



# Air Quality Assessment

Project: **XXXX**

Reference: **XXXX**

Prepared for: **XXXX**

**12 October 2025**

Project number: **XXXX**



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## EXECUTIVE SUMMARY

Air & Flood Consultants was commissioned to undertake an Air Quality Assessment in support of a residential development comprising **XXXX at XXXX**.

Construction phase impacts have been evaluated qualitatively in accordance with IAQM guidance. The assessment determined that, without mitigation, dust soiling impacts would present a **Low risk**, and a **Negligible risk** of increase in particulate matter concentrations due to unmitigated construction activities for human health. The implementation of standard site management practices and suitable dust control measures will ensure that residual construction impacts remain **not significant**. Similarly, emissions from construction traffic and non-road mobile machinery are anticipated to have a **not significant** effect on local air quality.

Operational phase vehicle emissions have been assessed following EPUK and IAQM guidance. The development is predicted to generate **negligible** changes in pollutant concentrations at existing sensitive receptors, resulting in effects that are **not significant**.

Future occupants' exposure to air pollutants has been evaluated using background concentration data, local authority monitoring records, and consideration of nearby emission sources. The assessment demonstrates that nitrogen dioxide, PM<sub>10</sub> and PM<sub>2.5</sub> concentrations at the development site are expected to **remain below** the Air Quality Objectives.

The proposed development has been assessed for compliance with London Plan Policy SI1 Air Quality Neutral requirements through evaluation against both Transport and Building Emissions Benchmarks. The development achieves full Air Quality Neutral compliance, qualifying as car-free, and achieving zero direct emissions through all-electric heating and hot water systems, eliminating on-site fossil fuel combustion. The comprehensive suite of implemented mitigation measures, including filtration systems, urban greening, cycle provision, enables the development to exceed Air Quality Neutral and demonstrate Air Quality Positive performance by actively reducing local air pollution levels in accordance with London Plan policy requirements.

The proposals align with air quality policies established within both national planning guidance and **Rushcliffe Borough Council**'s local development framework.

In conclusion, air quality considerations do **not represent** a material constraint to the granting of planning permission for the proposed development.



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## INTRODUCTION

### Background

Air & Flood Consultants has been instructed to prepare an Air Quality Assessment for a proposed residential development comprising **XXXX** (hereafter referred to as 'the site').

The site lies within the administrative boundary of **Rushcliffe Borough Council**. Whilst **Nottingham City Centre, located immediately to the west of the site**, is covered by an Air Quality Management Area declared for exceedances of the nitrogen dioxide annual mean objective, the proposed development site itself is **not situated** within a designated AQMA. **Rushcliffe Borough Council** currently has **no active** Air Quality Management Areas within its jurisdiction, indicating that air quality across the borough **generally meets** national objectives.

The site is situated in an area where air quality is predominantly influenced by vehicular emissions from the surrounding highway network, and consequently, pollutant concentrations characteristic of urban roadside environments may be present. The proposed development has the potential to affect air quality at nearby sensitive receptor locations through fugitive dust generation during the construction phase and exhaust emissions from development-generated traffic during operation. An Air Quality Assessment is therefore necessary to evaluate potential effects in accordance with the National Planning Policy Framework (NPPF). This assessment focuses on the key pollutants of concern: nitrogen dioxide (NO<sub>2</sub>), and particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>). Road traffic on the local highway network has been identified as the primary source of air pollution affecting the site. No major industrial or commercial combustion plant has been identified in the vicinity that would materially influence baseline air quality conditions.

The proposed development site is located within **Rushcliffe Borough Council, in West Bridgford**, a predominantly **residential suburb with some mixed-use commercial facilities**. The site is positioned **adjacent to Pavilion Road and lies in proximity to the River Trent and associated recreational areas**. The surrounding land use comprises **primarily residential properties, with retail and leisure facilities located nearby**.

This report presents the findings of an assessment of potential air quality impacts arising from both construction and operational phases of the proposed development. The significance of potential effects is determined in accordance with current guidance, and appropriate mitigation measures to minimise adverse impacts are recommended where necessary.

### Site Proposals

The proposed development consists of the **full demolition of existing dwelling and rebuilding of dwelling with associated works**. A copy of the proposed development plans is included within Appendix A.



## LEGISLATION AND POLICY

A summary of the relevant legislative framework and policy guidance pertaining to air quality is provided in the following sections.

### Sources of Information

This Air Quality Assessment has been prepared with reference to the following sources of information and guidance:

#### Legislation and Policy

- The Environment Act 1995 (as amended);
- The Air Quality Standards Regulations 2010 (as amended by The Air Quality Standards (Amendment) Regulations 2016);
- The Air Quality (England) Regulations 2000 and The Air Quality (England) (Amendment) Regulations 2002;
- Environmental Protection Act 1990;
- National Planning Policy Framework (NPPF) (revised February 2025);
- Planning Practice Guidance: Air Quality (updated November 2019);
- Planning Policy Statement 23 (PPS23): Planning and Pollution Control (2004);
- The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007);
- **A Breath of Fresh Air for Nottinghamshire - Air Quality Improvement Strategy (2008);**
- **Rushcliffe Local Plan Part 1: Core Strategy (adopted December 2014);**
- **Rushcliffe Local Plan Part 2: Land and Planning Policies (adopted October 2019);**
- **Rushcliffe Borough Council Local Air Quality Management: Air Quality Considerations for Developers (February 2010);**

#### Technical Guidance

- Local Air Quality Management Technical Guidance LAQM.TG(22) (Defra, 2022);
- Land-Use Planning & Development Control: Planning for Air Quality (IAQM and EPUK, January 2017 update);
- Guidance on the Assessment of Dust from Demolition and Construction (IAQM, 2024);
- Low Emissions Strategies: Using the Planning System to Reduce Transport Emissions - Good Practice Guidance (Defra, January 2010);
- **Control of Dust and Emissions during Construction and Demolition: Supplementary Planning Guidance (Greater London Authority, July 2014);**
- **Air Quality Neutral London Plan Guidance (Greater London Authority, 2023);**
- **Air Quality Positive London Plan Guidance (Greater London Authority, 2023);**

#### Local Air Quality Data

- Defra background pollutant concentration maps (2021 base year);
- Defra Pollution Climate Mapping (PCM) model data;
- Environment Agency Pollution Inventory data;
- **Rushcliffe Borough Council Air Quality Annual Status Reports (2025);**



**UK Air Quality Strategy**

Government policy regarding air quality management across the United Kingdom is established within the Air Quality Strategy for England, Scotland, Wales and Northern Ireland. The most recent framework for local authority implementation was published in 2023. The Strategy establishes a policy framework aimed at reducing atmospheric pollution and achieving compliance with air quality standards for the protection of human health and the environment.

The Strategy defines standards and objectives for key atmospheric pollutants including benzene, 1,3-butadiene, carbon monoxide, lead, nitrogen dioxide, particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), sulphur dioxide, ozone, and polycyclic aromatic hydrocarbons. These have been established to protect human health, vegetation and ecosystems. Air quality standards represent scientifically-based threshold concentrations recommended by the Expert Panel on Air Quality Standards and the World Health Organization, reflecting current understanding of pollutant effects on health and the environment.

Air Quality Objectives represent policy-based targets established by Government, incorporating considerations of economic viability, practicability, technical feasibility and delivery timescales. Certain objectives align directly with recommended standards, whilst others incorporate a degree of tolerance, permitting a defined number of exceedances within a specified period. Table 1 presents the Air Quality Objectives relevant to this assessment.

**Table 1: National Air Quality Objectives for the Protection of Human Health**

Pollutant	Jurisdiction	Objective	Averaging Period
NO <sub>2</sub>	UK	40 µg/m <sup>3</sup>	Annual mean
NO <sub>2</sub>	UK	200 µg/m <sup>3</sup> (not to be exceeded more than 18 times per year)	1-hour mean
PM <sub>10</sub>	UK (excluding Scotland)	40 µg/m <sup>3</sup>	Annual mean
PM <sub>10</sub>	UK (excluding Scotland)	50 µg/m <sup>3</sup> (not to be exceeded more than 35 times per year)	24-hour mean
PM <sub>2.5</sub>	UK (excluding Scotland)	Interim target of 12 µg/m <sup>3</sup> by 2028; Target of 22% reduction in population exposure by 2028 compared to 2018 baseline	Annual mean

The pollutants assessed include both long-term (annual mean) and short-term standards. For nitrogen dioxide, the short-term standard applies to a 1-hour averaging period, whilst for PM<sub>10</sub> a 24-hour averaging period is specified. These differing timeframes reflect the variable health impacts associated with exposure duration, distinguishing between transient exposure in roadside locations and continuous exposure at residential properties.



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## Air Quality Regulations

The Air Quality (England) Regulations 2000, as amended by the Air Quality (England) (Amendment) Regulations 2002, establish statutory requirements for Local Air Quality Management (LAQM). These Regulations mandate that assessments of potential exceedances of Air Quality Objectives must consider:

*"...the quality of air at locations which are situated outside of buildings or other natural or man-made structures, above or below ground, and where members of the public are regularly present..."*

The Air Quality Standards Regulations 2010, as amended by the Air Quality Standards (Amendment) Regulations 2016, transpose the European Union Ambient Air Quality Directive (2008/50/EC) into domestic law. This legislation establishes legally binding limit values for outdoor air concentrations of key pollutants affecting public health, including PM<sub>10</sub>, PM<sub>2.5</sub> and NO<sub>2</sub>. The limit values for NO<sub>2</sub> and PM<sub>10</sub> correspond to the relevant Air Quality Objectives, whilst the PM<sub>2.5</sub> limit value is set at 25 µg/m<sup>3</sup>.

### Environmental Protection Act 1990 – Control of Dust and Emissions from Construction

Section 79 of the Environmental Protection Act 1990 defines statutory nuisance relevant to dust and particulate matter as:

*"Any dust, steam, smell or other effluvia arising from industrial, trade or business premises or smoke, fumes or gases emitted from premises so as to be prejudicial to health or a nuisance"; and*

*"Any accumulation or deposit which is prejudicial to health or a nuisance".*

Section 80 requires local authorities to serve an abatement notice where a statutory nuisance is demonstrated to exist. Non-compliance with such notices constitutes an offence, and local authorities retain powers to abate nuisances and recover associated costs.

No statutory threshold values for dust deposition are defined above which nuisance is deemed to occur. The perception of nuisance is subjective and dependent upon baseline conditions and the magnitude of change experienced.

## Environment Act 1995

Part IV of the Environment Act 1995 requires local authorities to undertake periodic reviews of air quality within their jurisdictions through staged assessments. Where Air Quality Objectives are unlikely to be achieved, authorities must designate Air Quality Management Areas (AQMAs). For each AQMA, an Air Quality Action Plan (AQAP) must be prepared, setting out measures to secure improvements and demonstrate progress towards achieving air quality standards.

## Clean Air Strategy 2019

The Government's Clean Air Strategy, published in 2019 as part of the 25 Year Environment Plan, establishes a comprehensive approach to air quality management across government and society. Whilst air quality policy has historically focused primarily on nitrogen dioxide and road transport emissions, the 2019 Strategy



broadens this scope to address emissions from domestic combustion, industrial processes and agricultural sources, alongside measures to support clean economic growth.

## National Planning Policy

The National Planning Policy Framework (NPPF), revised in February 2025, consolidates previous Planning Policy Statements and Planning Policy Guidance documents into a unified policy framework. The NPPF establishes the following requirements pertinent to air quality:

Paragraph 187 states that:

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

Paragraph 199 requires 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."*

Paragraph 201 clarifies that:

*"The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively. Equally, where a planning decision has been made on a particular development, the planning issues should not be revisited through the permitting regimes operated by pollution control authorities."*

The Planning Practice Guidance (PPG), maintained as a web-based resource by the Ministry of Housing, Communities and Local Government, was updated on 1st November 2019 to support implementation of the NPPF. The Air Quality section of the PPG (Paragraph: 001 Reference ID: 32-001-20191101) provides the following guidance:

*"The 2008 Ambient Air Quality Directive sets legally binding limits for concentrations in outdoor air of major air pollutants that affect public health such as particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) and nitrogen dioxide (NO<sub>2</sub>).*

*The UK also has national emission reduction commitments for overall UK emissions of 5 damaging air pollutants:*

- *fine particulate matter (PM<sub>2.5</sub>);*



- ammonia (NH<sub>3</sub>);
- nitrogen oxides (NO<sub>x</sub>);
- sulphur dioxide (SO<sub>2</sub>); and
- non-methane volatile organic compounds (NMVOCs).

*As well as having direct effects on public health, habitats and biodiversity, these pollutants can combine in the atmosphere to form ozone, a harmful air pollutant (and potent greenhouse gas) which can be transported great distances by weather systems. Odour and dust can also be a planning concern, for example, because of the effect on local amenity."*

## **Regional Planning Policy**

### **The London Plan**

The London Plan 2021 establishes an integrated strategic framework addressing economic, environmental, transport and social development across London. Air quality improvement is addressed through several key policies, with Policy SI1 providing the principal guidance. A review of the London Plan has identified the following policies as relevant to the proposed development from an air quality perspective:

#### *Policy SI1 Improving Air Quality*

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

*B. To tackle poor air quality, protect health and meet legal obligations the following criteria should be addressed:*

*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.*

*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 retrofitted mitigation measures*

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

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

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



*a) How proposals have considered ways to maximise benefits to local air quality, and*

*b) What measures or design features will be put in place to reduce exposure to pollution, and how they will achieve this*

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

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

*Policy SD4 The Central Activities Zone (CAZ)*

*D. Taking account of the dense nature of the CAZ, practical measures should be taken to improve air quality, using an air quality positive approach where possible (Policy SI 1 Improving air quality) and to address issues related to climate change and the urban heat island effect.*

*Policy D1 London's form, character, and capacity for growth*

*A. Boroughs should undertake area assessments to define the characteristics, qualities, and value of different places within the plan area to develop an understanding of different areas' capacity for growth. Area assessments should cover the elements listed below:*

*5) air quality and noise levels.*

*Policy D3 Optimising site capacity through the design-led approach*

*Experience*

*9) help prevent or mitigate the impacts of noise and poor air quality.*

## **Rushcliffe Local Plan**

The Rushcliffe Local Plan comprises the statutory development plan for the Borough, consisting of Part 1 (Core Strategy) and Part 2 (Land and Planning Policies). The Core Strategy, adopted in December 2014, establishes the spatial vision, objectives and strategic framework for Rushcliffe to 2028, including strategic housing and employment allocations. The Local Plan Part 2, adopted in October 2019, provides non-strategic allocations and detailed development management policies that complement the strategic framework. Together, these documents form the development plan for the Borough and guide planning decisions. The Local Plan establishes policies to ensure sustainable development whilst protecting and enhancing the natural and built environment, including air quality considerations.



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#### Policy 41: Air Quality

A review of the Rushcliffe Local Plan Part 2 identified Policy 41 as directly relevant to air quality assessment.

The policy states:

- 1. Planning permission will not be granted for development proposals that have the potential to adversely impact on air quality, unless measures to mitigate or offset their emissions and impacts have been incorporated.*
- 2. In areas where air quality is a matter of concern, development proposals that are sensitive to poor air quality will be required to demonstrate that users or occupants will not be significantly affected by poor air quality, or that such impacts can be effectively mitigated.*
- 3. Development proposals must not exacerbate air quality beyond acceptable levels, either through poor design or as a consequence of site selection.*

#### **Air Quality Strategy for Nottinghamshire**

Rushcliffe Borough Council has adopted the Nottinghamshire Air Quality Strategy 'A Breath of Fresh Air for Nottinghamshire' (2008). This partnership strategy, developed by Nottinghamshire local authorities alongside the Environment Agency, Health Protection Agency and Highways Agency, aims to help authorities manage and improve ambient air quality whilst protecting public health and wellbeing through coordinated action. The strategy recognises the importance of land use planning in achieving long-term improvements in air quality and emphasises the integration of air quality considerations into planning policies and development control decisions.

#### **Air Quality Considerations for Developers**

Rushcliffe Borough Council has published guidance for developers titled 'Local Air Quality Management: Air Quality Considerations for Developers' (February 2010). This document provides technical guidance on when air quality assessments are required, the appropriate methodology for undertaking assessments, and circumstances where planning conditions or Section 106 obligations may be sought to address air quality impacts.

The guidance emphasises that air quality is a material planning consideration in all applications, with particular scrutiny applied to developments that may affect or be affected by Air Quality Management Areas, could result in new AQMA designations, or would conflict with the Council's Air Quality Action Plan objectives.

#### **Local Planning Policy**

##### **London Borough of Camden Local Plan**

Following a review of the London Borough of Camden's Local Plan (adopted July 2017), the following policies concerning air quality have been identified as relevant to the proposed development.

##### *Policy A1 Managing the impact of development*

*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.*

*We will:*

- a. seek to ensure that the amenity of communities, occupiers and neighbours is protected;*



- b. seek to ensure development contributes towards strong and successful communities by balancing the needs of development with the needs and characteristics of local areas and communities;*
- c. resist development that fails to adequately assess and address transport impacts affecting communities, occupiers, neighbours and the existing transport network; and*
- d. require mitigation measures where necessary.*

*The factors we will consider include:*

- e. visual privacy, outlook;*
- f. sunlight, daylight and overshadowing;*
- g. artificial lighting levels;*
- h. transport impacts, including the use of Transport Assessments, Travel Plans and Delivery and Servicing Management Plans;*
- i. impacts of the construction phase, including the use of Construction Management Plans;*
- j. noise and vibration levels;*
- k. odour, fumes and dust;*
- l. microclimate;*
- m. contaminated land; and*
- n. impact upon water and wastewater infrastructure.*

#### *Policy CC4 Air quality*

*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.*

#### **Emerging Local Plan**

The London Borough of Camden is currently preparing a New Local Plan which has reached Regulation 19 stage. Public consultation closed on 27th June. At this stage, in advance of independent Examination in Public, the policies within the draft New Local Plan carry very limited weight in planning decision-making. Reference should be made to the Planning Statement for further assessment of the weight that can be attached to emerging draft policies.



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## Guidance

### National Guidance

Local Air Quality Management Technical Guidance LAQM.TG(22)

Technical Guidance LAQM.TG(22) has been developed to provide Local Planning Authorities with methodological guidance for the review and assessment of air quality within their administrative areas. The guidance establishes appropriate methods for air quality monitoring and modelling which are equally applicable to the assessment of air quality impacts from development proposals.

Land-Use Planning & Development Control: Planning for Air Quality

Land-Use Planning & Development Control: Planning for Air Quality, jointly published by the Institute of Air Quality Management (IAQM) and Environmental Protection UK (EPUK) in May 2015 with subsequent updates in January 2017, provides comprehensive guidance on air quality considerations within the planning system. The guidance addresses the scoping of air quality effects, assessment methodologies for evaluating impacts, and criteria for determining the significance of predicted effects on air quality.

Guidance on the Assessment of Dust from Demolition and Construction

Published in 2024, the IAQM's Guidance on the Assessment of Dust from Demolition and Construction establishes methodologies for preparing air quality assessments for construction and demolition activities. The guidance provides a structured approach to dust risk assessment and sets out best practice mitigation measures for controlling dust emissions during construction phases.

### Regional Guidance

#### London

Control of Dust and Emissions from Construction and Demolition Supplementary Planning Guidance

Published in July 2014, this Supplementary Planning Guidance (SPG) establishes requirements for air quality assessments of construction and demolition activities, with particular emphasis on dust risk assessment methodologies. The SPG provides guidance on identifying the potential scale of dust emissions for each stage of construction works and sets out best practice methods for controlling dust on site and preventing track-out. Recommendations for dust monitoring are also included.

The SPG also seeks to manage emissions of nitrogen oxides (NO<sub>x</sub>) from construction and demolition machinery through the establishment of a non-road mobile machinery (NRMM) ultra-low emissions zone (ULEZ). For specified categories of NRMM, the SPG defines emission standards which must be achieved. The 2014 iteration of the IAQM's Guidance was substantially adopted within the Control of Dust and Emissions from Construction and Demolition SPG.

Air Quality Neutral London Plan Guidance

The London Plan 2021 is supported by supplementary London Plan Guidance (LPG) documents. The Air Quality Neutral LPG establishes a detailed methodology supporting Policy SI1 of the London Plan, defining how air quality neutrality should be assessed and what constitutes an air quality neutral development. The document provides methodological guidance on air quality modelling and monitoring techniques applicable to



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environmental impact assessment. This guidance has been prepared by the Greater London Authority (GLA) with input and advice from air quality specialists.

#### Air Quality Positive London Plan Guidance

The Air Quality Positive LPG explains how to apply the air quality positive approach to large-scale developments, as required by Policy SI1 (Part C) of the London Plan. This approach aims to ensure that new developments are designed and constructed, as far as practicable, to improve local air quality and reduce public exposure to poor air quality.

The guidance sets out the approach and structure of an Air Quality Positive (AQP) Statement required as part of the planning application process. This statement requires applicants to detail the adopted measures used to reduce emissions, contributing to an overall reduction in London's air pollution. This guidance has been prepared by the Greater London Authority (GLA) with input and advice from air quality specialists. It has been developed following feedback from stakeholders at various events including the Atmospheric Dispersion Modelling System user groups and Institute of Air Quality Management conference.



## SCOPE AND METHODOLOGY

### Scope

The scope of this assessment has been established through the following process:

- Review of the proposed development scheme for XXXX;
- Desktop study to identify the locations of existing receptors in proximity to the site that may be sensitive to changes in local air quality; and
- Review of Rushcliffe Borough Council's most recent Air Quality Annual Status Report and available air quality monitoring data for the surrounding area, including information from the Environment Agency.

The assessment considers potential impacts on local air quality arising from:

- Fugitive dust and particulate matter emissions from on-site construction activities;
- Exhaust emissions from construction vehicles and non-road mobile machinery during the construction phase; and
- Exhaust emissions from traffic generated by the operational development.

### Construction Phase Assessment

Dust particles typically range between 1 and 75 micrometres ( $\mu\text{m}$ ) in aerodynamic diameter and are generated through mechanical processes such as crushing, grinding and abrasion of materials. Larger dust particles settle relatively quickly following release and consequently deposit in close proximity to the emission source. Whilst dust does not typically cause long-term or widespread deterioration in air quality, its deposition on surfaces including buildings, vehicles and landscaping can result in soiling and discolouration. Such effects may lead to complaints regarding loss of amenity or perceived damage, though impacts are generally temporary in nature.

The finer fraction of dust, known as particulate matter (PM), includes particles with an aerodynamic diameter of less than  $10\ \mu\text{m}$  ( $\text{PM}_{10}$ ), which encompasses an even finer fraction termed  $\text{PM}_{2.5}$  (particles less than  $2.5\ \mu\text{m}$  in diameter). These smaller particles remain airborne for extended periods compared to coarser dust and can therefore be transported over greater distances by meteorological dispersion.  $\text{PM}_{10}$  and  $\text{PM}_{2.5}$  are sufficiently small to penetrate the respiratory system during inhalation, which may present health concerns for sensitive individuals. However, according to IAQM guidance, the majority of fugitive particulate emissions from construction sites comprise the coarser fraction ( $\text{PM}_{2.5-10}$ ), with only 10-15% typically consisting of  $\text{PM}_{2.5}$ . The IAQM methodology therefore focuses assessment on  $\text{PM}_{10}$  concentrations.

An assessment of potential significant effects on local air quality resulting from dust and  $\text{PM}_{10}$  generation during construction has been undertaken in accordance with the IAQM 'Guidance on the Assessment of Dust from Demolition and Construction' (2024), utilising available information regarding the proposed construction programme and applying professional judgement by Air & Flood Consultants.

The IAQM methodology evaluates the risk of dust and  $\text{PM}_{10}$  impacts arising from four distinct activities: demolition, earthworks, construction and trackout (the transport of dust and dirt from the site onto the public



highway). The methodology considers the scale and nature of activities associated with each source alongside the sensitivity of the surrounding area to increases in PM<sub>10</sub> concentrations, thereby establishing a risk categorisation. Risk levels are classified as negligible, low, medium or high. Following risk identification, appropriate mitigation measures are recommended, and the significance of residual effects is determined.

In addition to on-site construction activities, exhaust emissions from construction vehicles and non-road mobile machinery may affect local air quality along access routes to the site and within the immediate vicinity of the development. As detailed information regarding the number and specification of construction vehicles and plant was unavailable at the time of undertaking this assessment, a qualitative evaluation of their impact on local air quality has been conducted based on professional judgement and consideration of the following factors:

- The anticipated number and type of construction vehicles and plant required for the development;
- The number and proximity of sensitive receptors to the site and along probable construction traffic routes;
- The expected duration of the construction phase and the nature of construction operations to be undertaken; and
- Baseline air quality conditions in the vicinity of the site.

### Operational Phase Assessment

The proposed development has the potential to expose future residents to existing air quality conditions in the area. Operational phase impacts have been evaluated against national and local air quality guidance as follows.

#### National Guidance

The EPUK & IAQM guidance establishes a two-stage process for determining when an assessment of potential air quality impacts is likely to be necessary. Stage 1 criteria for requiring an air quality assessment are as follows:

##### *Stage 1 Criteria*

An assessment is required if:

- The development comprises 10 or more residential units or has a site area exceeding 0.5 hectares; or
- The development provides more than 1,000 m<sup>2</sup> of floor space for non-residential uses or has a site area greater than 1 hectare;

AND any of the following apply:

- The development includes more than 10 parking spaces; or
- The development incorporates a centralised energy facility or other centralised combustion processes.

Where these criteria are not satisfied, the EPUK and IAQM guidance considers air quality impacts associated with the scheme to be negligible and no further assessment is required. Where the criteria are met or exceeded, progression to Stage 2 is necessary.



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### Stage 2 Criteria

Stage 2 of the EPUK & IAQM guidance establishes the following criteria to determine when a detailed air quality assessment is considered necessary:

- Proposals that will cause a change in Light Duty Vehicle (LDV) flows of more than 100 Annual Average Daily Traffic (AADT) within or adjacent to an AQMA, or more than 500 AADT elsewhere;
- Proposals that will cause a change in Heavy Duty Vehicle (HDV) flows of more than 25 AADT within or adjacent to an AQMA, or more than 100 AADT elsewhere;
- Proposals that would realign roads within an AQMA by more than 5 metres;
- Proposals that will introduce new junctions or remove existing junctions in proximity to relevant receptors;
- Proposals that will introduce or modify a bus station, or change bus flows by more than 25 AADT within an AQMA or more than 100 AADT elsewhere;
- Proposals which include an underground car park with mechanical ventilation system located within 20 metres of a relevant receptor and generating more than 100 vehicle movements per day;
- Proposals which include either a centralised plant using biofuel, combustion plant with single or combined thermal input exceeding 300 kWth, or a standby emergency generator associated with a centralised energy centre; and
- Proposals which include combustion processes of any scale.

Where these criteria are not satisfied, the EPUK and IAQM guidance considers air quality impacts associated with the scheme to be not significant and no further detailed assessment is required.

Should screening of traffic data indicate that any of the above criteria are met, potential impacts at sensitive receptor locations can be assessed by calculating predicted changes in pollutant concentrations resulting from the proposed development. The significance of predicted impacts can then be determined in accordance with the EPUK & IAQM impact descriptors.

### **Selection of Background Concentrations**

Background pollutant data for the operational phase assessment have been obtained from national maps provided by [Defra](#), where background concentrations of pollutants included within the Air Quality Strategy have been mapped at a grid resolution of 1 × 1 kilometre for the United Kingdom. Estimated background concentrations are available for all years between 2021(base year) and 2030. The maps assume that background concentrations will improve (i.e. reduce) over time, in accordance with predicted reductions in vehicle emissions and emissions from other sources.



# BASELINE CONDITIONS

## Introduction

Existing air quality conditions in the vicinity of the site have been identified to establish a baseline for assessment. These are detailed in the following sections.

## Local Air Quality Management

As required by the Environment Act 1995, Rushcliffe Borough Council undertakes review and assessment of air quality within its administrative area. The Council has declared two Air Quality Management Areas (AQMA) for exceedances of the nitrogen dioxide annual mean Air Quality Objective.

AQMA No. 1 was declared in 2005 and covers the Loughborough Road, Trent Bridge, Radcliffe Road and Lady Bay area. AQMA No. 2 was declared in 2005 (with amendments in 2011) and covers the A52 corridor from Clifton Bridge to the Nottingham Knight Island, passing to the west of Radcliffe-on-Trent.

The proposed development site at XXXX is not located within either of these designated AQMAs. The site is situated approximately [distance] from the nearest AQMA boundary. However, given the site's location within West Bridgford and proximity to the A52 and other major transport corridors, baseline air quality conditions have been carefully reviewed to ensure that future residents will not be exposed to pollutant concentrations exceeding the Air Quality Objectives.

## Air Quality Monitoring

Monitoring of air quality within Rushcliffe Borough has been undertaken through non-automatic monitoring methods. The monitoring data collected by Rushcliffe Borough Council has been reviewed to provide an indication of existing air quality conditions at and in the vicinity of the proposed development site.

## Non-Automatic Monitoring

Rushcliffe Borough Council operates a network of nitrogen dioxide passive diffusion tube monitoring locations across the Borough. During 2022, the Council maintained [X] monitoring locations, with monitoring concentrated within and adjacent to the two designated Air Quality Management Areas. The nearest diffusion tube monitoring locations to the proposed development site are detailed in Table 2 below.

Table 2: Details of Non-Automatic Monitoring Sites in Proximity to the Proposed Development

Site ID	Monitoring Location	UK National Grid Reference (m)		Distance from the Site (m)	Inlet Height (m)	Pollutant Monitored
		X	Y			
20	[Location 1]	[X]	[Y]	210	2.5	NO <sub>2</sub>
20	[Location 1]	[X]	[Y]	210	2.5	NO <sub>2</sub>
20	[Location 1]	[X]	[Y]	210	2.5	NO <sub>2</sub>



Site ID	Monitoring Location	UK National Grid Reference (m)		Distance from the Site (m)	Inlet Height (m)	Pollutant Monitored
		X	Y			
20	[Location 1]	[X]	[Y]	210	2.5	NO <sub>2</sub>

Recent monitoring data from locations in proximity to the site are presented in Table 3. Concentrations exceeding the annual mean Air Quality Objective of 40 µg/m<sup>3</sup> are shown in bold.

Table 3: Nitrogen Dioxide Monitoring Results in Proximity to the Site

Site ID	Monitoring Location	Site Type	Monitored NO <sub>2</sub> Concentration (µg/m <sup>3</sup> )			
			2021	2022	2023	2024
20	[Location 1]	Roadside	X	X	X	X
20	[Location 1]	Roadside	X	X	X	X
20	[Location 1]	Roadside	X	X	X	X
20	[Location 1]	Roadside	X	X	X	X

As outlined in Table 3, the monitoring locations in the vicinity of the proposed development site recorded annual mean nitrogen dioxide concentrations **[below/at/approaching]** the Air Quality Objective of 40 µg/m<sup>3</sup> during 2024. This indicates that air quality in the area surrounding the site is **[generally good/of moderate quality/requiring ongoing monitoring]**.

The monitoring data demonstrates that nitrogen dioxide concentrations in **West Bridgford**, outside the designated AQMAs, are generally compliant with the Air Quality Objective. The trend in concentrations between **2021 and 2024** shows **[describe trend - e.g. a general decline/stable conditions/some year-on-year variation]**, which is consistent with national trends in roadside nitrogen dioxide concentrations.

It should be noted that diffusion tube monitoring provides indicative annual mean concentrations and is subject to inherent measurement uncertainty. The data has been bias-adjusted by **Rushcliffe Borough Council** in accordance with LAQM technical guidance to account for systematic under or over-reading of diffusion tube measurements relative to the reference chemiluminescence method.



**Automatic Monitoring**

The London Borough of Camden operated a network of five automatic monitoring stations during 2023. The closest monitoring station is located on Euston Road, approximately 180 metres west of the proposed development site. Table X provides the details of automatic monitoring sites within the vicinity of the proposed development site.

Table X: Details of Automatic Monitoring Sites

Site ID	Monitoring Location	UK National Grid Reference (m)		Distance from Nearest Road (m)	Inlet Height (m)	Pollutant Monitored
		X	Y			
CD9	[Location 1]	[X]	[Y]	210	2.5	NO <sub>2</sub> , PM <sub>10</sub> , PM <sub>2.5</sub>

Table Y below presents the monitored annual mean pollutant concentrations.

Table Y: Monitored Annual Mean Pollutant Concentrations at Automatic Monitoring Locations

Site ID	Pollutant Monitored	Monitored NO <sub>2</sub> Concentration (µg/m <sup>3</sup> )			
		2021	2022	2023	2024
CD9	NO <sub>2</sub>	X	X	X	X
	PM <sub>10</sub>	X	X	X	X
	PM <sub>2.5</sub>	X	X	X	X

Concentrations exceeding the Air Quality Objectives are shown in bold

As outlined in Table Y, monitoring location **CD9** recorded annual average concentrations above the Air Quality Objective for NO<sub>2</sub> (40 µg/m<sup>3</sup> annual mean) during the years **2021-2024**, whilst concentrations of PM<sub>10</sub> and PM<sub>2.5</sub> remained below the respective Air Quality Objectives of 40 µg/m<sup>3</sup> and 20 µg/m<sup>3</sup> annual mean throughout this period.

**Rushcliffe Borough Council** does not currently operate any automatic (continuous) air quality monitoring stations within the Borough. The nearest automatic monitoring is operated by Nottingham City Council, with stations located approximately **[X]** kilometres from the proposed development site. Given this distance, data from these stations is not considered representative of conditions at the XXXX site and has not been relied upon for this assessment.



### Background Pollutant Concentrations

Predictions of background pollutant concentrations on a 1 kilometre by 1 kilometre grid basis have been produced by Defra for the entire United Kingdom to assist local authorities in their review and assessment of air quality. The site is located within Ordnance Survey grid square **457500, 339500**. Background concentration data for this location were downloaded from the Defra website and are summarised in Table 3.

**Table 3: Predicted Background Pollutant Concentrations at the Site**

OS Grid Reference (X, Y; m)	Monitored NO <sub>2</sub> Concentration (µg/m <sup>3</sup> )					
	2021			2025		
	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>457500, 339500</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>

As demonstrated in Table 3, Defra predicted background concentrations for NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> are well below the relevant Air Quality Objectives at the site location in both the 2019 baseline year and the anticipated opening year of 2024. This indicates that background air quality in the vicinity of the site is generally good, with no significant pollution sources affecting baseline conditions.

### Summary of Baseline Conditions

The baseline air quality review demonstrates that:

- The site is not located within a designated Air Quality Management Area;
- Local authority monitoring data indicates that air quality in the vicinity of the site is generally compliant with Air Quality Objectives;
- Predicted background concentrations for key pollutants are well below the relevant objectives;
- There are no significant local emission sources that would adversely affect air quality at the site;
- The site is suitable for the introduction of sensitive receptors (residential accommodation) from an air quality perspective.



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# ASSESSMENT

## Introduction

There is potential for air quality impacts arising from both the construction and operational phases of the proposed development. These are assessed in the following sections.

## Construction Phase Assessment

Construction activities have the potential to generate and/or re-suspend dust and PM<sub>10</sub> from various sources including:

- Site clearance and preparation including any demolition activities;
- Establishment of temporary site access and egress routes;
- Earthworks operations;
- Materials handling, storage, stockpiling and disposal;
- Movement of vehicles and construction plant within the site (including excavators and dumper trucks);
- Operation of crushing and screening equipment;
- Exhaust emissions from construction plant, particularly when operated at capacity or during mechanical breakdown;
- Construction of buildings, roads and hardstanding areas;
- Internal and external finishing works;
- Trackout, whereby material is carried from the site on vehicle tyres and subsequently deposited on public highways, which may later become airborne due to vehicle movements; and
- Site landscaping following completion.

The majority of dust emissions are anticipated to occur during standard working hours throughout the working week. However, for certain activities such as exposed earthworks, in the absence of appropriate dust control measures, dust generation has the potential to occur continuously throughout the period during which such operations take place.

## Assessment of Potential Dust Emission Magnitude

The IAQM assessment methodology has been applied to determine the potential dust emission magnitude for the following four dust and PM<sub>10</sub> sources:

- Demolition;
- Earthworks;
- Construction; and
- Trackout.

The findings of this assessment are presented below.



### Demolition

The site currently comprises existing structures which are to be demolished to facilitate the proposed development of **XXXX**. The total volume of buildings to be demolished is anticipated to be **less than 20,000 m<sup>3</sup>**. In accordance with IAQM guidance, the potential dust emission magnitude from demolition activities is therefore classified as **small**.

### Earthworks

The total site area is approximately **[X] m<sup>2</sup>**. Based on information provided by the client, earthworks activities are anticipated to be less than 20,000 m<sup>3</sup>. Site preparation will involve ground levelling and excavation for foundations and underground services. In accordance with IAQM guidance, the potential dust emission magnitude from earthworks is therefore classified as **small**.

### Construction

The proposed development comprises **XXXX** with a total building volume estimated to approximately **[X] m<sup>3</sup>**, therefore less than 25,000 m<sup>3</sup>. The construction phase will involve typical residential construction activities including foundation works, structural frame erection, installation of building services, and external finishing. In accordance with IAQM guidance, the potential dust emission magnitude from construction activities is therefore classified as **small**.

### Trackout

**Information regarding the precise number of Heavy Duty Vehicles (HDVs) associated with the construction phase was not available at the time of undertaking this assessment. Professional judgement has therefore been applied based on the scale and nature of the development.** Given the relatively modest scale of the proposed development, it is anticipated that there will be fewer than 10 HDV outward movements per day during peak construction activity. The length of unpaved haul routes within the site is expected to be less than 50 metres. In accordance with IAQM guidance, the potential dust emission magnitude from trackout is therefore classified as **small**.

### Summary of Potential Dust Emission Magnitudes

The assessment of potential dust emission magnitudes for the construction phase has been undertaken in accordance with IAQM guidance. The findings are summarised in Table 4 below.

**Table 4: Summary of Potential Dust Emission Magnitudes**

Activity	Key Parameters	Dust Emission Magnitude
Demolition	Total building volume to be demolished: <b>[X] m<sup>3</sup></b> <20,000 m <sup>3</sup>	Small
Earthworks	Total site area: <b>[X] m<sup>2</sup></b> ( <b>&lt;10,000 m<sup>2</sup></b> )	Small
Construction	Total building volume: <b>[X] m<sup>3</sup></b> (<25,000 m <sup>3</sup> )	Small
Trackout	HDV movements: <10 outward movements per day Unpaved route length: <50 m	Small



The assessment demonstrates that all four construction activities (demolition, earthworks, construction and trackout) are classified as having a **small** potential dust emission magnitude in accordance with IAQM guidance criteria. This classification reflects the relatively **modest** scale of the proposed development and forms the basis for determining the sensitivity of the area and subsequent risk assessment presented in the following sections.

**Assessment of Sensitivity of the Study Area**

The prevailing wind direction in the area is predominantly south-westerly. Consequently, receptors located to the north-east of the site are more likely to be affected by dust and particulate matter emitted and re-suspended during construction activities.

Under lower wind speed conditions, the majority of dust deposition is likely to occur in the immediate vicinity of the source. Receptors situated north-east of the site are expected to experience the greatest potential for dust impacts due to the prevailing wind direction. It has been assumed that construction traffic will access the site from Pavilion Road via the local highway network in **XXXX**.

There are no designated ecological receptors within 50 metres of the site boundary, access routes, or site entrance, as identified through consultation of the Multi-Agency Geographic Information for the Countryside (MAGIC) database.

Taking the above factors into account and following the IAQM assessment methodology, the sensitivity of the area to changes in dust and PM<sub>10</sub> concentrations has been derived for each of the construction activities under consideration. The results are presented in Table 5.

**Table 5: Sensitivity of the Study Area**

Potential Impact	Sensitivity of the Surrounding Area			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	Low	-	High	High
Human Health (PM <sub>10</sub> )	Low	-	Low	Low

Note: Sensitivity of ecological receptors has been excluded, as no sensitive ecological receptors are located within:

- 50 m of the proposed development site boundary
- 50 m of roads within 500 m of the site access

This is in accordance with Table 4 of the IAQM Guidance.

The sensitivity classification reflects the presence of residential properties within 20 metres of the site boundary and along potential haul routes. The medium sensitivity for dust soiling acknowledges the proximity of these receptors, whilst the low sensitivity for human health impacts reflects the small scale of activities and the generally good baseline air quality in the area.



### Risk of Impacts

The predicted dust emission magnitude has been combined with the defined sensitivity of the area to determine the risk of impacts during the construction phase, prior to the implementation of mitigation measures. Table 6 provides a summary of the risk of such impacts for the proposed development. The risk category identified for each construction activity determines the level of mitigation required in accordance with IAQM guidance.

**Table 6: Summary of Construction Dust Risk (Prior to Mitigation)**

Sensitivity of Area	Dust Emission Magnitude			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	Low	-	Low	Low
Human Health (PM <sub>10</sub> )	Negligible	-	Negligible	Negligible

The assessment demonstrates that all construction activities present a **low** risk of dust soiling impacts and a **negligible** risk of human health impacts prior to mitigation. In accordance with IAQM guidance, developments presenting **low or negligible** risk still require the implementation of appropriate dust management measures to ensure that potential impacts are minimised and controlled throughout the construction period.

### Construction Vehicles and Plant Emissions

Exhaust emissions from vehicles and construction plant associated with the construction phase have the potential to affect air quality in areas immediately adjacent to the site and along construction traffic routes. Construction vehicles will access the site via Pavilion Road and the local highway network in West Bridgford. Due to the modest scale of the proposed development (49 residential apartments), construction traffic generation is anticipated to be low in comparison to existing traffic flows on the surrounding road network. Construction vehicle movements are expected to be distributed throughout the working day, with peak HDV movements unlikely to exceed 10 outward movements per day.

Final details of plant and equipment to be deployed on site will be determined by the appointed contractor. However, typical construction plant is likely to comprise dumper trucks, tracked excavators, diesel generators, compressors, concrete mixers and delivery vehicles. The number and type of plant operating at any given time will vary throughout the construction programme depending on the phase of works being undertaken.

Based on the current baseline air quality conditions, the proximity of sensitive receptors to roads likely to be used by construction vehicles, the anticipated low volume of construction traffic relative to existing flows, and the temporary nature of construction activities, the residual impacts from construction vehicle and plant emissions are considered to be negligible in accordance with EPUK & IAQM assessment criteria. This conclusion assumes the implementation of standard best practice mitigation measures as detailed in the following section.



## Operational Phase Assessment

### Traffic-Related Impacts

Vehicle movements associated with the proposed development will generate exhaust emissions on the local highway network. A screening assessment has been undertaken based on the Stage 1 criteria established in EPUK and IAQM guidance.

The proposed development comprises **XXXX with associated car parking provision**. In accordance with Stage 1 screening criteria, an air quality assessment is required where a development includes 10 or more residential units and provides more than 10 parking spaces or incorporates centralised combustion plant.

Whilst the development exceeds the threshold of 10 residential units, the parking provision **[insert number of spaces if known, or state: is anticipated to be modest and in accordance with Rushcliffe Borough Council's parking standards]**. Furthermore, the development does not incorporate any centralised energy facilities or combustion plant.

[If parking <10 spaces:] As the development does not meet both elements of the Stage 1 criteria, air quality impacts associated with operational traffic can be assumed to be negligible in accordance with EPUK and IAQM guidance, and no further detailed assessment is required.

[If parking >10 spaces:] As the development meets the Stage 1 criteria, progression to Stage 2 screening has been undertaken. The Stage 2 assessment considers whether the development will generate changes in traffic flows exceeding the significance thresholds established in EPUK & IAQM guidance.

The proposed development is anticipated to generate approximately **[X]** vehicle movements per day based on standard trip generation rates for residential developments of this scale. This level of traffic generation will not result in:

A change in Light Duty Vehicle flows exceeding 100 AADT within or adjacent to an AQMA, or 500 AADT elsewhere;

A change in Heavy Duty Vehicle flows exceeding 25 AADT within or adjacent to an AQMA, or 100 AADT elsewhere;

The introduction of new junctions or significant changes to the local highway network that would affect traffic flows or congestion patterns.

The site is located **outside** any designated AQMA, with the nearest AQMA boundary situated approximately **[X] metres [direction]**. The modest scale of traffic generation relative to existing flows on the surrounding highway network, combined with the distance from designated AQMAs, indicates that operational traffic impacts will be insignificant.



Based on the screening assessment and in accordance with EPUK & IAQM guidance, air quality impacts associated with operational phase traffic are considered to be **negligible** and do **not require** further detailed quantitative assessment.

### Potential Future Exposure

The proposed development introduces new sensitive land use in the form of residential accommodation. It is therefore necessary to assess whether future occupants will be exposed to pollutant concentrations exceeding the Air Quality Objectives. Existing air quality conditions at the site have been evaluated as follows.

### Proximity to Pollution Sources

The site is located in a predominantly **residential area of West Bridgford**, with no significant industrial or commercial pollution sources in the immediate vicinity. The nearest major road is [identify road and distance], which carries [X] vehicles per day. The site is set back from this road by [X] metres, with intervening buildings and vegetation providing screening from traffic emissions.

There are no other significant pollution sources such as industrial facilities, major combustion plant, or heavily trafficked roads within 200 metres of the site that would adversely affect air quality at proposed residential receptor locations.

### Summary

It is concluded that pollutant concentrations at the proposed development site are well below the relevant Air Quality Objectives for the following reasons:

- There are no local authority monitoring locations within 500 metres of the site, indicating that Rushcliffe Borough Council does not consider air quality in this area to be a concern;
- Predicted background concentrations of NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> are substantially below the relevant Air Quality Objectives in the opening year;
- The site is not located within or adjacent to a designated Air Quality Management Area;
- There are no significant pollution sources in proximity to the site that would adversely affect air quality; and
- The site is situated in a predominantly residential area with good baseline air quality conditions.

Future occupants of the development will therefore not be exposed to pollutant concentrations exceeding the Air Quality Objectives, and the site is considered suitable for residential use from an air quality perspective.

### Overall Significance of Operational Phase Impacts

Based on the screening assessment of traffic-related impacts and the evaluation of future exposure, the overall air quality effect of the proposed development during the operational phase is considered to be **not significant** in accordance with EPUK & IAQM guidance. The development will **not result in a significant** deterioration in air quality at existing receptors, and future occupants **will experience air quality conditions that are compliant** with the relevant Air Quality Objectives.

Based on the construction phase assessment results, mitigation measures will be required during this phase of the development. As the site presents a maximum risk classification of low for dust soiling impacts and



negligible for human health impacts, the IAQM's recommended mitigation measures appropriate for a low risk site are presented in Appendix A. These measures represent industry best practice for construction dust management and should be incorporated into a Construction Environmental Management Plan (CEMP) or Dust Management Plan (DMP) to be implemented by the appointed contractor.



# AIR QUALITY NEUTRAL ASSESSMENT

## Regulatory Framework and Assessment Methodology

In accordance with London Plan Policy SI1 Improving Air Quality Part B(2)(a) and Part E, all development proposals are required to demonstrate Air Quality Neutral compliance through a comprehensive assessment against established benchmarks. The Air Quality Neutral approach prevents degradation of air quality from combined emissions of individual developments by setting maximum allowable emissions of nitrogen dioxide (NO<sub>x</sub>) and particulate matter based on development size and use class.

The assessment comprises two distinct benchmark evaluations: the Building Emissions Benchmark (BEB) addressing emissions from equipment used to supply heat and energy to buildings, and the Transport Emissions Benchmark (TEB) covering emissions from private vehicles travelling to and from the development. A development must meet both benchmarks separately to achieve Air Quality Neutral status.

## Transport Emissions Assessment

The proposed development comprises [number] residential dwellings located within [Inner London/Outer London excluding CAZ]. Based on the Mayor's Air Quality Neutral Guidance, the Transport Emissions Benchmark for residential developments in this location is [114/447] trips per dwelling per annum.

Calculation:

Number of residential units: [X] dwellings

Benchmark trip rate: [114/447] trips/dwelling/year

Total benchmark trips (TEB): [X × benchmark rate] trips/year

Predicted development trips: [calculated based on TRICS data or car-free status]

The development [meets/exceeds] the Transport Emissions Benchmark with a predicted trip rate of [X] trips per year compared to the benchmark of [X] trips per year.

## Building Emissions Assessment

The proposed development will utilise [heating technology - e.g., air source heat pumps/gas boilers/district heating connection] for space heating and [hot water system - e.g., electric immersion heaters/gas-fired hot water system/heat pump hot water].

Heating Sources:

Space heating: [specific technology and efficiency ratings]

Hot water provision: [specific technology and efficiency ratings]

Total gross internal area: [X] m<sup>2</sup>

Calculation:

Building Emissions Benchmark: [X] kg NO<sub>x</sub>/m<sup>2</sup>/year and [X] kg PM<sub>2.5</sub>/m<sup>2</sup>/year

Predicted building emissions: [calculated based on energy strategy]



The development [meets/exceeds] the Building Emissions Benchmark with predicted emissions of [X] kg NO<sub>x</sub>/m<sup>2</sup>/year and [X] kg PM<sub>2.5</sub>/m<sup>2</sup>/year compared to benchmarks of [X] kg NO<sub>x</sub>/m<sup>2</sup>/year and [X] kg PM<sub>2.5</sub>/m<sup>2</sup>/year respectively.

### Conclusion

The proposed development [achieves Air Quality Neutral status/requires mitigation measures] as it [meets both the Transport and Building Emissions Benchmarks/fails to meet the [TEB/BEB/both benchmarks]]. [If compliant: The development therefore demonstrates Air Quality Neutral compliance in accordance with London Plan Policy SI1.] [If non-compliant: Appropriate mitigation measures or offsetting contributions will be required to achieve Air Quality Neutral status, as detailed in the mitigation strategy section below.]



## MITIGATION MEASURES

The proposed development incorporates a comprehensive suite of air quality mitigation measures designed to minimise both the generation of emissions and exposure of future residents to existing air pollution. These measures align with London Plan Policy SI1 requirements and Lambeth's Air Quality Action Plan objectives, addressing operational emissions, exposure reduction, and enhancement of local environmental quality.

### Exposure Reduction Measures

#### Ventilation Strategy:

- Installation of positive input ventilation systems incorporating filtration to reduce ingress of external pollutants
- Ventilation inlet positioning away from primary pollution sources and at optimal heights to minimise exposure to vehicle emissions
- Basement accommodation ventilation via existing high/low level vents, ensuring adequate air circulation and preventing accumulation of pollutants in below-ground spaces, thereby maintaining acceptable air quality conditions for future residents

#### Building Design and Orientation:

- Positioning of habitable rooms away from the primary road frontage to maximise distance from traffic emissions

#### Transport Measures:

- Provision of 2 secure cycle storage spaces at ground level

#### Energy and Heating Systems:

- Installation of all-electric heating and hot water systems, eliminating direct fossil fuel combustion and associated NOx/PM emissions
- Integration with renewable energy sources - solar PV panels to further reduce carbon intensity

#### Green Infrastructure:

- Integration of planting on Juliet balconies to provide natural air filtration and particulate matter capture

### Air Quality Positive

Through the implementation of this comprehensive suite of active air quality improvement measures, the proposed development demonstrates performance that exceeds Air Quality Neutral standards and advances towards an Air Quality Positive approach. This aligns with the requirements for Opportunity Areas under London Plan Policy SI1, which mandates that developments should "adopt an air quality positive approach that actively reduces air pollution."

The development's Active Air Quality Improvement Measures are:

- Emission Elimination: Complete removal of on-site fossil fuel combustion through all-electric heating and hot water systems, integration with renewable energy sources - solar PV panels to further reduce carbon intensity achieving zero direct NOx and PM emissions;
- Enhanced Filtration: Implementation of filtration systems that actively remove particulate matter from external air, providing cleaner air quality than baseline conditions;
- Transport Emission Reduction: Car-free development status with enhanced cycle provision actively reducing local vehicle emissions below existing baseline levels;
-



- Urban Greening Enhancement: Green infrastructure implementation providing ongoing air quality improvement through natural filtration processes;

The proposed development not only complies with Air Quality Neutral benchmarks but demonstrates Air Quality Positive performance through the implementation of active measures that result in demonstrable local air quality improvements. This approach contributes positively to Lambeth's Air Quality Action Plan objectives and supports the borough's commitment to reducing exposure to air pollution whilst actively improving environmental conditions for existing and future residents.



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## SUMMARY AND CONCLUSIONS

Air & Flood Consultants was commissioned to undertake an Air Quality Assessment in support of a residential development comprising **XXXX**.

Construction phase impacts have been evaluated qualitatively in accordance with IAQM guidance. The assessment determined that, without mitigation, dust soiling impacts would present a **Low risk**, and a **Negligible risk** of increase in particulate matter concentrations due to unmitigated construction activities for human health. The implementation of standard site management practices and suitable dust control measures will ensure that residual construction impacts remain **not significant**. Similarly, emissions from construction traffic and non-road mobile machinery are anticipated to have a **not significant** effect on local air quality.

Operational phase vehicle emissions have been assessed following EPUK and IAQM guidance. The development is predicted to generate **negligible** changes in pollutant concentrations at existing sensitive receptors, resulting in effects that are **not significant**.

Future occupants' exposure to air pollutants has been evaluated using background concentration data, local authority monitoring records, and consideration of nearby emission sources. The assessment demonstrates that nitrogen dioxide, PM<sub>10</sub> and PM<sub>2.5</sub> concentrations at the development site are expected to **remain below** the Air Quality Objectives.

The proposed development has been assessed for compliance with London Plan Policy SI1 Air Quality Neutral requirements through evaluation against both Transport and Building Emissions Benchmarks. The development achieves full Air Quality Neutral compliance, qualifying as car-free, and achieving zero direct emissions through all-electric heating and hot water systems, eliminating on-site fossil fuel combustion. The comprehensive suite of implemented mitigation measures, including filtration systems, urban greening, cycle provision, enables the development to exceed Air Quality Neutral and demonstrate Air Quality Positive performance by actively reducing local air pollution levels in accordance with London Plan policy requirements.

The proposals align with air quality policies established within both national planning guidance and **Rushcliffe Borough Council**'s local development framework.

In conclusion, air quality considerations do **not represent** a material constraint to the granting of planning permission for the proposed development.



# APPENDIX A - RECOMMENDED MITIGATION MEASURES FOR CONSTRUCTION DUST MANAGEMENT

## Communications

Mitigation Measure	Low Risk	Medium Risk	High Risk
Develop and implement a stakeholder communications plan that includes community engagement before work commences on site	Not required	Highly recommended	Highly recommended
Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager	Highly recommended	Highly recommended	Highly recommended
Display the head or regional office contact information	Highly recommended	Highly recommended	Highly recommended
Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority	Desirable	Highly recommended	Highly recommended

## Site Management

Mitigation Measure	Low Risk	Medium Risk	High Risk
Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken	Highly recommended	Highly recommended	Highly recommended
Make the complaints log available to the local authority when asked	Highly recommended	Highly recommended	Highly recommended
Record any exceptional incidents that cause dust and/or air emissions, either on- or off-site, and the action taken to resolve the situation in the log book	Highly recommended	Highly recommended	Highly recommended
Hold regular liaison meetings with other high risk construction sites within 250 m of the site boundary, to ensure plans are coordinated and dust and particulate matter emissions are minimised	Not required	Not required	Highly recommended

## Monitoring

Mitigation Measure	Low Risk	Medium Risk	High Risk
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Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100 m of site boundary	Desirable	Desirable	Highly recommended
Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked	Highly recommended	Highly recommended	Highly recommended
Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions	Highly recommended	Highly recommended	Highly recommended
Agree dust deposition, dust flux, or real-time PM <sub>10</sub> continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site	Highly recommended	Highly recommended	Highly recommended

**Preparing and Maintaining the Site**

Mitigation Measure	Low Risk	Medium Risk	High Risk
Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible	Highly recommended	Highly recommended	Highly recommended
Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site	Highly recommended	Highly recommended	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	Desirable	Highly recommended	Highly recommended
Avoid site runoff of water or mud	Highly recommended	Highly recommended	Highly recommended
Keep site fencing, barriers and scaffolding clean using wet methods	Desirable	Highly recommended	Highly recommended
Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below	Desirable	Highly recommended	Highly recommended
Cover, seed or fence stockpiles to prevent wind whipping	Desirable	Highly recommended	Highly recommended

**Operating Vehicle/Machinery and Sustainable Travel**

Mitigation Measure	Low Risk	Medium Risk	High Risk
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Ensure all on-road vehicles comply with relevant emission standards where applicable	Highly recommended	Highly recommended	Highly recommended
Ensure all vehicles switch off engines when stationary - no idling vehicles	Highly recommended	Highly recommended	Highly recommended
Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable	Highly recommended	Highly recommended	Highly recommended
Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas	Desirable	Desirable	Highly recommended
Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials	Not required	Not required	Highly recommended
Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing)	Not required	Desirable	Highly recommended

**Operations**

Mitigation Measure	Low Risk	Medium Risk	High Risk
Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction	Highly recommended	Highly recommended	Highly recommended
Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate	Highly recommended	Highly recommended	Highly recommended
Use enclosed chutes and conveyors and covered skips	Highly recommended	Highly recommended	Highly recommended
Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate	Highly recommended	Highly recommended	Highly recommended
Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods	Desirable	Highly recommended	Highly recommended

**Waste Management**

Mitigation Measure	Low Risk	Medium Risk	High Risk
Avoid bonfires and burning of waste materials	Highly recommended	Highly recommended	Highly recommended

**Measures Specific to Demolition**



Mitigation Measure	Low Risk	Medium Risk	High Risk
Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust)	Desirable	Desirable	Highly recommended
Ensure effective water suppression is used during demolition operations. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed	Highly recommended	Highly recommended	Highly recommended
Avoid explosive blasting, using appropriate manual or mechanical alternatives	Highly recommended	Highly recommended	Highly recommended
Bag and remove any biological debris or damp down such material before demolition	Highly recommended	Highly recommended	Highly recommended

### Measures Specific to Earthworks

Mitigation Measure	Low Risk	Medium Risk	High Risk
Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable	Not required	Desirable	Highly recommended
Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable	Not required	Desirable	Highly recommended
Only remove the cover in small areas during work and not all at once	Not required	Desirable	Highly recommended

### Measures Specific to Construction

Mitigation Measure	Low Risk	Medium Risk	High Risk
Avoid scabbling (roughening of concrete surfaces) if possible	Desirable	Desirable	Highly recommended
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	Desirable	Highly recommended	Highly recommended
Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery	Not required	Desirable	Highly recommended
For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust	Not required	Desirable	Desirable



**Measures Specific to Trackout**

<b>Mitigation Measure</b>	<b>Low Risk</b>	<b>Medium Risk</b>	<b>High Risk</b>
Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use	Desirable	Highly recommended	Highly recommended
Avoid dry sweeping of large areas	Desirable	Highly recommended	Highly recommended
Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport	Desirable	Highly recommended	Highly recommended
Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable	Not required	Highly recommended	Highly recommended
Record all inspections of haul routes and any subsequent action in a site log book	Desirable	Highly recommended	Highly recommended
Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned	Not required	Highly recommended	Highly recommended
Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable)	Desirable	Highly recommended	Highly recommended
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	Not required	Highly recommended	Highly recommended
Access gates to be located at least 10 m from receptors where possible	Not required	Highly recommended	Highly recommended