Unit 2, Ruislip Retail Park

Air Quality Assessment

Q&A Planning Limited

Prepared by:

SLR Consulting Limited

5th Floor, 35 Dale Street, Manchester, United Kingdom, M1 2HF

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Basis of Report

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Table of Contents

Tables in Text

Figures in Text

1.0 Introduction

SLR Consulting Ltd (SLR) has been commissioned by Q&A Planning Limited to undertake an Air Quality Assessment (AQA) in support of a planning application for the change-of-use and the addition of mezzanine floorspace (the 'Proposed Development') at Unit 2, Ruislip Retail Park, Ruislip (the 'Site'). The Site currently comprises a Carpetright retail store, and the Proposed Development includes change of use to a Next retail store.

The Site is located at the approximate National Grid Reference (NGR): x512320, y185620. The Site falls within the administrative area of the London Borough of Hillingdon (LBoH). The surrounding area comprises:

- The wider Ruislip Retail Park in each direction, with associated retail car parking located immediately to the north, and wider commercial buildings to the east, south and west; and
- Victoria Road located approximately 70m to the north and Field End Road located approximately 65m to the east. Immediately beyond both roads are existing residential dwellings.

Vehicular access to the Site will be via the existing access provision into Ruislip Retail Park.

1.1 Scope of Assessment

Pre-assessment consultation was attempted with the Environmental Health Officer (EHO) at LBoH to agree upon the scope and methodology of the AQA[1], however at the time of writing no response has been received. Nonetheless, the scope of the assessment is based on national, regional and local guidance, as well as established best practice. As such, the following scope of works has been undertaken as originally proposed to LBoH:

- Baseline Evaluation – Assessment of existing air quality in the local area;
- Construction Phase Assessment - Identification and assessment of potential air quality impacts associated with the construction phase of the Proposed Development;
- Operational Phase Assessment – Identification and assessment of potential air quality impacts associated with the operational phase of the Proposed Development at existing human receptors;
- Air Quality Neutral Assessment – Assessment of building and transport emissions associated with the operational phase of the Proposed Development; and
- Mitigation Measures – Identification of mitigation measures, as appropriate, based on the outcome of the construction and operational phase assessments.

[1] Email sent from SLR Consulting Ltd to 'agrossinho@hillingdon.gov.uk', as presented within the LBoH 2024 Annual Status Report, dated 12th December 2024.

2.0 Relevant Air Quality Context

2.1 Legislation

A dual set of regulations, separately applicable to National and Local Government, are currently operable within the UK.

2.1.1 National Obligations

2.1.1.1 Air Quality Standards

The Air Quality Standards Regulations 2010[2] (AQSR) transpose both the EU Ambient Air Quality Directive (2008/50/EC), and the Fourth Daughter Directive (2004/107/EC) within UK legislation, in order to align and mirror European obligations. The AQSR includes Limit Values which are legally binding ambient concentration thresholds which, however, are only applicable at specific locations (Schedule 1: AQSR)[3]. Carriageways or central reservations of roads, and any location where the public do not have access (e.g. industrial sites), are exempt. On this basis, if a sampling point does not comply with the siting locations, then strict comparison to the AQSR Limit Values cannot be made.

Following the UK's withdrawal from the EU, the Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020[4] was introduced to mirror revisions to supporting EU legislation. As a result, the fine particulate matter (as $PM_{2.5}$) Limit Value is 20µg/m^3 (to be met by 2020).

The responsibility of achieving the AQSR (and European equivalent Directives) is a national obligation for Central Government who undertake assessments on an annual basis. Local Authorities have no statutory obligation to achieve the AQSR or the European equivalent Directives, unless otherwise instructed to assist Central Government under Ministerial Direction.

In response to persistent exceedences, the Government published its 2017 plan[5] for reducing roadside nitrogen dioxide (NO_2) concentrations in order to achieve compliance in the shortest time possible. This has resulted in the introduction of Clean Air Zones across England. The Greater London Area was identified as requiring measures to be implemented to achieve concentration reduction, for which Part IV of the Environment Act 1995 placed the responsibility on the Mayor of London for the direction of such measures. The Mayor of London is taking forward a package of measures to achieve the statutory NO_2 limit values for London within the shortest possible time. The UK government's analysis has concluded that the Greater London Urban Area zone will achieve compliance in 2025 through measures including those identified within the Mayor's Air Quality Strategy 2010 which was latterly replaced by the London Environment Strategy 2018 (see Section 2.2.2.1).

2.1.1.2 Environment Targets (Fine Particulate Matter) Regulations

The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023[6] introduced an annual mean concentration target of 10µg/m^3 to be met across England by

[2] The Air Quality Standards Regulations (England) 2010, Statutory Instrument No 1001, The Stationary Office Limited.

[3] Schedule 1 of the 2010 AQSR provides the locations of the sampling points where the AQSR Limits Values can be assessed.

[4] The Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020, Statutory Instrument No. 1313, The Stationary Office Limited.

[5] Defra and DfT, UK Plan for Tackling Roadside Nitrogen Dioxide Concentrations, (2017).

[6] The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023. UK Statutory Instruments 2023 No. 96.

2040. Central Government and Devolved Administrations are responsible for meeting this target, however not until 2040. Local Authorities have no responsibility to achieve this target.

2.1.2 Local Obligations

Part IV of the Environment Act 1995 (as amended by the Environment Act 2021) requires the Secretary of State to review the national Air Quality Strategy (AQS) every five years and modify this as necessary. It also established the system of Local Air Quality Management (LAQM) for Local Authorities to regularly review and assess air quality within their administrative area.

The Air Quality (England) Regulations 2000 (as amended) ('the Regulations') provide the statutory basis for the Air Quality Objectives Local Authorities must adhere to under LAQM in England. $PM_{2.5}$ is not currently cited within the Regulations, however in line with the AQS and the *'$PM_{2.5}$ Targets: Interim Planning Guidance'* issued by Defra in November 2024[7], Local Authorities are required to work towards reducing $PM_{2.5}$.

The Air Quality Objectives apply at locations where members of the public are regularly present and might reasonably be expected to be exposed to pollutant concentrations over the relevant averaging period (referred to as 'relevant exposure'). Table B provides an indication of those locations. Where any of the prescribed Air Quality Objectives are not likely to be achieved, the authority must designate an Air Quality Management Area (AQMA). For each AQMA, the local authority is required to prepare an Air Quality Action Plan (AQAP), which details measures the authority intends to introduce to deliver improvements in local air quality and achieve compliance.

The latest AQS for England was published in 2023[8]. The AQS provides the delivery framework for air quality management across England for local authorities and summarises the air quality standards and objectives operable within England for the protection of public health and the environment.

The ambient air quality standards of relevance this assessment (collectively termed Air Quality Assessment Levels (AQALs) throughout this report) are provided in Table A. These are primarily based upon the Air Quality Objectives Local Authorities are responsible for achieving – reflective of the Local Planning Authority's duties. The $PM_{2.5}$ AQSR AQAL has, however, also been included for completeness.

Table A: Relevant Ambient AQALs

Pollutant	AQAL (µg/m^3)	Averaging Period
NO_2	40	Annual mean
	200	1-hour mean (not to be exceeded on more than 18 occasions per annum)
Particles (as PM_{10})	40	Annual mean
	50	24-hour mean (not to be exceeded on more than 35 occasions per annum)
Particles (as $PM_{2.5}$)	20	Annual mean
Table Note: The $PM_{2.5}$ AQAL is not prescribed within the Air Quality (England) Regulations 2000/2002 and there is no requirement for local authorities to meet it. Exceedences are only valid at the AQSR specific siting locations (Schedule 1: AQSR).		

[7] Defra, $PM_{2.5}$ Targets: Interim Planning Guidance, (2024).

[8] Defra, Air Quality Strategy: Framework for Local Authority Delivery, (2023).

Table B: Human Health Relevant Exposure

AQAL Averaging Period	AQALs should apply at	AQALs should not apply at
Annual mean	Building facades of residential properties, schools, hospitals etc.	Facades of offices Hotels Gardens of residences Kerbside sites
24-hour mean	As above together with hotels and gardens of residential properties	Kerbside sites where public exposure is expected to be short term
1-hour mean	As above together with kerbside sites of regular access, car parks, bus stations etc.	Kerbside sites where public would not be expected to have regular access

2.1.3 Environmental Protection Act 1990

The Environmental Protection Act 1990[9] sets out provisions for the regulation of statutory nuisances. Section 79 sets out this statutory nuisance as, *'any dust, steam, smell or other effluvia arising on industrial, trade or business premises and being prejudicial to health or a nuisance'*.

Section 79 requires that, where a complaint of a statutory nuisance is made to it by a person living within its area, a Local Authority must take steps as are reasonably practicable to investigate the complaint. Proposed developments which result in the introduction of future sensitive receptors are however subject to the Agent of Change principle to ensure potential interactions with the existing environment and operations are assessed and mitigated to minimise restrictions being placed on existing businesses.

Fractions of dust greater than 10µm (i.e. greater than PM_{10}) in diameter typically relate to nuisance effects as opposed to potential health effects and therefore are not covered within the UK AQS. In legislation there are currently no numerical limits in terms of what level of dust deposition constitutes a nuisance.

2.2 Policy

2.2.1 National Policy

2.2.1.1 Clean Air Strategy

The 2019 Clean Air Strategy[10] sets out the Government's proposals aimed at delivering cleaner air in England and indicates how devolved administrations intend to make emissions reductions. It sets out the comprehensive action that is required from across all parts of government and society to deliver clean air.

2.2.1.2 Environmental Improvement Plan 2023

The 2023 Environmental Improvement Plan[11] is the first revision of the UK Government's 25 Year Environmental Plan (25YEP) – planned on a five-year rolling cycle. This document sets out the 5-year delivery plan to improve the natural environment. The 2023 Environmental

[9] UK Government, The Environmental Protection Act 1990, (1990). Available at: http://www.legislation.gov.uk/ukpga/1990/43/contents.

[10] Defra, The Clean Air Strategy, (2019).

[11] Defra, Environmental Improvement Plan 2023, (2023).

Improvement Plan builds on the 2019 Clean Air Strategy by setting environmental targets and commitments to reduce air pollution. Goal 2 of the 25YEP is Clean Air – which relates to improving air quality.

2.2.1.3 National Planning Policy Framework

The December 2024 update to the National Planning Policy Framework[12] (NPPF) sets out planning policy for England. The NPPF states that the planning system should contribute to and enhance the natural and local environment, by preventing new development from contributing to or being adversely affected by unacceptable concentrations of air pollution and development should, wherever possible, help to improve local environmental conditions such as air quality.

In specific relation to air quality policy, the document states:

> ***Chapter 15 - Conserving and Enhancing the Natural Environment***
>
> *"Para 199: Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan."*

The NPPF is accompanied by web based supporting Planning Practice Guidance (PPG)[13] which includes guiding principles on how planning can take account of the impacts of new development on air quality. In regard to air quality, the PPG states:

> *"The Department for Environment, Food and Rural Affairs carries out an annual national assessment of air quality using modelling and monitoring to determine compliance with relevant 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."*
>
> *"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)."*

The PPG sets out the information that may be required within the context of a supporting air quality assessment, stating 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* […] *Mitigation options will need to be locationally specific, will depend on the proposed development and need to be proportionate to the likely impact*".

[12] Ministry of Housing, Communities & Local Government, National Planning Policy Framework, (2024).

[13] Ministry of Housing, Communities & Local Government, Planning Practice Guidance: Air Quality, (2019).

2.2.2 Regional Policy

2.2.2.1 London Environment Strategy

The London Environment Strategy[14] is a strategic planning policy document developed by the Mayor of London. The strategy aims to tackle the environmental pressures associated with an ever-growing London populace. With particular regard to air quality, the policies that are set out in the London Environment Strategy aim to achieve the best air quality of any major world city by 2050; requiring the following primary actions:

- Reducing exposure of Londoners to harmful pollution across London – especially at priority locations like schools – and tackling health inequality;
- Achieving legal compliance with UK and EU limits as soon as possible, including by mobilising action from the London boroughs, government, and other partners; and
- Establishing and achieving new, tighter air quality targets for a cleaner London, meeting World Health Organisation (WHO) health-based guidelines by 2030 by transitioning to a zero emission London.

2.2.2.2 London Plan 2021

The London Plan[15] was formally adopted by the Greater London Authority (GLA) on 2nd March 2021. The London Plan is the overall strategic plan for London, setting out an integrated economic, environmental, transport and social framework for the development of London over the next 20–25 years (to the period 2041) and contains policies which are harmonious to those of Development Plan Documents to the 32 London boroughs.

The following policy relating to air quality is contained within the London Plan:

> ***"Policy SI 1 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:*
>
> *1. 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 exceedence of legal limits.*
>
> *c) create unacceptable risk of high levels of exposure to poor air quality.*
>
> *2. 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.*

[14] GLA, May 2018, London Environment Strategy.

[15] Mayor of London, The London Plan, (2021).

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."*

2.2.3 Local Policy

2.2.3.1 Local Plan

The LBoH Local Plan (Part 1)[16] was adopted in 2012 and sets out the overall planning vision and strategic policies for the Borough until 2026. The LBoH Local Plan (Part 2)[17] was adopted in 2020 and builds on Part 1 by providing detailed policies that will form the basis of the Borough's decisions on individual planning applications.

Within the LBoH Local Plan (Part 1), the following policies relate to air quality:

> *"**Policy E2: Location of Employment Growth***
>
> *The Council will accommodate 9,000 new jobs during the plan period. Most of this employment growth will be directed towards suitable sites in the Heathrow Opportunity Area, Strategic Industrial Locations (SILs), Locally Significant Employment Locations (LSEL), Locally Significant Industrial Sites (LSIS), Uxbridge Town Centre and Hayes Town Centre with a particular focus around transport nodes. The Council will promote development in highly accessible locations that delivers sustainable travel patterns and contributes to the improvement of existing networks to reduce emissions and impacts on air quality. The Council will*

[16] London Borough of Hillingdon, Local Plan: Part 1 (Strategy Policies), November 2012.
[17] London Borough of Hillingdon, Local Plan: Part 2 (Development Management Policies), January 2020.

accommodate a minimum of 3,800 additional hotel bedrooms, and new hotels and visitor facilities will be encouraged in Uxbridge, Hayes, on sites outside of designated employment land on the Heathrow perimeter and in other sustainable locations."

*"**Policy BE1: Built Environment***

The Council will require all new development to improve and maintain the quality of the built environment in order to create successful and sustainable neighbourhoods, where people enjoy living and working and that serve the long-term needs of all residents. All new developments should:

[…]

10. Maximise the opportunities for all new homes to contribute to tackling and adapting to climate change and reducing emissions of local air quality pollutants. […]"

*"**Policy EM1: Climate Change Adaptation and Mitigation***

The Council will ensure that climate change mitigation is addressed at every stage of the development process by:

[…]

5. Promoting the use of decentralised energy within large scale development whilst improving local air quality levels.

6. Targeting areas with high carbon emissions for additional reductions through low carbon strategies. These strategies will also have an objective to minimise other pollutants that impact on local air quality. Targeting areas of poor air quality for additional emissions reductions.

[…]"

*"**Policy EM8: Land, Water, Air and Noise***

[…]

Air Quality

All development should not cause deterioration in the local air quality levels and should ensure the protection of both existing and new sensitive receptors.

All major development within the Air Quality Management Area (AQMA) should demonstrate air quality neutrality (no worsening of impacts) where appropriate; actively contribute to the promotion of sustainable transport measures such as vehicle charging points and the increased provision for vehicles with cleaner transport fuels; deliver increased planting through soft landscaping and living walls and roofs; and provide a management plan for ensuring air quality impacts can be kept to a minimum.

The Council seeks to reduce the levels of pollutants referred to in the Government's National Air Quality Strategy and will have regard to the Mayor's Air Quality Strategy. London Boroughs should also take account of the findings of the Air Quality Review and Assessments and Actions plans, in particular where Air Quality Management Areas have been designated.

The Council has a network of Air Quality Monitoring stations but recognises that this can be widened to improve understanding of air quality impacts. The Council may therefore require new major development in an AQMA to fund additional air quality monitoring stations to assist in managing air quality improvements.

[…]"

Within the LBoH Local Plan (Part 2), the following policies relate to air quality:

*"**Policy DMEI 1: Living Walls and Roofs and on-site Vegetation***

All development proposals are required to comply with the following:

[…]

ii) Major development Air Quality Management Areas must provide onsite provision of living roofs and/or walls. A suitable offsite contribution may be required where onsite provision is not appropriate."

*"**Policy DMEI 14: Air Quality***

A) Development proposals should demonstrate appropriate reductions in emissions to sustain compliance with and contribute towards meeting EU limit values and national air quality objectives for pollutants.

B) Development proposals should, as a minimum:

i) be at least "air quality neutral";

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

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

*"**Policy DMT 1: Managing Transport Impacts***

A) Development proposals will be required to meet the transport needs of the development and address its transport impacts in a sustainable manner. In order for developments to be acceptable they are required to:

[…]

v) have no significant adverse transport or associated air quality and noise impacts on the local and wider environment, particularly on the strategic road network.

[…]"

*"**Policy DMT 2: Highways Impacts***

Development proposals must ensure that:

[…]

ii) they do not contribute to the deterioration of air quality, noise or local amenity or safety of all road users and residents;

[…]"

*"**Policy DMT 7: Freight***

A) Development proposals that generate a high number and/or intensity of transport and movements such as those relating to logistics and distribution or freight will be required to demonstrate that:

[…]

ii) there is no deleterious impact on residential areas, local air quality levels, local amenity or the highway network.

[…]"

The above policies have been considered throughout this assessment.

2.3 Assessment Guidance

The assessment has been carried out in accordance with the principles contained within the following guidance documents.

- The Department for Environment, Food and Rural Affairs (Defra): Local Air Quality Management Technical Guidance (LAQM.TG(22))[18];
- Defra: *Air quality appraisal: damage cost guidance (*hereafter referred to as the 'Defra damage cost guidance')[19];
- Defra: COVID-19: Supplementary Guidance. Local Air Quality Management Reporting in 2021[20];
- Defra: $PM_{2.5}$ Targets: Interim Planning Guidance[7] (the '$PM_{2.5}$ IPG');
- Environmental Policy Implementation Community (EPIC) (previously Environmental; Protection UK (EPUK)) and the Institute of Air Quality Management (IAQM): Land-Use Planning and Development Control: Planning for Air Quality[21] (the 'EPIC & IAQM guidance');
- National Highways: Design Manual for Roads and Bridges, LA105 - Air Quality (Vertical Barriers)[22] (the 'DMRB LA 105' guidance);
- GLA: London Local Air Quality Management Technical Guidance (LLAQM.TG(19))[23];
- GLA: London Plan Guidance, Air Quality Neutral[24] (the 'GLA AQN guidance'); and
- IAQM: Position Statement: Use of 2020 and 2021 Monitoring Datasets[25].

[18] Local Air Quality Management Technical Guidance 22, Published by Defra in partnership with the Scottish Government, Welsh Government and Department of Agriculture, Environment and Rural Affairs, (2022).

[19] Defra: *Air quality appraisal: damage cost guidance*, March 2023. Available at: https://www.gov.uk/government/publications/assess-the-impact-of-air-quality/air-quality-appraisal-damage-cost-guidance.

[20] Defra and the GLA, COVID-19: Supplementary Guidance. Local Air Quality Management Reporting in 2021, (2021).

[21] EPIC (previously EPUK) & IAQM, Land-Use Planning and Development Control: Planning for Air Quality, v1.2, (2017).

[22] National Highways, DMRB, LA 105 – Air Quality (Vertical Barriers), (2024).

[23] Mayor of London, London Local Air Quality Management Technical Guidance LLAQM.TG(19), (2019).

[24] GLA, London Plan Guidance, Air Quality Neutral, (2023).

[25] IAQM, Position Statement: Use of 2020 and 2021 Monitoring Datasets, v1.1, (2023).

3.0 Assessment Methodology

3.1 Construction Phase

3.1.1 Construction Phase Dust

The Proposed Development does not constitute any major alterations to the exterior of the building. As such, a construction phase dust assessment has been scoped out of this AQA.

3.1.2 Construction Phase Plant Emissions Assessment

Emissions from construction plant, as non-road mobile machinery (NRMM) have been screened with reference to the GLA SPG.

3.2 Operational Phase Road Traffic Emissions Assessment

The assessment of air quality effects in relation to development-generated traffic during the operational phase has been undertaken in accordance with EPIC & IAQM guidance.

The EPIC & IAQM guidance provides a series of indicative screening criteria where, if exceeded, further consideration to determine the potential effect on air quality is required. If the Proposed Development is found not to exceed any of the relevant indicative criteria presented, then a detailed impact assessment is consequently not required. Impacts can therefore be described as having an 'insignificant' effect onto local air quality.

The indicative screening criteria relevant for this assessment is as follows:

- Outside of an AQMA:
    - A change of Light-Duty Vehicle (LDV; <3.5t) flows of more than 500 as a 24-hour Annual Average Daily Traffic flow (AADT); and/or
    - A change of Heavy-Duty Vehicle (HDV; >3.5t) flows of more than 100 as a 24-hour AADT.
- Inside, or within 200m, of an AQMA:
    - A change of LDV flows of more than 100 as a 24-hour AADT; and/or
    - A change of HDV flows of more than 25 as a 24-hour AADT.

3.3 Air Quality Neutral Assessment

Consistent with the London Plan 2021, the GLA require developments to be Air Quality Neutral (AQN)[24] in order to prevent the incremental deterioration of air quality. The outcomes of the AQN assessment will determine whether mitigation is required to offset any development-generated emissions.

An AQN assessment for the Proposed Development has been undertaken in consideration of both building and transport emissions, following the GLA AQN guidance.

4.0 Baseline Environment

4.1 Baseline Air Quality

Monitoring data collected during the COVID-19 pandemic (i.e. 2020 and 2021) has not been used to characterise the baseline environment, as pollutant concentrations monitored during 2020 and 2021 are expected to be atypical, and not representative of the local environment, and have therefore not been considered as per guidance produced by Defra[20] and the IAQM Position Statement[25].

Further, the IAQM Position Statement states *"the "new-normal" pattern of activity and hence emissions appear to be stabilising. Therefore, ambient air quality monitoring data for the year 2022 and beyond is generally considered to represent the current post-pandemic baseline"*, thus supporting the use of 2022 and beyond as the baseline year for the assessment.

4.1.1 LAQM Review and Assessment

LBoH, in fulfilment of statutory requirements, has conducted an on-going exercise to review and assess air quality within their administrative area. The latest publicly available Annual Status Report (ASR) for LBoH at the time of writing is the 2024 ASR[26]. The monitoring data published therein has therefore been used for the purpose of informing this assessment.

LBoH currently has a single declared AQMA (referred to as the 'Hillingdon AQMA'), located approximately 650m to the south-west of the Site. The Hillingdon AQMA was declared in 2003 due to exceedences of the annual mean NO_2 AQAL at locations of relevant public exposure. Within LBoH's 2024 ASR, the Hillingdon AQMA is described as: "*an area encompassing the area to the south of the railway, covering the southern half of the borough*". Additionally, the Site is located approximately 80m to the west of the London Borough of Harrow's borough-wide AQMA (referred to as the 'Harrow AQMA'). The Harrow AQMA was declared in 2002 for exceedences of the annual mean NO_2 and the 24-hour mean PM_{10} AQALs at locations of relevant public exposure. Furthermore, the Site is located approximately 430m to the north of the London Borough of Ealing's (LBoE) borough-wide AQMA (referred to as the 'Ealing AQMA'). The Ealing AQMA was declared in 2000 for exceedences of the annual mean NO_2 and the 24-hour mean PM_{10} AQALs at locations of relevant public exposure.

It is noted that London Borough of Harrow's latest publicly available ASR is 2023[27] (inclusive of 2022 monitoring data) and provides limited detail on monitoring locations and associated monitoring datasets. LBoE's latest publicly available ASR is 2021[28] (inclusive of 2020 monitoring data).

In addition to the AQMAs discussed above, the Site is located approximately 1.4km to the east of the 'A40 / South Ruislip' Air Quality Focus Area (AQFA), an area designated for risk of exceeding the EU annual mean NO_2 limit value with high human exposure.

Given the proximity of the Site to the AQMAs and AQFA described above, consideration to each designation / location has been given throughout this assessment.

[26] London Borough of Hillingdon, Air Quality Annual Status Report for 2023, (2024).

[27] London Borough of Harrow, Air Quality Annual Status Report for 2022, (2023).

[28] London Borough of Ealing, Air Quality Annual Status Report for 2020, (2021).

4.1.2 Review of Air Quality Monitoring

4.1.2.1 Automatic Air Quality Monitoring

Automatic air quality monitoring is undertaken at 12 locations within the administrative boundary of LBoH. The closest automatic monitor of relevance to the Site is HI1, located approximately 1.6km to the west-south-west of the Site at a 'roadside' classification and within the 'A40 / South Ruislip' AQFA. The HI1 automatic monitor measures NO_2 and PM_{10} concentrations.

Automatic air quality monitoring was undertaken at two locations within the administrative boundary of London Borough of Harrow during 2022; the closest of which is located approximately 3.5km to the north-east of the Site. Given the separation distance between the Site and these automatic monitors, no further consideration has been given to the London Borough of Harrow's automatic monitoring network within this assessment. Automatic air quality monitoring was undertaken at four locations within the administrative boundary of LBoE during 2020; the closest of which is located approximately 6.8km to the south-east of the Site. Given the separation distance between the Site and these automatic monitors, no further consideration has been given to the LBoE's automatic monitoring network within this assessment.

The nearest Automatic Urban and Rural Network (AURN) automatic monitor is located approximately 8.8km to the south-west of the Site (i.e. the 'London Hillingdon' AURN). Given the separation distance between the Site and the 'London Hillingdon' AURN, comparable pollutant concentrations are not anticipated, and no further consideration has been given to the AURN monitors within this assessment.

The details and results of the automatic monitoring locations of relevance to the Site are presented in Table C to Table G below, whilst their locations are illustrated in Figure A. All monitoring data presented has been ratified by LBoH. However, it is noted that the monitored concentrations presented within the LBoH 2024 ASR have been rounded to the nearest whole number.

Table C: Local Automatic Monitoring Sites: Details

Site ID	Site Type	NGR (m)		Height (m)	Approximate Distance (km) and Direction to the Site
		X	Y		
HI1	Roadside (A)	510857	184917	1.5	1.6, WSW

Table Note:

(A) Roadside site defined by LLAQM.TG(19) as: *"a site sampling typically within one to five metres of the kerb of a busy road".*

Table D: Local Automatic Monitoring Sites: Annual Mean NO_2 Results

Site ID	2023 Data Capture %	Annual Mean NO_2 Concentration (µg/m^3)				
		2019	2020	2021	2022	2023
HI1	99.5	34	16	27	28	24

Table E: Local Automatic Monitoring Sites: 1-Hour Mean NO_2 Results

Site ID	2023 Data Capture %	NO_2 1-Hour Means >200µg/m^3 (A)				
		2019	2020	2021	2022	2023
HI1	99.5	0	0	0	0	0

Site ID	2023 Data Capture %	NO_2 1-Hour Means >200µg/m³ (A)				
		2019	2020	2021	2022	2023

Table Note:
(A) 18 1-hour mean concentrations in excess of 200µg/m³ are permitted.

Table F: Automatic Monitoring Sites: Annual Mean PM_{10} Results

Site ID	2023 Data Capture %	Annual Mean PM_{10} Concentration (µg/m³)				
		2019	2020	2021	2022	2023
HI1	96.3	17	18	17	19	19

Table G: Local Automatic Monitoring Sites: 24-Hour Mean PM_{10} Results

Site ID	2023 Data Capture %	PM_{10} 24-Hour Means >50µg/m³ (A)				
		2019	2020	2021	2022	2023
HI1	96.3	3	1	0	4	1

Table Note:
(A) 35 24-hour mean concentrations in excess of 50µg/m³ are permitted.

As shown above, the HI1 automatic monitor recorded annual mean NO_2 concentrations <90% of the AQAL (i.e. 40µg/m³) across each of the considered years (2019 – 2023). In 2023, the HI1 monitor recorded an annual mean NO_2 concentration of 24µg/m³, representing 60% of the AQAL. Between 2019 and 2023, there has been a reduction of 10µg/m³ in annual mean NO_2 concentrations. Furthermore, there have been no recorded 1-hour mean NO_2 concentrations >200µg/m³ across this period.

The HI1 automatic monitor recorded annual mean PM_{10} concentrations <50% of the AQAL (i.e. 40µg/m³) across each of the considered years (2019 – 2023). In 2023, the HI1 monitor recorded an annual mean PM_{10} concentration of 19µg/m³, representing 47.5% of the AQAL. Between 2019 and 2023, there has been a slight increase in annual mean PM_{10} concentrations. Across this period, there was a maximum of four 24-hour mean PM_{10} concentrations in excess of 50µg/m³ across a single year (2022). In 2023, there was one 24-hour mean PM_{10} concentrations in excess of 50µg/m³. This is compared to the 35 permitted across a calendar year as part of the 24-hour mean AQAL.

The monitored concentrations at the HI1 automatic monitor demonstrate consistent compliance with the relevant AQALs within the 'A40 / South Ruislip' AQFA.

4.1.2.2 Passive Diffusion Tube Monitoring

Passive NO_2 diffusion tube monitoring is currently undertaken by LBoH within the Site locale, at numerous locations. Passive NO_2 diffusion tube monitoring is also undertaken by LBoE within the Site locale, although as discussed in Section 4.1.1, the most recently available monitoring data for LBoE is 2020.

The details and results of the monitoring locations of relevance to the Site are presented in Table H and Table I, respectively, whilst their locations are illustrated in Figure A. All monitoring data presented has been ratified by LBoH and LBoE, respectively.

Table H: Local NO_2 Diffusion Tube Monitoring Sites: Details

Site ID	Site Type	NGR (m)		Height (m)	Approximate Distance (km) and Direction to the Site
		X	Y		
HILL15 (A)	Roadside (C)	511889	186563	1.5	1.01, NWN
EA17 (B)	Roadside (C)	513794	185348	2 – 2.5 (D)	1.47, ESE
EA16 (B)	Roadside (C)	513056	184241	2 – 2.5 (D)	1.53, SES
HILL03 (A)	Roadside (C)	510821	184923	1.5	1.62, WSW
EA15 (B)	Roadside (C)	512442	183769	2 – 2.5 (D)	1.81, S

Table Note:

(A) LBoH monitoring location.

(B) LBoE monitoring location.

(C) Roadside site defined by LLAQM.TG(19) as: "*a site sampling typically within one to five metres of the kerb of a busy road*".

(D) As reported within the LBoE 2021 ASR.

Table I: Local NO_2 Diffusion Tube Monitoring Sites: Results

Site ID	2023 Data Capture %	Annual Mean NO_2 Concentration (µg/m^3)				
		2019	2020	2021	2022	2023
HILL15	100	27.2	19.9	21.6	23.3	19.7
EA17	N/A	32.8	24.8	-	-	-
EA16	N/A	34.6	28.3	-	-	-
HILL03	100	35.5	26.7	27.3	30.0	24.2
EA15	N/A	35.2	24.3	-	-	-

As shown in Table I, there have been no exceedences of the annual mean NO_2 AQAL at any of the monitoring locations within 2km of the Site between the years 2019 and 2023 (where there is publicly available data).

In 2023, the monitoring location closest to the Site (HILL15), recorded an annual mean NO_2 concentration of 19.7µg/m^3, representing 49.3% of the AQAL.

With regard to the 'A40 / South Ruislip' AQFA, monitoring location 'HILL03' recorded a 2023 annual mean NO_2 concentration of 24.2µg/m^3, representing 60.5% of the AQAL. 'HILL03' is co-located with automatic monitor HI1 and has recorded comparable concentrations across the considered years (see Table D).

Where monitoring data is available, it shows there has been a downward trend in annual mean NO_2 concentrations at all considered monitoring locations between 2019 and 2023.

The empirical relationship given in LLAQM.TG(19) states that exceedences of the 1-hour mean NO_2 AQAL are unlikely where annual mean concentrations are <60µg/m^3. This indicates that exceedences of the 1-hour mean NO_2 AQAL are unlikely to have occurred at these sites during the period presented.

4.1.3 Defra's Pollution Climate Mapping Model

The Pollution Climate Mapping (PCM) model[29] is a collection of models which provides base and future projections of annual mean pollutant concentrations across the UK. The PCM model provides NO_2 concentrations predicted at roadside locations for major roads in the UK. These modelled predictions relate to receptor locations situated 4m from the road at a height of 2m and therefore exhibit roadside conditions where concentrations are expected to decline with further distance from the road source.

The latest dataset includes semi-empirical roadside annual average concentration estimates for NO_2 using a base year of 2018 (the year in which comparisons between modelled and monitoring are made).

Within the 'A40 / South Ruislip' AQFA, there is a PCM link covering the A4180 West End Road (Census ID: 802017636), at approximately 1.6km to the south-west of the Site.

The 2023 (baseline year) and 2025 (the anticipated completion year of Proposed Development) annual mean NO_2 concentrations predicted for this link are presented in Table J. The predicted annual mean NO_2 concentrations for 2023 and 2025 are 'well-below' the AQAL.

Table J: PCM Modelled Annual Mean NO_2 Concentrations

Road Link	Census ID	Predicted Annual Mean NO_2 Concentration (µg/m^3)	
		2023	2025
A4180 West End Road	802017636	20.9	18.6

4.1.4 London Atmospheric Emissions Inventory Concentrations

The London Atmospheric Emissions Inventory (LAEI)[30] provides modelled 2019 ground level annual mean roadside concentrations for NO_2, PM_{10} and $PM_{2.5}$ modelled at a 20m grid square resolution across London. The reported annual mean NO_2, PM_{10} and $PM_{2.5}$ concentrations which are centred upon the Site are provided in Table K.

As per Table K, the maximum reported 2019 annual mean NO_2, PM_{10} and $PM_{2.5}$ concentrations covering the Site are below the AQAL. Furthermore, no exceedences of the short-term NO_2 AQAL are likely to have occurred in accordance with the empirical relationships given in LAQM.TG(22) and the number of 24-hour mean PM_{10} concentrations >50µg/m^3 is less than the permitted 35.

Table K: Maximum 2019 LAEI Pollutant Concentrations Relevant to the Site

Statistic	Annual Mean Concentration (µg/m^3)			Daily PM_{10} Means in Excess of 50µg/m^3
	NO_2	PM_{10}	$PM_{2.5}$	
Minimum	24.8	16.2	10.2	4.3
Maximum	25.2	16.3	10.3	4.4

[29] Defra, Pollution Climate Mapping. Available at: https://uk-air.defra.gov.uk/research/air-quality-modelling?view=modelling.

[30] GLA, London Atmospheric Emissions Inventory (LAEI) 2019, Available at: https://data.london.gov.uk/dataset/london-atmospheric-emissions-inventory--laei--2019.

4.1.5 Defra Mapped Background Concentrations

Defra maintains a nationwide model[31] of existing and future background air quality concentrations at a 1km grid square resolution which is routinely used to support LAQM requirements and air quality assessments. The data sets include annual average concentration estimates for NO_2, PM_{10} and $PM_{2.5}$ using a reference year of 2021 (the year in which comparisons between modelled and monitored concentrations are made).

The maximum annual mean background concentrations of NO_2, PM_{10} and $PM_{2.5}$ have been obtained from the Defra published background maps (2021 reference year), based on the 1km grid squares which cover the Site area. The Defra mapped background concentrations for a base year of 2023 and the anticipated completion year for the Proposed Development (2025) are presented in Table L.

All the mapped background concentrations are 'well-below' the respective annual mean AQALs in 2023 and 2025, with all concentrations reducing further by 2025.

Table L: Defra Background Pollutant Concentrations

Grid Square (X, Y) (m)	Year	Annual Mean Concentration (µg/m^3)		
		NO_2	PM_{10}	$PM_{2.5}$
512500, 185500	2023	14.8	13.6	8.2
	2025	13.8	13.4	8.0
AQAL		***40***	***40***	***20***

4.1.6 London Ultra Low Emissions Zone

The Site is located within the former and current extent of the London Ultra Low Emissions Zone (ULEZ). The ULEZ originally became effective from 25th October 2021, but later expanded across all London boroughs on 29th August 2023.

The extension of the ULEZ is anticipated to result in improved air quality, specifically concentrations of NO_2, at locations within the ULEZ. This has been evidenced through the following documents:

- Inner London Ultra Low Emission Zone Expansion One Year Report[32], related to the expansion of the ULEZ across inner London in October 2021, which found that:
  - Vehicles traveling in London are increasingly cleaner. The overall ULEZ compliance rates have continued to increase, with 94.4% of vehicles seen driving in the zone on an average day meeting the ULEZ standards a year following the expansion, compared to just 39% when the expansion was announced in 2017;
  - Substantial reductions in NO_2 concentrations were seen at roadside locations, with a 47% reduction in inner London. Background monitoring sites away from the main road network also had significant reductions in NO_2 of 45% in inner London, since 2017; and
  - NO_2 levels have not returned to those experienced pre-pandemic, indicating that even as traffic levels have risen; cleaner vehicles in the fleet caused by the ULEZ

[31] Defra, Background Mapping data for local authorities - reference year of 2021. Available at: https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2021.

[32] Mayor of London, Inner London Ultra Low Emission Zone Expansion One Year Report, Available at: https://www.london.gov.uk/programmes-strategies/environment-and-climate-change/environment-and-climate-change-publications/inner-london-ultra-low-emission-zone-expansion-one-year-report.

and its expansion, have had sustained and positive impacts on air pollution meaning concentrations continue to be far below what they would have been otherwise.

- London-Wide Ultra Low Emission Zone Six Month Report[33], related to the expansion of the ULEZ across all London boroughs in August 2023, which found that:
  - A larger proportion of vehicles travelling in London are cleaner, as shown by a compliance rate of 96.2% after the first six months up from 91.6% in June 2023;
  - Pollutant emissions across London in 2023 are dramatically lower than expected without the London-wide ULEZ expansion, including a decrease in nitrogen oxides (NOx) emissions from cars and vans in outer London by an estimated 13% and 7% and a fall in $PM_{2.5}$ exhaust emissions from cars and vans in outer London by an estimated 20%; and
  - In the first six months of operation, roadside NO_2 concentrations in outer London were up to 4.4% lower than would have been expected without the London-wide ULEZ expansion.

The improving air quality baseline is evidenced through the monitoring data presented within Table D to Table I. Furthermore, it is reasonable to assume there would be continued emissions reduction / improving ambient air quality in later years as associated with the successful implementation of the ULEZ.

[33] Mayor of London, London-Wide Ultra Low Emission Zone Six Month Report, Available at: https://www.london.gov.uk/programmes-strategies/environment-and-climate-change/environment-and-climate-change-publications/london-wide-ulez-six-month-report.

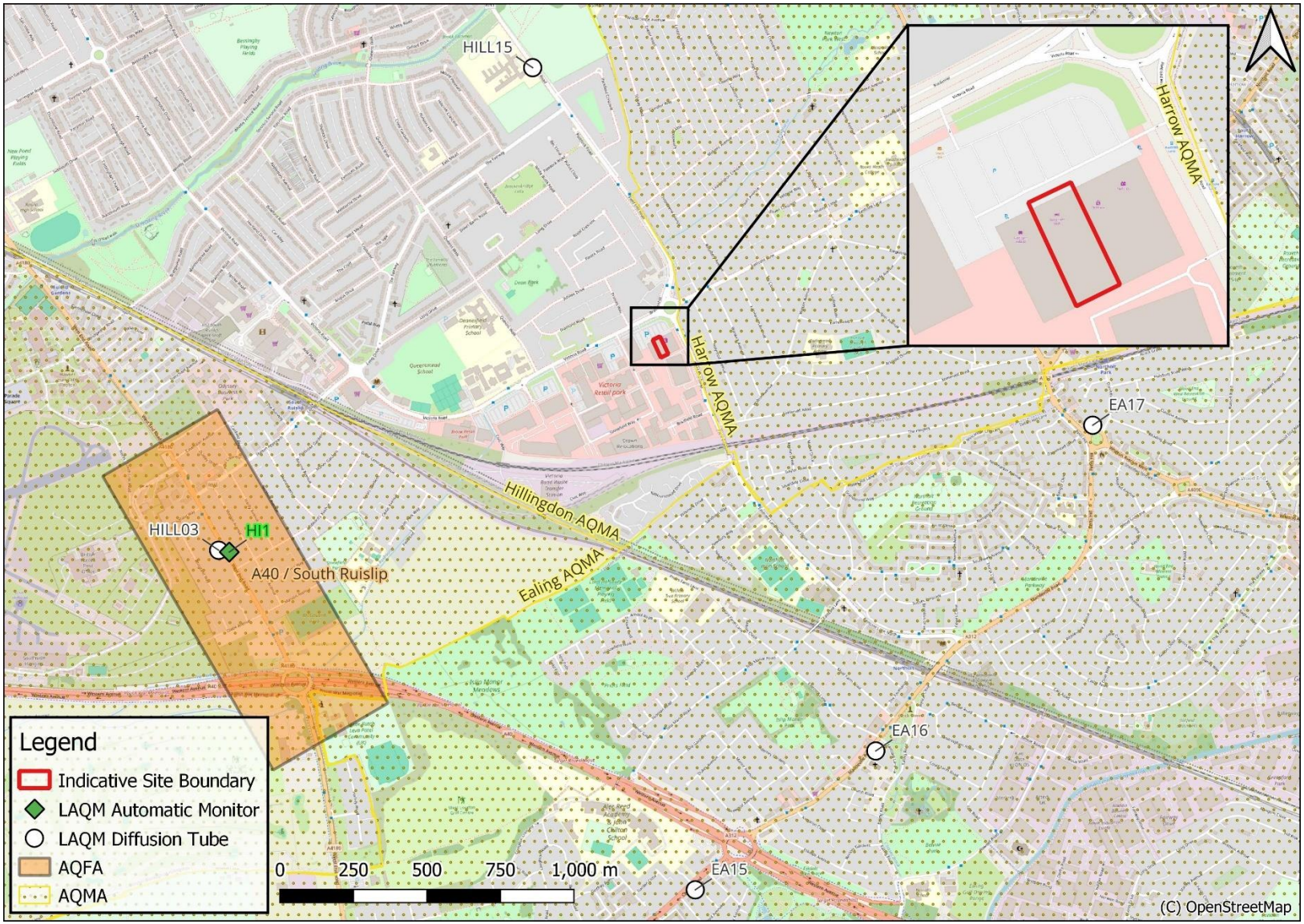


Figure A: Site Setting, LAQM Monitoring Locations, AQMAs and AQFA

5.0 Construction Phase Assessment

This section presents the potential air quality impacts and effects associated with the construction phase of the Proposed Development.

5.1 Construction Phase Plant Emissions

NRMM refers to mobile machines, transportable industrial equipment or vehicles which are fitted with an internal combustion engine and not intended for transporting goods or passengers on roads.

Pollutants emitted by NRMM that may have the most significant potential effects on local air quality are particulate matter (as PM_{10} and $PM_{2.5}$), and NOx / NO_2. Typically, NRMM is associated with construction sites and, therefore there is a potential for NRMM emissions to adversely affect local air quality as a result of the Proposed Development.

In accordance with Part 7 of the GLA's SPG, all construction plant would adhere to the emissions standards for NO_2 and PM_{10} set out for NRMM standards. It is therefore considered the likely effect of NRMM emissions on local air quality would be 'insignificant'.

The Site is not located within London's NRMM Central Activities Zone (CAZ) or Opportunity Areas (OAs)[34]. The current NRMM standard applicable to the Site (in Greater London) is currently Stage IIIB, will increase to Stage IV between 2025-2029, and increase again to Stage V between 2030-2039.

[34] Non-Road Mobile Machinery (NRMM). Available at: https://www.london.gov.uk/programmes-and-strategies/environment-and-climate-change/pollution-and-air-quality/nrmm.

6.0 Operational Phase Assessment

This section presents the potential air quality impacts and effects associated with the operation of the Proposed Development.

6.1 Road Traffic Screening Assessment

SLR, the appointed Transport Consultant, has provided operational phase traffic flows as trip generation for the Proposed Development.

The trip generation has accounted for the additional trips on the local road network associated with the change of use and the addition of extra floorspace associated with the proposed mezzanine.

The Proposed Development will generate an additional +146 total vehicles as a 24-hour AADT on the local road network, consisting of +143 LDVs and +3 HDVs as a 24-hour AADT. This equates to +73 total vehicles accessing via the entrance to the Ruislip Retail Park and +73 total vehicles egressing via the exit of the Ruislip Retail Park. As the Retail Park operates a one-way system for access / egress, the +146 total vehicles will not occur at any specific point across the network.

The distributed trip generation in consideration of both arrivals and departures on the road links immediately adjoining the Site are presented in Table M.

Table M: Proposed Trip Generation (AADT)

Road Link	Total AADT	LDV AADT	HDV AADT	EPIC & IAQM Screening Criteria	
				LDV	HDV
Victoria Road (East of Retail Park Entrance) (A)	+60	+58	+1	100 (B)	25 (B)
Victoria Road (West of Retail Park Entrance) (A)	+73	+72	+2	500	100
Field End Road (North of Retail Park Exit)	+88	+86	+2	100	25
Field End Road (South of Retail Park Exit)	+15	+15	0	100	25

Table Note:

(A) Discrepancy in total AADT, LDV AADT and HDV AADT due to rounding.

(B) Victoria Road (East of Retail Park Entrance) is not located within an AQMA but is within 200m of the Harrow AQMA.

Based on the above, trips associated with the Proposed Development are found to be below the relevant EPIC & IAQM screening criteria. Therefore, road traffic emission impacts associated with the operation of the Proposed Development can be considered as having an ‘insignificant’ effect on local air quality and require no further consideration.

In addition to the immediate links presented above, the appointed Transport Consultant has confirmed that +18 LDVs and 0 HDVs as a 24-hour AADT are predicted to travel through the ‘A40 / South Ruislip’ AQFA.

7.0 Air Quality Neutral Assessment

This section presents the air quality neutral assessment for the Proposed Development in accordance with the GLA AQN guidance.

7.1 Building Emissions

To be provided as an addendum following the receipt of additional information.

7.2 Transport Emissions

As detailed in Section 6.1, SLR has confirmed the operational phase trip generation associated with the Proposed Development is +143 LDVs as an AADT, excluding servicing vehicles[35].

The Transport Emissions Benchmark (TEB) trip rate for the Proposed Development has been calculated and is presented in Table N.

Table N: Air Quality Neutral – TEB Calculation

Use	Gross Internal Area (m^2)	Benchmark Trip Rate (trips per annum) (B)	TEB (trips/annum) (C)
Retail (Superstore) (A)	1,332	216	287,712

Table Notes:

(A) The application of 'Retail (Superstore)' provides a more conservative benchmark than the application of 'Retail (Convenience)'.
(B) Based on the 'Outer London' benchmark.
(C) Figures are rounded to whole numbers.

The predicted road traffic trip rate associated with the Proposed Development is presented in Table O.

As per the GLA AQN guidance, the calculation of the annual development trip rate should exclude trips generated by non-occupiers. However, this information was not available at the time of assessment. As such, the AQN calculation has assumed that 100% of LDV trips constitute development occupiers (i.e. patrons of the proposed Next retail use), as a conservative assessment.

Table O: Air Quality Neutral – Predicted Transport Emissions

Daily Trip Rate (trips/day)	Annual Trip Rate (trips/annum) (A)
143	52,195

Table Note:

(A) Figures are rounded to whole numbers. Assumes a 7-day week / 365 operation per year as a conservative approach.

[35] The GLA AQN Guidance states: The TEB only estimates car or light van trips undertaken directly by the development occupiers (residents, businesses etc and their staff / customers). The TEB does not include 'operational' trips generated by the developments. Deliveries and servicing, taxis or heavy vehicle movements from non-occupiers' assessment of these trips, for example, should be captured in the wider air quality impact assessment where one is required and should therefore be excluded from TEB calculations.

The annual trip rate associated with occupants of the Proposed Development (52,195 trips/annum) is less than the total TEB (287,712 trips/annum). On this basis, the Proposed Development is considered to be ‘air quality neutral’ in terms of transport emissions in accordance with the GLA AQN guidance.

8.0 Mitigation Measures

This section presents any proportionate mitigation measures required during the construction and operational phases of the Proposed Development.

8.1 Construction Phase Emissions

8.1.1 NRMM Emissions

NRMM and plant should be well maintained. If any emissions of dark smoke occur, then the relevant machinery should stop immediately and any problem be rectified. In addition, the following controls should apply to NRMM:

- All NRMM should use fuel equivalent to ultralow sulphur diesel;
- All NRMM should comply with the current Staged Emission Standards (see Section 5.1), and as outlined by the Vehicle Certification Agency (VCA)[36];
- All NRMM should be fitted with Diesel Particulate Filters (DPF) conforming to defined and demonstrated filtration efficiency (load/duty cycle permitting);
- The on-going conformity of plant retrofitted with DPF, to a defined performance standard; and
- Implementation of fuel conservation measures including instructions to throttle down or switch off idle construction equipment; switch off the engines of trucks while they are waiting to access the site and while they are being loaded or unloaded, ensure equipment is properly maintained to ensure efficient fuel consumption.

Successful implementation of the above mitigation measures would ensure that emissions from NRMM used during construction are ‘not significant’.

8.2 Operational Phase

8.2.1 Road Traffic Emissions

On the basis of the screening assessment (see Section 6.1), road traffic impacts associated with the operation of the Proposed Development can be considered as having an ‘insignificant’ effect on local air quality with regard to relevant human receptors.

As such, long-term scheme-specific mitigation measures in relation to operational effects on human health arising from road traffic emissions are, therefore, not considered to be necessary.

8.2.2 Damage Cost Calculation

In accordance with the LBoH AQAP[37] and the LBoH Local Plan (Part 2)[17], a Damage Cost Calculation has been undertaken to account for the +18 AADT which are predicted to travel within the ‘A40 / South Ruislip’ AQFA, as discussed in Section 6.1. The Damage Cost Calculation is considered to be conservative in this instance, as it utilises the full predicted Proposed Development trips (i.e. +146 AADT) instead of the +18 AADT which are predicted to occur on roads within the AQFA.

[36] https://www.vehicle-certification-agency.gov.uk/vehicle-type-approval/what-is-vehicle-type-approval/non-road-mobile-machinery-nrmm/.

[37] London Borough of Hillingdon, Air Quality Action Plan 2019 - 2024, May 2019.

The damage cost calculation has utilised the latest version of the Emissions Factors Toolkit (EFT) (presently EFT v12.1[38]), as produced by Defra[19], to calculate Proposed Development generated road traffic emissions of NOx (as NO_2) and PM_{10}, with inputs derived from the National Travel Survey (NTS)[39] in accordance with the Defra damage cost guidance.

Development-generated trips were provided by SLR. In summary, the Proposed Development is predicted to generate a total of +143 LDVs and +3 AADT HDVs as a 24-hour AADT.

Reference should be made to Table P and Table Q for a presentation of the emission calculation inputs and outputs, respectively.

Table P: Damage Cost Calculation - Inputs

Input Parameter	Unit 2, Ruislip Retail Park				
	2025	2026	2027	2028	2029
Total trips (AADT) (A)	146 (2.36% HDV)				
Average trip length (km) (B)	10				
Speed	30mph / 48kph				
2022 Base Damage cost NOx (£ per tonne) (C) (D)	£11,682				
2022 Base Damage cost $PM_{2.5}$ (£ per tonne) (C) (D)	£84,548				

Table Notes:

(A) Provided by SLR.

(B) Average trip length from the National Travel Survey: England.

(C) 'Damage Cost' is based upon 'Road Transport'.

(D) An uplift of 2% per year (from the 2022 base-year value) has been applied to calculate the corresponding damage cost over the 5-year period.

Table Q: Damage Cost Calculation - Outputs

Output Parameter	Year					5 – Year Total
	2025	2026	2027	2028	2029	
Annual NOx Emissions (tonnes/year)	0.06	0.05	0.04	0.03	0.03	0.20
Annual PM_{10} Emissions (tonnes/year)	0.02	0.02	0.02	0.02	0.02	0.09
Annual $PM_{2.5}$ Emissions (tonnes/year) (A)	0.01	0.01	0.01	0.01	0.01	0.06
NOx contribution (£) (rounded up)	708	582	477	410	347	2,524
$PM_{2.5}$ contribution (£) (rounded up)	1,050	1,053	1,056	1,060	1,064	5,284
Total contribution (£) (rounded up)	1,758	1,635	1,533	1,470	1,411	7,808
Table Notes:						

[38] Defra, EFT v12.1, (2024). Available at: https://laqm.defra.gov.uk/review-and-assessment/tools/emissions-factors-toolkit.html.

[39] National Travel Survey: England 2019, Department for Transport, August 2020.

Output Parameter	Year					5 – Year Total
	2025	2026	2027	2028	2029	
(A) Converted utilising 'Road Transport' PM_{10} to $PM_{2.5}$ factor of 0.622.						

In summary, over a 5-year period the calculated damage costs for the Proposed Development are £7,808.

The above damage costs provide an indicator of the financial commitment required to offset emissions. The amount (value) determined is not a direct indication of the monetary contribution required to off-set impacts upon air quality. Rather, the scale of damage cost will determine the level of appropriate mitigation required for specific proposals. The Interdepartmental Group on Costs and Benefits (IGCB) department of Defra, who produced the 'Damage Cost' guidance, has stated that[40]:

> *"The damage costs methodology was designed for economic appraisal of government policies that lead to air quality changes and wider cost-benefit analysis. While our guidance can be used to estimate the damage to society caused per tonne of emissions, we don't provide any recommendations for the right level of compensation required to offset the impacts of air pollution."*

[40] E-mail communication between Interdepartmental Group on Costs and Benefits department of Defra, and SLR Consulting Ltd, dated 28th January 2016.

9.0 Conclusions

SLR Consulting Ltd has been commissioned by Q&A Planning Limited to undertake an AQA to support a planning application for the change-of-use and the addition of mezzanine floorspace at Unit 2, Ruislip Retail Park, Ruislip.

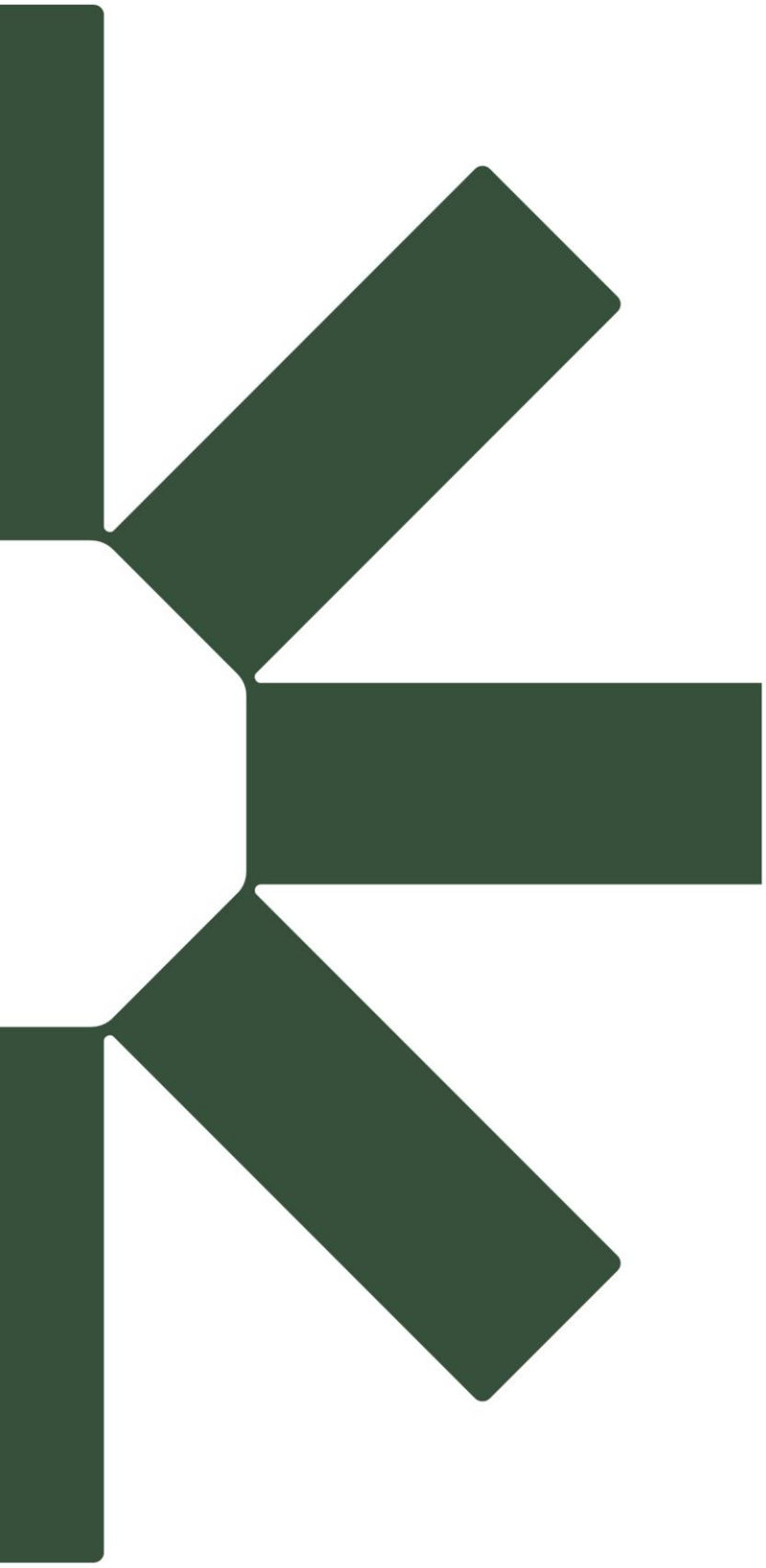
9.1 Construction Phase

Successful implementation of the appropriate mitigation measures (see Section 8.1.1) would ensure that emissions from NRMM used during construction are ‘not significant’.

9.2 Operational Phase

The Proposed Development is predicted to generate trips below the relevant EPIC & IAQM screening criteria on the local road network. As such, road traffic impacts associated with the operation of the Proposed Development can be considered as having an ‘insignificant’ effect on local air quality with regard to relevant human receptors.

Furthermore, the Proposed Development is considered to be ‘air quality neutral’ in terms of transport emissions.



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