycles, Euro 4 for petrol cars, vans and minibuses and Euro 6 for diesel cars, vans and minibuses. The ULEZ does not include any requirements relating to heavy vehicle (HGV, coach and bus) emissions, as these are addressed by the amendments to the LEZ described in Paragraph A1.5.

Other Measures

A1.7 Since 2018, all taxis presented for licencing for the first time had to be zero emission capable (ZEC). This means they must be able to travel a certain distance in a mode which produces no air pollutants, and all private hire vehicles (PHVs) presented for licensing for the first time had to meet Euro 6 emissions standards. Since January 2020, all newly manufactured PHVs presented for licensing for the first time had to be ZEC (with a minimum zero emission range of 10 miles). The Mayor's aim is that the entire taxi and PHV fleet will be made up of ZEC vehicles by 2033.

A1.8 The Mayor has also proposed to make sure that TfL leads by example by cleaning up its bus fleet, implementing the following measures:

- TfL will procure only hybrid or zero emission double-decker buses from 2018;
- a commitment to providing 3,100 double decker hybrid buses by 2019 and 300 zero emission single-deck buses in central London by 2020;
- introducing 12 Low Emission Bus Zones by 2020;
- investing £50m in Bus Priority Schemes across London to reduce engine idling; and
- retrofitting older buses to reduce emissions (selective catalytic reduction (SCR) technology has already been fitted to 1,800 buses, cutting their NOx emissions by around 88%).

A2 Construction Dust Assessment Procedure

A2.1 The criteria developed by IAQM (2024), upon which the GLA's guidance is based, divide the activities on construction sites into four types to reflect their different potential impacts. These are:

- demolition;
- earthworks;
- construction; and
- trackout.

A2.2 The assessment procedure includes the four steps summarised below:

STEP 1: Screen the Need for a Detailed Assessment

A2.3 An assessment is required where there is a human receptor within 250 m of the boundary of the site and/or within 50 m of the route(s) used by construction vehicles on the public highway, up to 250 m from the site entrance(s), or where there is an ecological receptor within 50 m of the boundary of the site and/or within 50 m of the route(s) used by construction vehicles on the public highway, up to 250 m from the site entrance(s).

A2.4 Where the need for a more detailed assessment is screened out, it can be concluded that the level of risk is negligible and that any effects will be 'not significant'. No mitigation measures beyond those required by legislation will be required.

STEP 2: Assess the Risk of Dust Impacts

A2.5 A site is allocated to a risk category based on two factors:

- the scale and nature of the works, which determines the potential dust emission magnitude (Step 2A); and
- the sensitivity of the area to dust effects (Step 2B).

A2.6 These two factors are combined in Step 2C, which is to determine the risk of dust impacts with no mitigation applied. The risk categories assigned to the site may be different for each of the four potential sources of dust (demolition, earthworks, construction and trackout).

Step 2A – Define the Potential Dust Emission Magnitude

A2.7 Dust emission magnitude is defined as either 'Small', 'Medium', or 'Large'. The IAQM guidance explains that this classification should be based on professional judgement, but provides the examples in Table A2-1.

Table A2-1: Examples of How the Dust Emission Magnitude Class May be Defined

Class	Examples
Demolition	
Large	Total building volume >75,000 m^3, potentially dusty construction material (e.g. concrete), on site crushing and screening, demolition activities >12 m above ground level

Class	Examples
Medium	Total building volume 12,000 m^3 – 75,000 m^3, potentially dusty construction material, demolition activities 6-12 m above ground level
Small	Total building volume <12,000 m^3, construction material with low potential for dust release (e.g. metal cladding or timber), demolition activities <6 m above ground, demolition during wetter months
Earthworks	
Large	Total site area >110,000 m^2, potentially dusty soil type (e.g. clay, which will be prone to suspension when dry to due small particle size), >10 heavy earth moving vehicles active at any one time, formation of bunds >6 m in height.
Medium	Total site area 18,000 m^2 – 110,000 m^2, moderately dusty soil type (e.g. silt), 5-10 heavy earth moving vehicles active at any one time, formation of bunds 3 m – 6 m in height.
Small	Total site area <18,000 m^2, soil type with large grain size (e.g. sand), <5 heavy earth moving vehicles active at any one time, formation of bunds <3 m in height.
Construction	
Large	Total building volume >75,000 m^3, on site concrete batching; sandblasting
Medium	Total building volume 12,000 m^3 – 75,000 m^3, potentially dusty construction material (e.g. concrete), on site concrete batching
Small	Total building volume <12,000 m^3, construction material with low potential for dust release (e.g. metal cladding or timber)
Trackout a	
Large	>50 HDV (>3.5t) outward movements in any one day, potentially dusty surface material (e.g. high clay content), unpaved road length >100 m
Medium	20-50 HDV (>3.5t) outward movements in any one day, moderately dusty surface material (e.g. high clay content), unpaved road length 50 m – 100 m
Small	<20 HDV (>3.5t) outward movements in any one day, surface material with low potential for dust release, unpaved road length <50 m

[a] These numbers are for vehicles that leave the site after moving over unpaved ground.

Step 2B – Define the Sensitivity of the Area

A2.8 The sensitivity of the area is defined taking account of a number of factors:

- the specific sensitivities of receptors in the area;
- the proximity and number of those receptors;
- in the case of PM_{10}, the local background concentration; and
- site-specific factors, such as whether there are natural shelters to reduce the risk of wind-blown dust.

A2.9 The first requirement is to determine the specific sensitivities of local receptors. The IAQM guidance recommends that this should be based on professional judgment, taking account of the principles in Table A2-2. These receptor sensitivities are then used in the matrices set out in Table A2-3, Table A2-4,

and Table A2-5 to determine the sensitivity of the area. Finally, the sensitivity of the area is considered in relation to any other site-specific factors, such as the presence of natural shelters etc., and any required adjustments to the defined sensitivities are made.

Step 2C – Define the Risk of Impacts

A2.10 The dust emission magnitude determined at Step 2A is combined with the sensitivity of the area determined at Step 2B to determine the risk of impacts with no mitigation applied. The IAQM guidance provides the matrix in Table A2-6 as a method of assigning the level of risk for each activity.

STEP 3: Determine Site-specific Mitigation Requirements

A2.11 The IAQM guidance provides a suite of recommended and desirable mitigation measures which are organised according to whether the outcome of Step 2 indicates a low, medium, or high risk. The list provided in the IAQM guidance has been used as the basis for the requirements set out in Appendix A5.

STEP 4: Determine Significant Effects

A2.12 The IAQM guidance does not provide a method for assessing the significance of effects before mitigation, and advises that pre-mitigation significance should not be determined. With appropriate mitigation in place, the IAQM guidance is clear that the residual effect will normally be 'not significant'.

A2.13 The IAQM guidance recognises that, even with a rigorous dust management plan in place, it is not possible to guarantee that the dust mitigation measures will be effective all of the time, for instance under adverse weather conditions. The local community may therefore experience occasional, short-term dust annoyance. The scale of this would not normally be considered sufficient to change the conclusion that the effects will be 'not significant'.

Table A2-2: Principles to be Used When Defining Receptor Sensitivities

Class	Principles	Examples
Sensitivities of People to Dust Soiling Effects		
High	users can reasonably expect enjoyment of a high level of amenity; or the appearance, aesthetics or value of their property would be diminished by soiling; and the people or property would reasonably be expected to be present continuously, or at least regularly for extended periods, as part of the normal pattern of use of the land	dwellings, museum and other culturally important collections, medium and long term car parks and car showrooms
Medium	users would expect to enjoy a reasonable level of amenity, but would not reasonably expect to enjoy the same level of amenity as in their home; or the appearance, aesthetics or value of their property could be diminished by soiling; or the people or property wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land	parks and places of work
Low	the enjoyment of amenity would not reasonably be expected; or there is property that would not reasonably be expected to be diminished in appearance, aesthetics or value by soiling; or there is transient exposure, where the people or property would reasonably be expected to be present only for limited periods of time as part of the normal pattern of use of the land	playing fields, farmland (unless commercially-sensitive horticulture), footpaths, short term car parks and roads
Sensitivities of People to the Health Effects of PM_{10}		
High	locations where members of the public may be exposed for eight hours or more in a day	residential properties, hospitals, schools and residential care homes
Medium	locations where the people exposed are workers, and where individuals may be exposed for eight hours or more in a day.	may include office and shop workers, but will generally not include workers occupationally exposed to PM_{10}
Low	locations where human exposure is transient	public footpaths, playing fields, parks and shopping streets
Sensitivities of Receptors to Ecological Effects		
High	locations with an international or national designation and the designated features may be affected by dust soiling; or locations where there is a community of a particularly dust sensitive species	Special Areas of Conservation with dust sensitive features
Medium	locations where there is a particularly important plant species, where its dust sensitivity is uncertain or unknown; or	Sites of Special Scientific Interest with dust sensitive features

Class	Principles	Examples
	locations with a national designation where the features may be affected by dust deposition	
Low	locations with a local designation where the features may be affected by dust deposition	Local Nature Reserves with dust sensitive features

Table A2-3: Sensitivity of the Area to Dust Soiling Effects on People and Property[7]

Receptor Sensitivity	Number of Receptors	Distance from the Source (m)			
		<20	<50	<100	<250
High	>100	High	High	Medium	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

Table A2-4: Sensitivity of the Area to Human Health Effects[7]

Receptor Sensitivity	Annual Mean PM_{10}	Number of Receptors	Distance from the Source (m)			
			<20	<50	<100	<250
High	>32 µg/m^3	>100	High	High	High	Medium
		10-100	High	High	Medium	Low
		1-10	High	Medium	Low	Low
	28-32 µg/m^3	>100	High	High	Medium	Low
		10-100	High	Medium	Low	Low
		1-10	High	Medium	Low	Low
	24-28 µg/m^3	>100	High	Medium	Low	Low
		10-100	High	Medium	Low	Low
		1-10	Medium	Low	Low	Low
	<24 µg/m^3	>100	Medium	Low	Low	Low
		10-100	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Medium	>32 µg/m^3	>10	High	Medium	Low	Low

[7] For demolition, earthworks and construction, distances are taken either from the dust source or from the boundary of the site. For trackout, distances are measured from the sides of roads used by construction traffic. Without mitigation, trackout may occur from roads up to 250 m, as measured from the site exit. The impact declines with distance from the site, and it is only necessary to consider trackout impacts up to 50 m from the edge of the road.

Receptor Sensitivity	Annual Mean PM_{10}	Number of Receptors	Distance from the Source (m)			
			<20	<50	<100	<250
		1-10	Medium	Low	Low	Low
	28-32 µg/m^3	>10	Medium	Low	Low	Low
		1-10	Low	Low	Low	Low
	24-28 µg/m^3	>10	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
	<24 µg/m^3	>10	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Low	-	>1	Low	Low	Low	Low

Table A2-5: Sensitivity of the Area to Ecological Effects[7]

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

Table A2-6: Defining the Risk of Dust Impacts

Sensitivity of the Area	Dust Emission Magnitude		
	Large	Medium	Small
Demolition			
High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Low	Medium Risk	Low Risk	Negligible
Earthworks			
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible
Construction			
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible
Trackout			

Sensitivity of the Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

A3 EPUK & IAQM Planning for Air Quality Guidance

A3.1 The guidance issued by EPUK and IAQM (Moorcroft and Barrowcliffe et al, 2017) is comprehensive in its explanation of the place of air quality in the planning regime. Key sections of the guidance not already mentioned above are set out below.

Air Quality as a Material Consideration

"Any air quality issue that relates to land use and its development is capable of being a material planning consideration. The weight, however, given to air quality in making a planning application decision, in addition to the policies in the local plan, will depend on such factors as:

- the severity of the impacts on air quality;
- the air quality in the area surrounding the proposed development;
- the likely use of the development, i.e. the length of time people are likely to be exposed at that location; and
- the positive benefits provided through other material considerations".

Recommended Best Practice

A3.2 The guidance goes into detail on how all development proposals can and should adopt good design principles that reduce emissions and contribute to better air quality management. It states:

"The basic concept is that good practice to reduce emissions and exposure is incorporated into all developments at the outset, at a scale commensurate with the emissions".

A3.3 The guidance sets out a number of good practice principles that should be applied to all developments that:

- include 10 or more dwellings;
- where the number of dwellings is not known, residential development is carried out on a site of more than 0.5 ha;
- provide more than 1,000 m^2 of commercial floorspace;
- are carried out on land of 1 ha or more.

A3.4 The good practice principles are that:

- New developments should not contravene the Council's Air Quality Action Plan, or render any of the measures unworkable;
- Wherever possible, new developments should not create a new "street canyon", as this inhibits pollution dispersion;
- Delivering sustainable development should be the key theme of any application;
- New development should be designed to minimise public exposure to pollution sources, e.g. by locating habitable rooms away from busy roads;

- The provision of at least 1 Electric Vehicle (EV) "rapid charge" point per 10 residential dwellings and/or 1000 m^2 of commercial floorspace. Where on-site parking is provided for residential dwellings, EV charging points for each parking space should be made available;
- Where development generates significant additional traffic, provision of a detailed travel plan (with provision to measure its implementation and effect) which sets out measures to encourage sustainable means of transport (public, cycling and walking) via subsidised or free-ticketing, improved links to bus stops, improved infrastructure and layouts to improve accessibility and safety;
- All gas-fired boilers to meet a minimum standard of <40 mgNOx/kWh;
- Where emissions are likely to impact on an AQMA, all gas-fired CHP plant to meet a minimum emissions standard of:
  - Spark ignition engine: 250 mgNOx/Nm^3;
  - Compression ignition engine: 400 mgNOx/Nm^3;
  - Gas turbine: 50 mgNOx/Nm^3.
- A presumption should be to use natural gas-fired installations. Where biomass is proposed within an urban area it is to meet minimum emissions standards of 275 mgNOx/Nm^3 and 25 mgPM/Nm^3.

A3.5 The guidance also outlines that offsetting emissions might be used as a mitigation measure for a proposed development. However, it states that:

"It is important that obligations to include offsetting are proportional to the nature and scale of development proposed and the level of concern about air quality; such offsetting can be based on a quantification of the emissions associated with the development. These emissions can be assigned a value, based on the "damage cost approach" used by Defra, and then applied as an indicator of the level of offsetting required, or as a financial obligation on the developer. Unless some form of benchmarking is applied, it is impractical to include building emissions in this approach, but if the boiler and CHP emissions are consistent with the standards as described above then this is not essential".

A3.6 The guidance offers a widely used approach for quantifying costs associated with pollutant emissions from transport. It also outlines the following typical measures that may be considered to offset emissions, stating that measures to offset emissions may also be applied as post assessment mitigation:

- Support and promotion of car clubs;
- Contributions to low emission vehicle refuelling infrastructure;
- Provision of incentives for the uptake of low emission vehicles;
- Financial support to low emission public transport options; and
- Improvements to cycling and walking infrastructures.

Screening

Impacts of the Local Area on the Development

"There may be a requirement to carry out an air quality assessment for the impacts of the local area's emissions on the proposed development itself, to assess the exposure that residents or users might experience. This will need to be a matter of judgement and should take into account:

- the background and future baseline air quality and whether this will be likely to approach or exceed the values set by air quality objectives;
- the presence and location of Air Quality Management Areas as an indicator of local hotspots where the air quality objectives may be exceeded;
- the presence of a heavily trafficked road, with emissions that could give rise to sufficiently high concentrations of pollutants (in particular nitrogen dioxide), that would cause unacceptably high exposure for users of the new development; and
- the presence of a source of odour and/or dust that may affect amenity for future occupants of the development".

Impacts of the Development on the Local Area

A3.7 The guidance sets out two stages of screening criteria that can be used to identify whether a detailed air quality assessment is required, in terms of the impact of the development on the local area. The first stage is that you should proceed to the second stage if any of the following apply:

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

A3.8 Coupled with any of the following:

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

A3.9 If the above do not apply then the development can be screened out as not requiring a detailed air quality assessment of the impact of the development on the local area. If they do apply then you proceed to stage 2, which sets out indicative criteria for requiring an air quality assessment. The stage 2 criteria relating to vehicle emissions are set out below:

- the development will lead to a change in LDV flows of more than 100 AADT within or adjacent to an AQMA or more than 500 AADT elsewhere;
- the development will lead to a change in HDV flows of more than 25 AADT within or adjacent to an AQMA or more than 100 AADT elsewhere;
- the development will lead to a realigning of roads (i.e. changing the proximity of receptors to traffic lanes) where the change is 5m or more and the road is within an AQMA;
- the development will introduce a new junction or remove an existing junction near to relevant receptors, and the junction will cause traffic to significantly change vehicle acceleration/deceleration, e.g. traffic lights or roundabouts;

- the development will introduce or change a bus station where bus flows will change by more than 25 AADT within or adjacent to an AQMA or more than 100 AADT elsewhere; and
- the development will have an underground car park with more than 100 movements per day (total in and out) with an extraction system that exhausts within 20 m of a relevant receptor.

A3.10 The criteria are more stringent where the traffic impacts may arise on roads where concentrations are close to the objective. The presence of an AQMA is taken to indicate the possibility of being close to the objective, but where whole authority AQMAs are present and it is known that the affected roads have concentrations below 90% of the objective, the less stringent criteria are likely to be more appropriate.

A3.11 On combustion processes (including standby emergency generators and shipping) where there is a risk of impacts at relevant receptors, the guidance states that:

"Typically, any combustion plant where the single or combined NOx emission rate is less than 5 mg/sec is unlikely to give rise to impacts, provided that the emissions are released from a vent or stack in a location and at a height that provides adequate dispersion. As a guide, the 5 mg/s criterion equates to a 450 kW ultra-low NOx gas boiler or a 30kW CHP unit operating at <95mg/Nm^3.

In situations where the emissions are released close to buildings with relevant receptors, or where the dispersion of the plume may be adversely affected by the size and/or height of adjacent buildings (including situations where the stack height is lower than the receptor) then consideration will need to be given to potential impacts at much lower emission rates.

Conversely, where existing nitrogen dioxide concentrations are low, and where the dispersion conditions are favourable, a much higher emission rate may be acceptable".

A3.12 Should none of the above apply then the development can be screened out as not requiring a detailed air quality assessment of the impact of the development on the local area, provided that professional judgement is applied; the guidance importantly states the following:

"The criteria provided are precautionary and should be treated as indicative. They are intended to function as a sensitive 'trigger' for initiating an assessment in cases where there is a possibility of significant effects arising on local air quality. This possibility will, self-evidently, not be realised in many cases. The criteria should not be applied rigidly; in some instances, it may be appropriate to amend them on the basis of professional judgement, bearing in mind that the objective is to identify situations where there is a possibility of a significant effect on local air quality".

A3.13 Even if a development cannot be screened out, the guidance is clear that a detailed assessment is not necessarily required:

"The use of a Simple Assessment may be appropriate, where it will clearly suffice for the purposes of reaching a conclusion on the significance of effects on local air quality. The principle underlying this guidance is that any assessment should provide enough 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 it can provide this evidence. Similarly, it may be possible to conduct a quantitative assessment that does not require the use of a dispersion model run on a computer".

A3.14 The guidance also outlines what the content of the air quality assessment should include, and this has been adhered to in the production of this report.

Assessment of Significance

A3.15 There is no official guidance in the UK in relation to development control on how to describe the nature of air quality impacts, nor how to assess their significance. The approach within the EPUK/IAQM guidance has, therefore, been used in this assessment. This approach involves a two stage process:

- a qualitative or quantitative description of the impacts on local air quality arising from the development; and
- a judgement on the overall significance of the effects of any impacts.

A3.16 The guidance recommends that the assessment of significance should be based on professional judgement, with the overall air quality impact of the development described as either 'significant' or 'not significant'. In drawing this conclusion, the following factors should be taken into account:

- the existing and future air quality in the absence of the development;
- the extent of current and future population exposure to the impacts;
- the influence and validity of any assumptions adopted when undertaking the prediction of impacts;
- the potential for cumulative impacts and, in such circumstances, several impacts that are described as 'slight' individually could, taken together, be regarded as having a significant effect for the purposes of air quality management in an area, especially where it is proving difficult to reduce concentrations of a pollutant. Conversely, a 'moderate' or 'substantial' impact may not have a significant effect if it is confined to a very small area and where it is not obviously the cause of harm to human health; and
- the judgement on significance relates to the consequences of the impacts; will they have an effect on human health that could be considered as significant? In the majority of cases, the impacts from an individual development will be insufficiently large to result in measurable changes in health outcomes that could be regarded as significant by health care professionals.

A3.17 The guidance is clear that other factors may be relevant in individual cases. It also states that the effect on the residents of any new development where the air quality is such that an air quality objective is not met will be judged as significant. For people working at new developments in this situation, the same will not be true as occupational exposure standards are different, although any assessment may wish to draw attention to the undesirability of the exposure.

A3.18 A judgement of the significance should be made by a competent professional who is suitably qualified. A summary of the professional experience of the staff contributing to this assessment is provided in Appendix A4.

A4 Professional Experience

Martin Peirce, BSc (Hons), MSc, MIEncSci, MIAQM

Mr Peirce is an Associate Director with AQC and has some thirty years' experience in environmental modelling and assessment, most relating to air quality and carbon and greenhouse gases (GHGs). He has extensive experience in the calculation of emissions to air and compiling emission inventories, for both local air quality assessments and carbon footprinting. For air quality, he also has extensive expertise in modelling the atmospheric dispersion of pollutants for comparison against regulatory limits and for assessment of health and environmental impacts. He has prepared assessments in support of Environmental Impact Assessments (EIA), permit applications and planning applications (under both Town and Country Planning Act (TCPA) and Development Consent Order (DCO) regimes), and has acted as expert witness. He has particular experience in modelling aviation and transport sources, non-road mobile machinery, construction and industrial sources.

Julia Burnell, MEnvSci (Hons) MIEnvSc MIAQM

Miss Burnell is a Principal Consultant with AQC with over nine years' experience in the field of air quality. She has experience of undertaking a range of air quality assessments for power, transportation, and mixed-use development projects both in the UK and internationally. She is also experienced at preparing environmental permit applications for medium combustion plant/specified generator sites and has commissioned and maintained numerous ambient air quality monitoring surveys. Prior to her work with AQC, Julia completed an MEnvSci (Hons) in Environmental Science (four-year integrated master's). She is a Member of both the Institute of Air Quality Management and the Institution of Environmental Sciences.

Rosie Watts, BSc (Hons) MSc PhD MIEnvSc

Dr Watts joined AQC in 2024 as an Assistant Consultant. Following a degree in Physical Geography, Rosie completed a PhD studying wild and prescribed fires. This was an ESRC-funded, collaborative project with industry stakeholders, focusing on perceptions towards fires as a risk and the use of prescribed fires as a mitigation tool. Rosie brings with her a background in climate change and its related risks, where throughout her academic career, she developed an interest in air quality, including in relation to wildfire events. She is currently gaining experience undertaking a variety of air quality assessment, ranging in scope from standalone assessments to contributions to EIA developments. As well as including a range of assessment subjects and techniques, including the use of ADMS-Roads and ADMS-6, and completing HRAs, CDRAs and BREEAM Indoor Air Quality Plans.

A5 Construction Mitigation

A5.1 Table A5-1 presents a set of best-practice measures from the GLA guidance (GLA, 2014b) that should be incorporated into the specification for the works. These measures should be written into a Dust Management Plan. Some of the measures may only be necessary during specific phases of work, or during activities with a high potential to produce dust, and the list should be refined and expanded upon in liaison with the construction contractor when producing the Dust Management Plan.

Table A5-1: Best-Practice Mitigation Measures Recommended for the Works

Measure	Desirable	Highly Recommended
Site Management		
Develop and implement a stakeholder communications plan that includes community engagement before work commences on site		✓
Develop a Dust Management Plan (DMP)		✓
Display the name and contact details of person(s) accountable for air quality pollutant emissions and dust issues on the site boundary		✓
Display the head or regional office contact information		✓
Record and respond to all dust and air quality pollutant emissions complaints		✓
Make a complaints log available to the local authority when asked		✓
Carry out regular site inspections to monitor compliance with air quality and dust control procedures, record inspection results, and make an inspection log available to the Local Authority when asked		✓
Increase the frequency of site inspections by those accountable for dust and air quality pollutant emissions issues when activities with a high potential to produce dust and emissions are being carried out and during prolonged dry or windy conditions		✓
Record any exceptional incidents that cause dust and air quality pollutant emissions, either on or off the site, and ensure that the action taken to resolve the situation is recorded in the log book		✓
Preparing and Maintaining the Site		
Plan the site layout so that machinery and dust-causing activities are located away from receptors, as far as is possible		✓
Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site		✓

Measure	Desirable	Highly Recommended
Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period		✓
Install green walls, screens or other green infrastructure to minimise the impact of dust and pollution	✓	
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 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		✓
Carry out regular dust soiling checks of buildings within 100 m of site boundary and provide cleaning if necessary	✓	
Put in place real-time dust and air quality pollutant monitors across the site and ensure they are checked regularly		✓
Agree monitoring locations with the Local Authority		✓
Where possible, commence baseline monitoring at least three months before work begins		✓
Operating Vehicle/Machinery and Sustainable Travel		
Ensure all on-road vehicles comply with the requirements of the London LEZ (and ULEZ)		✓
Ensure all Non-road Mobile Machinery (NRMM) comply with London's NRMM emission standards. NRMM used on any site within Greater London is required to meet Stage IV of EU Directive 97/68/EC (The European Parliament and the Council of the European Union, 1997) and its subsequent amendments as a minimum. From January 2030 the stage V standard will apply, and from January 2040 only zero emission machinery will be allowed.		✓
Ensure all vehicles switch off engines when stationary – no idling vehicles		✓
Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery-powered equipment where practicable		✓
Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on un-surfaced haul roads and work areas	✓	
Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials		✓

Measure	Desirable	Highly Recommended
Implement a Travel Plan that supports and encourages sustainable staff travel (public transport, cycling, walking, and car-sharing)		✓
Operations		
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, 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		✓
Waste Management		
Reuse and recycle waste to reduce dust from waste materials		✓
Avoid bonfires and burning of waste materials		✓
Measures Specific to Demolition		
Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust)	✓	
Ensure water suppression is used during demolition operations.		✓
Avoid explosive blasting, using appropriate manual or mechanical alternatives		✓
Bag and remove any biological debris or damp down such material before demolition		✓
Measures Specific to Earthworks		
Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable	✓	
Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable	✓	
Only remove the cover from small areas during work, not all at once	✓	
Measures Specific to Construction		

Measure	Desirable	Highly Recommended
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	✓	
Measures Specific to Trackout		
Regularly use a water-assisted dust sweeper on the access and local roads, as necessary, to remove any material tracked out of the site		✓
Avoid dry sweeping of large areas		✓
Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport		✓
Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems or mobile water bowsers, and regularly cleaned;		✓
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;		✓
Apply dust suppressants to locations where a large volume of vehicles enter and exit the construction site	✓	

London • Bristol • Warrington • Brighton • Brussels