



**HEALEY DEVELOPMENT SOLUTIONS
(HAYES) LIMITED
STANFORD HOUSE, 9 NESTLES AVENUE
HAYES, LONDON**

AIR QUALITY ASSESSMENT

JULY 2020



the journey is the reward

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Healey Development Solutions (Hayes) Limited
Stanford House, 9 Nestles Avenue
Hayes, London
Air Quality Assessment

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Appendix A: Construction Dust Assessment

1 Introduction

- 1.1 Mayer Brown Limited has been instructed by Healey Development Solutions (Hayes) Limited to undertake an Air Quality Assessment (AQA) in support of the forthcoming planning application for the redevelopment of Stanford House, 9 Nestles Avenue, Hayes, Hillingdon.
- 1.2 The site location in relation to the local highway network can be seen in **Figure 1.1** below.



Figure 1.1: Site Location in Relation to the Local Highway Network

- 1.3 The site is located to the north of Nestles Avenue in the London Borough of Hillingdon (LBH). Along the western façade lies 7 Nestles Avenue which accommodates a single building in similar industrial style. To the north lies the Squirrels industrial estate.

- 1.4 To the east lies the former Nestle Factory site which is currently under development to provide a mixed-use scheme comprising over 1300 homes and substantial industrial/distribution space.
- 1.5 The site currently comprises a single storey building with a 2-storey block to the south. The existing red line boundary is illustrated in **Figure 1.2** below.



Figure 1.2: Existing Red-Line Boundary

- 1.6 The application to which this report relates to seeks the demolition of the existing building and redevelopment of the site to provide 103 residential units over 11-storeys, together with car/cycle parking provision and associated landscaping.
- 1.7 This AQA has been undertaken in order to establish whether the site's location is considered suitable for the proposed use and quantify any likely air quality impacts upon the surrounding area associated with the construction and/or operation of the proposed development.
- 1.8 In the event that potential impacts are identified, specific mitigation measures will be recommended in order to minimise significant pollution impacts and help safeguard the health and well-being of any existing and proposed sensitive receptors within the local area.

1.9 The AQA is divided up into the following sections:

- **Section 2** – Legislation and Policy Context;
- **Section 3** – Assessment Methodology and Significance Criteria;
- **Section 4** – Baseline Site Conditions;
- **Section 5** – Evaluation of Potential Effects;
- **Section 6** – Air Quality Neutral Assessment;
- **Section 7** - Mitigation Measures; and
- **Section 8** – Residual Effects and Conclusions

2 Legislation and Policy Context

National Planning Policy

The Air Quality Strategy¹

- 2.1 The Air Quality Strategy (AQS) has been prepared following obligations imposed upon the UK Government to produce standards, objectives and measures for improving ambient air quality, following The Environment Act 1955.
- 2.2 The AQS sets out a framework for Local Authorities to reduce adverse health effects from ambient air pollution and ensures that international and national commitments are met, using the Local Air Quality Management (LAQM) system.
- 2.3 The AQS sets standards and objectives for pollutants to protect human health, vegetation and ecosystems. The pollutant objectives are the future dates by which each standard is to be achieved, taking into account economic considerations, practical and technical feasibility.
- 2.4 The main air quality pollutants of concern with regards to new developments such as this one is the traffic related pollutants of Nitrogen Dioxide (NO₂) and Particulate Matter (PM₁₀ and PM_{2.5}).
- 2.5 The relevant air quality objectives, as they currently apply in the United Kingdom are presented in **Table 2.1** below.

Pollutant	Air Quality Objectives		Date to be achieved by
	Objectives	Measured as	
Nitrogen Dioxide (NO ₂)	200 µg m ⁻³	1-hour mean. Not to be exceeded more than 18 times a year	31 December 2005
	40 µg m ⁻³	Annual mean	
Particles (PM ₁₀)	50 µg m ⁻³	24-hour mean. Not to be exceeded more than 35 times a year	31 December 2004
	40 µg m ⁻³	Annual mean	

¹ Department of Environment, Food and Rural Affairs in Partnership with the Scottish Executive, Welsh Assembly Government and Department of the Environment Northern Ireland. The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2011). The Stationery Office (TSO). Norwich.

Particles – Except Scotland (PM _{2.5})	25 µg m ⁻³	Annual mean	2020
Particles – UK Urban Areas (PM _{2.5})	Target of 15% reduction in concentrations at urban background		Between 2010 and 2020

Table 2.1: Air Quality Objectives in the UK

[Air Quality Standards Regulations 2010](#)

2.6 The binding limits for concentrations in outdoor air of key air pollutants that impact public health was set by the 2008 ambient air quality directive (2008/50/EC) which replaced nearly all previous EU air quality legislation. The limit values were made law in England through the Air Quality Standards Regulations 2010. This imposes duties on the Secretary of State relating to achieving limit values.

2.7 With regards to dust, it is recognised that major construction works may give rise to dust emissions within the PM₁₀ and PM_{2.5} size fraction and it is noted within section 79 of the Environmental Protection Act 1990 that a statutory nuisance is defined as:

‘Any dust or effluvia arising from an industrial, trade or business premises and being prejudicial to health or a nuisance’

[National Planning Policy 2019²](#)

2.8 The NPPF was updated in February 2019 and supersedes all the previous versions. The purpose of the document is to set out the Government’s policies in relation to planning for England and how these should be applied.

2.9 Section 9 of the NPPF refers to promoting sustainable transport. In relation to air quality, the document states that:

“Transport issues should be considered from the earliest stages of plan-making and development proposals, so that:

....

c) opportunities to promote walking, cycling and public transport use are identified and pursued;

²Ministry of Housing, Communities and Local Government, February 2019, National Planning Policy Framework, London

d) the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains

...

2.10 Additionally, it states:

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

2.11 Section 15 of the document also refers to air quality within planning. Paragraph 180 states:

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

2.12 Paragraph 181 adds 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...”

[Planning Practice Guidance – Air Quality³](#)

2.13 The Planning Practice Guidance is used to support the National Planning Policy Framework and is published online. The guidance on air quality was published in 2014 and provides various principles on how planning can take account of the impact of new development on air quality.

2.14 The guidance refers to the specific issues that may need to be considered when assessing air quality impacts. It states:

³ Ministry of Housing, Communities and Local Government, March 2014, Planning Practice Guidance-Air Quality, Ministry of Housing, Communities and Local Government, London. Available on: <https://www.gov.uk/guidance/air-quality--3>

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

- Lead to changes (including any potential reductions) in vehicle-related emissions in the immediate vicinity of the proposed development or further afield...*
- Introduce new point sources of air pollution...*
- Expose people to harmful concentrations of air pollutants...*
- Give rise to potentially unacceptable impacts (such as dust) during construction for nearby sensitive locations;*
- Have a potential adverse effect on biodiversity...”*

2.15 Guidance on how detailed an air quality assessment need to be is provided and states:

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

2.16 Reference to how air quality can be mitigated states that:

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

[London Local Air Quality Management Technical Guidance 2019 \(LLAQM TG.19\)⁴](#)

2.17 The LLAQM framework is the required process used by local authorities to review and improve air quality within their areas. After a review and successful consultation, the new LLAQM was published in October 2019.

2.18 The LLAQM TG.19 was prepared by the Greater London Authority (GLA) to support London boroughs in carrying out their duties under the Environment Act 1995 and connected regulations.

2.19 In response to an Air Quality Management Area (AQMA) being declared, London boroughs should produce an Air Quality Action Plan within 12 months. Once a draft has been prepared, the action plan should be submitted to the GLA for initial appraisal prior the public consultation. London Boroughs should update their Air Quality Action Plan every 5 years as a minimum, to reflect current policy and to improve their effectiveness.

⁴ Greater London Authority (GLA), 2019, London Local Air Quality Management (LLAQM) Technical Guidance 2019 (LLAQM.TG (19)), GLA, London

Regional Planning Policy

[The London Plan – Consolidated with Alterations \(March 2016\)](#)⁵

2.20 The London Plan is currently under review and will replace this document once adopted. Under legislation establishing the Greater London Authority (GLA), the Mayor has to produce a spatial development strategy which has become – ‘the London Plan’. The London Plan is the overall strategic plan setting out an integrated economic, environmental, transport and social framework for the development of London.

2.21 Policy 5.3: Sustainable Design and Construction refers to air quality and requires that:

“ ...

Major development proposals should meet the minimum standards outlined in the Mayor’s supplementary planning guidance and this should be clearly demonstrated within a design and access statement. The standards include measures to achieve other policies in this Plan and the following sustainable design principles:

...

d minimising pollution (including noise, air and urban runoff)

... ”

2.22 Policy 5.4: Retrofitting adds:

“...programmes should reduce carbon dioxide emissions, improve the efficiency of resource use (such as water) and minimise the generation of pollution and waste from existing building stock...”

2.23 Policy 5.7: Renewable Energy relates to air quality and states that:

“ ...

All renewable energy systems should be located and designed to minimise any potential adverse impacts on biodiversity, the natural environment and historical assets, and to avoid any adverse impacts on air quality.”

2.24 Policy 7.14: Improving Air Quality adds:

“Development proposals should:

a minimise increased exposure to existing poor air quality and make provision to address local problems of air quality (particularly within Air Quality Management Areas (AQMAs)

⁵ Greater London Authority (GLA), 2016, The London Plan- The Spatial Development Strategy for London Consolidated with Alteration
Since 2011, GLA, London

and where development is likely to be used by large numbers of those particularly vulnerable to poor air quality, such as children and older people)....

b promote sustainable design and construction to reduce emissions from the demolition and construction of buildings following the best practice guidance in the GLA and London Councils...

c be at least 'air quality neutral' and not lead to further deterioration of existing poor air quality...

d ensure that where provision needs to be made to reduce emissions from a development, this is usually made on-site...

e where the development requires a detailed air quality assessment and biomass boilers are included, the assessment should forecast pollutant concentrations..."

[The London Plan – Intend to Publish \(December 2019\)⁶](#)

2.25 The Examination in Public (EiP) on the London Plan was held between 15th January and 22nd May 2019. The Panel of Inspectors appointed by the Secretary of State issued their report and recommendations to the Mayor on 8th October 2019.

2.26 The Mayor has considered the Inspectors' recommendations and, on the 9th December 2019, issued to the Secretary of State his intention to publish the London Plan along with a clean and tracked version of the Intend to Publish London Plan.

2.27 In Chapter 1 Planning London's Future - Good Growth, GG3: Creating a Healthy city, relates to air quality and states:

"To improve Londoners' health and reduce health inequalities, those involved in planning and development must:

...

F. seek to improve London's air quality, reduce public exposure to poor air quality and minimise inequalities in levels of exposure to air pollution ..."

2.28 Policy D3B: Optimising site capacity through the design-led approach refers to air quality and requires that:

"Development proposals should:

...

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

⁶ Greater London Authority (GLA), (2019), Intend to Publish London Plan, GLA, London

...

2.29 Paragraph 3.3.9 adds:

“Measures to design out exposure to poor air quality and noise from both external and internal sources, should be integral to development proposals and be considered early in the design process. Characteristics that increase pollutant or noise levels, such as poorly-located emission sources, street canyons and noise sources should also be designed out wherever possible. Optimising site layout and building design can also reduce the risk of overheating as well as minimise minimising carbon emissions by reducing energy demand.”

2.30 Chapter 9 of the documents refers to Policy SI1: Improving air quality, which states:

“A. Development plans, through relevant strategic, site specific and area-based policies should seek opportunities to identify and delivery 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 exceedance 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*
- 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. “

2.31 Paragraph 9.11 adds:

“Poor air quality is a major issue for London which is failing to meet requirements under legislation. Poor air quality has direct impacts on the health, quality of life and life expectancy of Londoners. The impacts tend to be most heavily felt in some of London’s most deprived neighbourhoods, and by people who are most vulnerable to the impacts such as children and older people. London’s air quality should be significantly improved and exposure to poor air quality, especially for vulnerable people, should be reduced.”

2.32 Paragraph 9.1.15 confirms that:

“Where the Air Quality Assessment or the air quality positive approach assumes that specific measures are put in place to improve air quality, prevent or mitigate air quality impacts, these should be secured through the use of planning conditions or s106 agreements. For instance, if ultra-low NOx boilers are assumed in the assessment, conditions should require the provision of details of the installed plant prior to the occupation of the building, or where larger plant is used for heating, post installation emissions tests should be required to ensure that the modelled emission parameters are achieved.”

2.33 Under Chapter 10 – Transport, paragraph 10.4.3 refers to air quality and states:

“It is important that development proposals reduce the negative impact of development on the transport network and reduce potentially harmful public health impacts. The biggest transport-related impact of development on public health in London is the extent to which it enables physical activity from walking, cycling and using public transport. The other main impacts on public health relate to air quality...”

[London Environment Strategy, May 2018⁷](#)

2.34 Changes made by the Localism Act 2011 brought in a requirement for the original six separate environmental strategies to be brought together into a single London Environment Strategy (“the strategy”) under section 351A of the Greater London Authority Act 1999. This included The Mayor’s Air Quality Strategy – Cleaning the Air, 2010.

2.35 The London Environment Strategy sets out an ambitious vision for improving London’s environment for the benefit of all Londoners. This strategy sets out a vision for London in 2050, that will realise the potential of London’s environment to support good health and quality of life and to make the city a better place to live, work and do business. The Mayor wants London to be the world’s greenest global city. This will mean making it: Greener, cleaner and ready for the future.

2.36 The London Environment Strategy sets out bold policies and proposals in seven policy areas, to make this vision a reality. The key aims for London are:

- *“for London to have the best air quality of any major world city by 2050, going beyond the legal requirements to protect human health and minimise inequalities;*
- *for London to be the world’s first National Park City, where more than half of its area is green, where the natural environment is protected, and where the network of green infrastructure is managed to benefit all Londoners;*
- *for London to be a zero carbon city by 2050, with energy efficient buildings, clean transport and clean energy;*
- *to make London a zero waste city. By 2026 no biodegradable or recyclable waste will be sent to landfill, and by 2030 65 per cent of London’s municipal waste will be recycled;*
- *for London and Londoners to be resilient to severe weather and longer-term climate change impacts. This will include flooding, heat risk and drought;*

⁷ Greater London Authority (GLA), May 2018, London Environment Strategy, GLA, London

- *for Londoners' quality of life to be improved by reducing the number of people adversely affected by noise and promoting more quiet and tranquil spaces; and*
- *for London to transition to a low carbon circular economy"*

2.37 Chapter 4: Air Quality has the following aim:

"London will have the best air quality of any major world city by 2050, going beyond the legal requirements to protect human health and minimise inequalities."

2.38 Objective 4.1 adds:

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

2.39 Policy 4.1.1 states:

"Make sure that London and its communities, particularly the most disadvantaged and those in priority locations, are empowered to reduce their exposure to poor air quality".

2.40 Policy 4.1.2 stated the following:

"Improve the understanding of air quality health impacts to better target policies and action".

2.41 Objective 4.2 adds:

"Achieve legal compliance with UK and EU Limits as soon as possible, including by mobilising action from London Boroughs, Government and other partners"

2.42 Policy 4.2.1 refers to reducing emissions and switching to more sustainable travel. It states:

"Reduce emissions from London's road transport network by phasing out fossil fuelled vehicles, prioritising action on diesel, and enabling Londoners to switch to more sustainable forms of transport".

2.43 Policy 4.2.2 adds:

"Reduce emissions from non-road transport sources, including by phasing out fossil fuels"

2.44 Policy 4.2.3 states:

"Reduce emissions from non-transport sources, including by phasing out fossil fuels".

2.45 Policy 4.2.4 states:

"The Mayor will work with the government, the London boroughs and other partners to accelerate the achievement of legal limits in Greater London and improve air quality"

- 2.46 Policy 4.3.1 and 4.3.2 refer to meeting World Health Organization (WHO) air quality guidelines, establishing new targets for pollutants and zero emission transport. They state:

“The Mayor will establish new targets for PM_{2.5} and other pollutants where needed. The Mayor will seek to meet these targets as soon as possible, working with government and other partners”

“The Mayor will encourage the take up of ultra low and zero emission technologies to make sure London’s entire transport system is zero emission by 2050 to further reduce levels of pollution and achieve WHO air quality guidelines”

- 2.47 Policy 4.3.3 states:

“Phase out the use of fossil fuels to heat, cool and maintain London’s buildings, homes and urban spaces, and reduce the impact of building emissions on air quality”.

- 2.48 Policy 4.3.4 states:

“Work to reduce exposure to indoor air pollutants in the home, schools, workplace and other enclosed spaces”.

[Sustainable Design and Construction – Supplementary Planning Guidance⁸](#)

- 2.49 This document provides guidance on how boroughs can take forward the new approaches set out in the London Plan, including carbon-off-setting, and the application of ‘air quality neutral’ assessments.

- 2.50 Policy 5.3: Sustainable Design and Construction requires that Major Development should apply a number of Sustainable Design Principles including:

“ ...

d minimising pollution (including noise, air and urban runoff)’

...”

- 2.51 It also refers to the Mayor’s strategic target to:

“ ...

contribute to the achievement of EU limit values for air pollution

...”

- 2.52 Additional air quality specific priorities which cross reference with the requirements of the London Plan Policies (LPP) include:

⁸ Greater London Authority (GLA), April 2014, Sustainable Design and Construction Supplementary Planning Guidance, GLA, London

- Developers are to design their schemes so that they are at least ‘air quality neutral’ (LPP 7.14);
- Developments should be designed to minimise the generation of air pollution. (LPP 5.3 and 7.14);
- Developments should be designed to minimise and mitigate against increased exposure to poor air quality (LPP 3.2, 5.3, and 7.14);
- Developers should select plant that meets the standards for emissions from combined heat and power and biomass plants set out in Appendix 7 (LPP 7.14); and
- Developers and contractors should follow the guidance set out in the emerging The Control of Dust and Emissions during Construction and Demolition SPG when constructing their development (LPP 5.3 and 7.14).

2.53 The principles of the 2013 draft Control of Dust and Emissions during Demolition and Construction (and subsequent 2014 final issue) SPG are embedded within the 2014 IAQM document ‘Guidance on the assessment of dust from demolition and construction and this has been applied within this assessment.

Local Planning Policy

[Local Plan: Part 1 Strategic Policies \(2012\)](#)⁹

2.54 The Hillingdon Local Plan: Part 1 is the key strategic planning document for the Borough. Part 1 of the local plan includes broad policies for steering and shaping development.

2.55 Policy EM1: Climate Change Adaptation and Mitigation states:

“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.

...”

2.56 Policy EM8: Land, Water, Air and Noise adds:

⁹ London Borough of Hillingdon (LB), 2012, Local Plan: Part 1 Strategic Policies, LBH. Available at: <https://archive.hillingdon.gov.uk/article/24461/Local-Plan-Part-1---Strategic-policies>. Accessed on 01/07/20

“ ...

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 of 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 a AQMA to fund additional air quality monitoring stations to assist in management air quality improvements.

...”

[Local Plan: Part 2 – Development Management Policies \(2020\)¹⁰](#)

2.57 This document forms part of Hillingdon's Local Plan Part 2. Its purpose is to provide detailed policies that will form the basis of the Council's decisions on planning applications.

2.58 Policy DME1 1: Living Walls and Roofs and on-site Vegetation states:

“All development proposals are required to comply with the following:

- i) All major development should incorporate living roofs and/or walls into the development. Suitable justification should be provided where living walls and roofs cannot be provided; and*
- ii) Major development in 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.”*

¹⁰ London Borough of Hillingdon (LBH), 2020, Local Plan Part 2 – Development Management Policies, LBH. Available at: <https://archive.hillingdon.gov.uk/lpp2>. Accessed on 01/07/20.

2.59 Policy DMEI 14: Air Quality adds:

“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.”

2.60 Policy DMT 1: Managing Transport Impacts also relates to air quality and states:

“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.

...”

2.61 Policy DMT 2: Highways Impacts adds:

“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;

...”

[Local Plan Part 2: Site Allocation and Designations \(2020\)¹¹](#)

2.62 The development is within Site B of the site allocation SA 5: Land to the South of the Railway, including Nestle Site, which states:

“This is an important strategic site for Hayes town and the Borough as a whole. The Council will support proposals that meet the following criteria:

¹¹ London Borough of Hillingdon (LBH), 2020, Local Plan Part 2 – Site Allocations and Designations, LBH. Available at: <https://archive.hillingdon.gov.uk/lpp2>. Accessed on 01/07/20

...

- *The provision of 300 residential units.*
- *The provision of appropriate community infrastructure to support the overall quantum of development, including education as necessary.*

...

As a preference Sites A, B and C should form a comprehensive development scheme across the whole site....”

2.63 This air quality assessment has taken into consideration all the above policies and guidelines.

3 Assessment Methodology and Significance Criteria

3.1 This section outlines the assessment methodology and the criteria that have been used to assess the significance of risk associated with the proposed development.

3.2 **Table 3.1** below summarises the key information sources used in this assessment.

Data Sources	Details
Department for Environment, Food and Rural Affairs (Defra)	The Local Air Quality Management Tools contain information pertaining to monitoring networks across the UK and provides tools, which aid in the estimation of pollutant concentrations with reference to the year of study. Defra (2017). LAQM Background Maps - 1 x 1 km grid background maps for NO _x , NO ₂ , PM10 and PM _{2.5}
Environmental Protection UK (EPUK) & Institute of Air Quality Management (IAQM)	EPUK (2010). Development Control: Planning For Air Quality, (2010 Update) This guidance has been produced to help ensure that air quality is properly accounted for in local development control processes. IAQM (2014). Guidance on the assessment of dust from demolition and construction The EPUK & IAQM Land-Use Planning & Development Control: Planning for Air Quality (2017) ¹² provides advice and guidance on how an air quality assessment should be undertaken.
The National Atmospheric Emissions Inventory (NAEI) ¹³	This is a website run by Ricardo AEA Technology where emission data can be obtained which relates the vehicle fleet composition for the year of study.
London Councils	Air Quality and Planning Guidance ¹⁴ . This guidance is aimed at local authorities, developers and their consultants, and provides technical advice on how to deal with planning applications that could have an impact on air quality.
Greater London Authority (GLA), Air Quality Consultants and Environ	Sustainable Design and Construction – Supplementary planning Guidance (2014) ¹⁵ . Air Quality Neutral Planning Support Update: GLA 80371(2014) ¹⁶ . This report has been commissioned by the GLA to provide support to the development of the Mayor's policy related to "air quality neutral" developments. Non-Road Mobile Machinery (NRMM) Low Emissions Zone. From 1st of September 2015 the NRMM regulations apply to all major developments, within London, using NRMM between 37 and 560kW. LLAQM Technical Guidance, TG (19) ¹⁷ : Published by GLA in 2019 in order to support London Boroughs in carrying out their duties under the Environmental Act 1995 and connected regulations.

Table 3.1: Key Information Sources

¹² Environmental Protection UK & Institute of Air Quality Management (EPUK & IAQM) (2017) Land-Use Planning & Development Control: Planning for Air Quality, EPUK & IAQM, London

¹³ <http://naei.defra.gov.uk>

¹⁴ London Councils. (2007), Air Quality and Planning Guidance, The London Air Pollution Planning and the Local Environment (APPLE) working group, London

¹⁵ Mayor of London (2014). Sustainable Design and Construction – Supplementary Planning Guidance (SPG). Greater London Authority (GLA). London.

¹⁶ Air Quality Consultants (AQC) (2014). Air Quality Neutral Planning Support Update: GLA80371. AQC. Bristol

¹⁷ Greater London Authority (GLA) (2019) London Local Air Quality Management (LLAQM) Technical Guidance (LLAQM.TG (19)). DEFRA. London

Scope of Air Quality Assessment

- 3.3 This Air Quality Assessment considers the suitability of the site for the proposed development and assesses whether any significant air quality impacts are anticipated as a result of the construction and/or the operation of the proposed development.
- 3.4 A staged assessment approach has been adopted. This ensures that the approach taken for the assessment of risk is proportional to the risk of an unacceptable impact being caused. Where a simple review of the likely impacts associated with the proposed development clearly demonstrates that the risk of a health/annoyance impact is negligible, this will be sufficient to conclude that no further or detailed assessment is necessary.
- 3.5 In cases where the risk involved cannot be regarded as negligible, a more detailed and quantitative assessment will be undertaken.
- 3.6 The specific methodology and impact criteria used in this assessment is detailed below.

Dust Assessment

- 3.7 The Institute of Air Quality Management (IAQM) published the 'Guidance on the assessment of dust from demolition and construction' in February 2014 which provides guidance on how to assess and mitigate the impacts of dust emissions from demolition and construction sites. This document was updated in June 2016 (Version 1.1) and supersedes the 2012 IAQM guidance on the assessment of the impacts of construction on air quality and the determination of their significance. This approach is broadly replicated within the Greater London Authority (GLA) construction dust document (2014) and provides detail for a clear and concise construction dust assessment.
- 3.8 The potential impacts associated with construction activities will be assessed in accordance with the IAQM Guidance. IAQM Guidance provides a five-step assessment procedure to assess the potential impacts of construction dust pre-mitigation, provide mitigation measures specific to the risk and assess the post-mitigation impacts.
- 3.9 It recommends that the assessment procedure follows the following framework:
- Screen the requirement for a more detailed assessment;
 - Assess the risk of dust impacts of the four phases of construction (demolition, earthworks, construction and trackout), taking into account:
 - the scale and nature of the works, which determines the potential Dust Emission Magnitude; and
 - the sensitivity of the area.
 - Determine the site-specific mitigation for the potential activities;

- Examine the residual effects and determine whether or not these are significant; and
- Prepare the Construction Dust Assessment.

3.10 In the process of screening the need for a detailed assessment, the following criteria is used:

“An assessment will normally be required where there is:

- a ‘human receptor’ within:
 - 350m of the boundary of the site; or
 - 50m of the route(s) used by construction vehicles on the public highway, up to 500m from the site entrance(s).
- an ‘ecological receptor’ within:
 - 50m of the boundary of the site; or
 - 50m of the route(s) used by construction vehicles on the public highway, up to 500m from the site entrance(s).”

3.11 When defining the sensitivity of an area/receptor, the factors within **Table 3.2** below are used.

Area Sensitivity	Human Receptors	Ecological Receptors
High	Very densely populated area, 10-100 dwellings within 20m of site. Annual mean concentrations of PM10 close to/in exceedance of the national objective (40 $\mu\text{g m}^{-3}$). Very sensitive receptors (e.g. residential properties, hospitals, schools, care homes).	Internationally or nationally designated site, the designated features may be affected by dust soiling. A location where there is dust sensitive species present.
Medium	Densely populated area, 1-10 dwellings within 20m of site. Annual mean concentrations of PM10 below the national objective (> 28 $\mu\text{g m}^{-3}$). Medium sensitivity receptors (e.g. office and shop workers).	Nationally designated site where the features may be affected by dust deposition. A location with a particularly important plant species where its dust sensitivity is unknown.
Low	Sparsely populated area, 1 dwelling within 20m of site. Annual mean concentrations well below the national objectives (< 28 $\mu\text{g m}^{-3}$). Low sensitivity receptors (e.g. public footpaths, playing fields, shopping streets).	Locally designated site where the features may be affected by dust deposition.

Table 3.2: IAQM Factors for Defining the Sensitivity of an Area

Building Emissions

3.12 Any emissions associated with the proposed energy strategy will be assessed in line with the recommendations provided within the Energy Statement prepared for same application by Mecserve Energy and Sustainability Consultants.

Transport Emissions.

3.13 The EPUK & IAQM Guidance – ‘Planning For Air Quality’ has been used to assess potential traffic impacts associated with the development.

3.14 **Table 3.3** below provides the criteria used for screening the need for an Air Quality Assessment.

The Development Will:	Indicative Criteria to proceed to an Air Quality Assessment
1. Cause a significant change in Light Duty Vehicle (LDV) traffic flows on roads with relevant receptors.	A change of LDV flows of: • more than 100 vehicles per day (vpd) within or adjacent to an AQMA or within 100m of an internationally or nationally designated habitat; and • more than 500 vpd elsewhere. Coupled with relevant receptors within: • 10m of roads with AADT flows 5,000 to 10,000 vpd; • 20m of roads with AADT flows 10,000 to 30,000 vpd; and • 30m of roads with AADT flows > 30,000 vpd.
2. Cause a significant change in Heavy Duty Vehicles (HDV) flows on local roads with relevant receptors.	A change of HDV flows of: • more than 25 vpd within or adjacent to an AQMA or within 100m of an internationally or nationally designated habitat; and • more than 100 vpd elsewhere. Coupled with relevant receptors within: • 10m of roads with AADT flows 5,000 to 10,000 vpd; • 20m of roads with AADT flows 10,000 to 30,000 vpd; and • 30m of roads with AADT flows > 30,000 vpd.
3. Cause a significant change in road alignment bringing roads closer to relevant receptors.	Where relevant receptors will be within: • 10m of roads with AADT flows 5,000 to 10,000 vpd; • 20m of roads with AADT flows 10,000 to 30,000 vpd; and • 30m of roads with AADT flows > 30,000 vpd.
4. Introduce a new junction near to relevant receptors.	The junction will cause vehicles to slow down and accelerate, e.g. traffic lights. Coupled with relevant receptors within 50m of the junction.
5. Introduce or change a bus station.	Where bus flows will be: • more than 25 vpd within or adjacent to an AQMA; and • more than 100 vpd elsewhere. Coupled with relevant receptors within: • 50m of the buses within the bus station.
6. Have an underground car park with extraction system.	The ventilation extract for the car park will be within 20m of a relevant receptor. Coupled with the car park having more than 100 movements per day (total in and out).
7. Have one or more substantial combustion processes.	Where the combustion unit is: • any centralised plant using biomass fuel; • a CHP unit > 15kW_e; • any other combustion plant with thermal input > 400kW_{th}; and • a standby emergency generator associated with a centralised energy centre.
Note – Where distances from the road are presented, they are from the edge of the nearest carriageway to the nearest relevant receptor, taking account of vertical and horizontal dimensions. Where traffic flows are presented they are Annual Average Daily Traffic (AADT) in vehicles per day (vpd). Where HDV flows are specified, they include lorries and buses. Where LDV's are specified they include cars and vans (with a gross vehicle weight ≤ 3.5 tonnes).	

Table 3.3: Indicative Criteria for Requiring an Air Quality Assessment

3.15 If any of the above criteria are met, then the significance of air pollution impacts must be assessed. This may either be a Simple or a Detailed Assessment. In accordance with the EPUK & IAQM Guidance, a Simple Assessment is one relying on already published information and without quantification of impacts, in contrast to a Detailed Assessment that must be completed with the aid of a dispersion model.

Air Quality Neutral Assessment

- 3.16 London's air quality problems are primarily a result of a very large number of sources each contributing a small amount. In light of these issues, both the London Plan and the 2018 London Environment Strategy make reference to new developments being "air quality neutral".
- 3.17 The Air Quality Neutral Planning Support Update: GLA 80371 (Air Quality Consultants and Environ, 2014) and Mayor of London's Sustainable Design and Construction – Supplementary Planning Guidance (SPG) (April 2014) set out the guidance on preparing air quality neutral assessments.
- 3.18 An air quality neutral assessment is considered required for the following developments:
- 10 or more residential dwellings (or where the area is not given, an area of more than 0.5 ha); or
 - For all other uses, where the floor space is 1,000 sqm or more (or the site area is 1ha or more)

Impact Criteria

- 3.19 In the event that the initial screening indicates that there is a potential risk of impact, guidance is provided also by EPUK & IAQM on how to determine the magnitude and the significance of any changes in air pollutant concentrations and/or exposure as a result of a proposed development.
- 3.20 This process takes the following into account:
- the magnitude of the change (% change of annual mean concentration);
 - the concentration relative to the Air Quality Strategy (AQS) objective (above or below the objective); and
 - the direction of change (adverse or beneficial).
- 3.21 The magnitude of an impact should be described by using the criteria set out in **Table 3.4** below. The criteria are based upon the change in pollutant concentration resulting from the proposed development as a percentage of the Air Quality Action Level (AQAL) which in this case is NO₂ and PM₁₀ annual mean objective levels of 40 µgm³.

Change Magnitude	NO ₂ /PM ₁₀ Annual Mean	No Days PM ₁₀ > µg m ⁻³
Large	Increase/decrease >10% (>4 µg m ⁻³)	Increase/decrease >4 days
Medium	Increase/decrease 6-10% (2.4-4 µg m ⁻³)	Increase/decrease 2-4 days
Small	Increase/decrease 2-5% (0.8-2 µg m ⁻³)	Increase/decrease 1-2 days
Imperceptible	Increase/decrease <1% (<0.4 µg m ⁻³)	Increase/decrease <1 day

Table 3.4: Impact Magnitude for Changes in NO₂ and PM₁₀ Concentrations

- 3.22 The significance of the impact will be dependent upon the magnitude of change in relation to the relevant AQAL. This is set out in **Table 3.5** below.

Long term average Concentration at receptor in assessment year.	% Change in concentration relative to Air Quality Action Level (AQAL)*			
	1	2-5	6-10	>10
75% or less of AQAL (<30 µg m ⁻³)	Negligible	Negligible	Slight	Moderate
76 – 94% of AQAL (30-38 µg m ⁻³)	Negligible	Slight	Moderate	Moderate
95 – 102% of AQAL (38-41 µg m ⁻³)	Slight	Moderate	Moderate	Substantial
103 – 109% of AQAL (41 - 44 µg m ⁻³)	Moderate	Moderate	Substantial	Substantial
110% or more of AQAL (>44 µg m ⁻³)	Moderate	Substantial	Substantial	Substantial

*Air Quality Action Level – in this case the objective levels.

Table 3.5: Impact Descriptors for Individual Receptors

- 3.23 Therefore, once the magnitude and the significance of the change has been established, the impact at each relevant receptor can be described. The impact magnitude at each receptor location can be described using the changes stated above as being of Imperceptible, Small, Medium or Large magnitude, or Negligible, Slight Moderate or Substantial significance and also as being either Temporary or Permanent.
- 3.24 The overall significance should be described separately for both the impact of emissions related to the proposed development on existing receptors, and for the impacts of emissions from existing source(s) on new exposure being introduced from the proposed development. This is discussed below.

Exposure Criteria

- 3.25 The London Councils Air Quality and Planning Guidance takes into account the now superseded Planning Policy Statement 23: Planning and Pollution Control and is aimed

at developers, their consultants and local authorities in order to ensure consistency in the approach to dealing with Air Quality and planning in London.

- 3.26 When determining both the significance of exposure to air pollution and the levels of mitigation required, consideration should be given to the Air Pollution Exposure Criteria (APEC). The APEC criteria is set out in **Table 3.6** below.

	Applicable Range Nitrogen Dioxide Annual Mean	Applicable Range PM ₁₀	Recommendation
APEC – A	> 5% below national objective	Annual Mean: > 5% below national objective 24 hr: > 1-day less than national objective	No air quality grounds for refusal; however, mitigation of any emissions should be considered.
APEC – B	Between 5% below or above national objective	Annual Mean: Between 5% above or below national objective 24 hr: Between 1-day above or below national objective.	May not be sufficient air quality grounds for refusal, however appropriate mitigation must be considered e.g., Maximise distance from pollutant source, proven ventilation systems, parking considerations, winter gardens, internal layout considered, and internal pollutant emissions minimised.
APEC – C	> 5% above national objective	Annual Mean: > 5% above national objective 24 hr: > 1-day more than national objective.	Refusal on air quality grounds should be anticipated, unless the Local Authority has a specific policy enabling such land use and ensure best endeavours to reduce exposure are incorporated. Worker exposure in commercial/industrial land uses should be considered further. Mitigation measures must be presented with air quality assessment, detailing anticipated outcomes of mitigation measures.

Table 3.6 Air Pollution Exposure Criteria

- 3.27 It should be noted that air quality is not well suited to the rigid application of a generic significance matrix to determine the overall significance of a development and individual receptor sensitivity should also be taken into account. Therefore, professional judgement should be employed throughout, and the assessment should take into account any site-specific considerations.
- 3.28 Both the impact and exposure criteria will be applied to the findings of this assessment, where required.

4 Baseline Site Conditions

Local Air Quality Management

- 4.1 The proposed development site falls within the jurisdiction of the London Borough of Hillingdon (LBH).
- 4.2 Under the Air Quality Strategy, there is a duty on all Local Authorities to consider the air quality within their boundaries and prepare an annual update report.
- 4.3 A review of the Air Quality Assessments undertaken by LBH has indicated that the Borough has declared one Air Quality Management Area (AQMA) which covers all parts of the Borough south of the Chiltern-Marylebone Railway line. The AQMA was declared by LBH in 2003, as a result of exceedances of the annual mean objectives for Nitrogen Dioxide (NO₂).
- 4.4 The proposed site in relation to the declared AQMA is illustrated in **Figure 4.1** below.

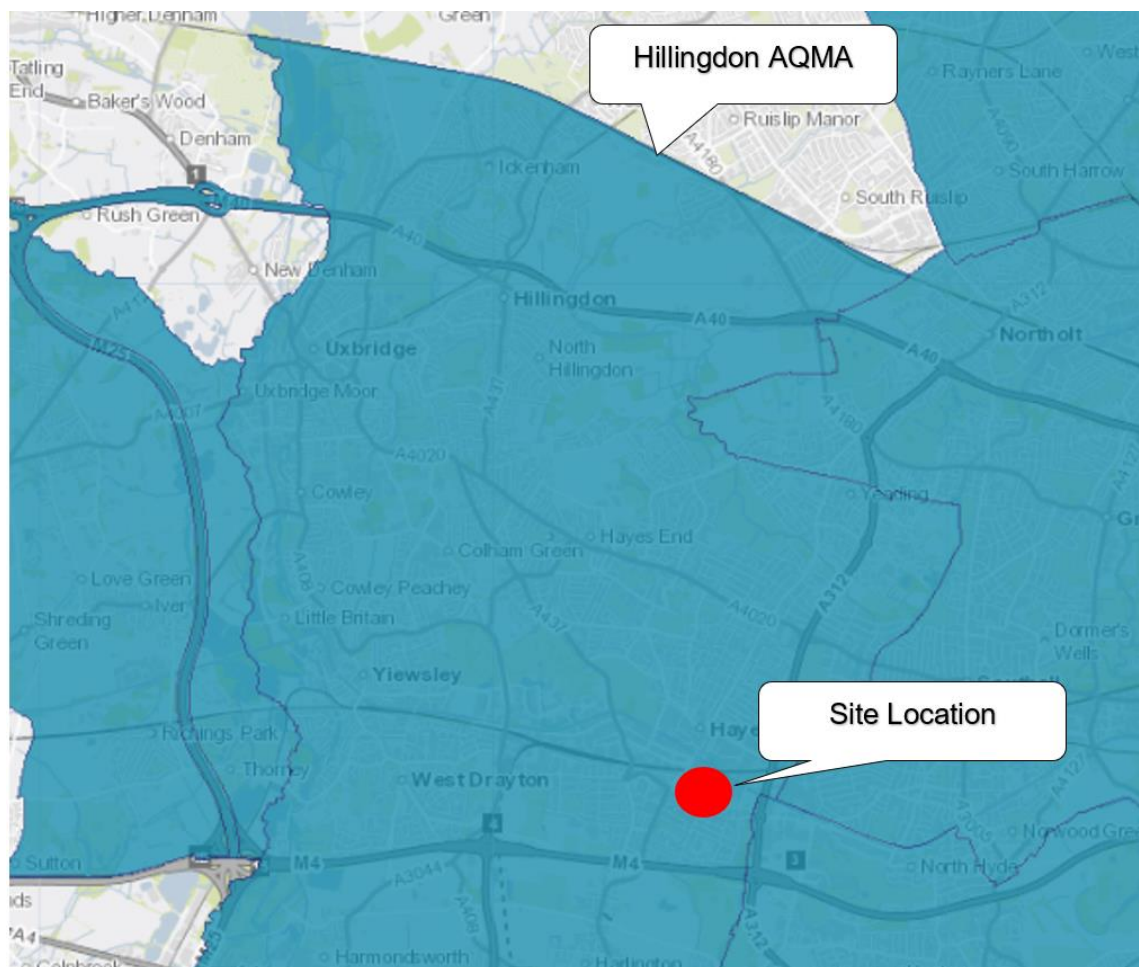


Figure 4.1: Site Location in Relation to Hillingdon AQMA

Background

- 4.5 The Defra mapping tool (reference year 2017) has been used to establish the pollutant background concentration. Due to the site location falling between two 1km grid squares (X:509500; Y:179500 and X:510500; Y:179500) an average of both has been calculated and used.
- 4.6 The NO_x, NO₂, PM₁₀ and PM_{2.5} background concentrations for 2018 are provided in **Table 4.1** below.

Pollutant	2018 ($\mu\text{g m}^{-3}$)
NO _x	49.58
NO ₂	29.47
PM ₁₀	17.04
PM _{2.5}	11.62

Table 4.1: Defra Background Concentrations for 2018

Local Monitoring

- 4.7 In July 2019, LBH published their latest Air Quality Annual Status Report which provides monitoring data for 2018.

Automatic Monitoring

- 4.8 LBH operated 11 automatic monitoring stations in 2018. The closest stations in relation to the site location is illustrated in **Figure 4.2** overleaf.

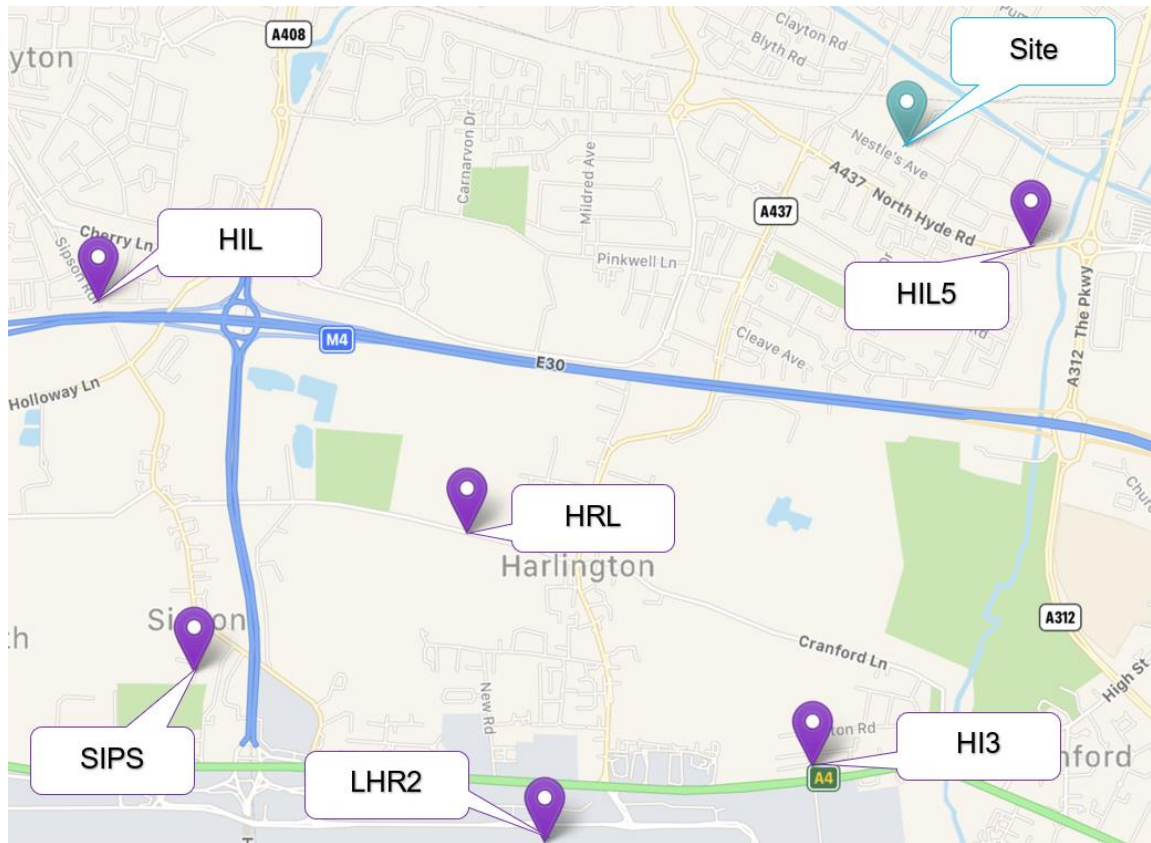


Figure 4.1: Site Location in Relation to the Closest Automatic Monitoring Locations

4.9 The latest results for the closest automatic monitors are provided within **Table 4.2** below.

ID	Site Name	Coordinates (X;Y)	2018 Annual Mean Concentration ($\mu\text{g}/\text{m}^3$)	
			NO ₂	PM ₁₀
HIL	London Hillingdon	506951; 178605	46	-
HRL	London Harlington	508295; 177800	30	15
SIPS	Hillingdon Sipson	507325 ;177282	30	-
LHR2	London Heathrow	508600; 176700	43	14
HI3	Hillingdon 3 - Oxford Avenue	509557; 176994	35	24
HIL5	Hillingdon Hayes	510303; 178882	43 (39.1)	30

Table 4.2: Latest NO₂ and PM₁₀ Annual Mean Concentrations for the Closest Automatic Monitoring Locations

4.10 The site location is closely comparable to a background location (over 100m from a major road). As most of the monitored locations are located at the kerb of main/major roads, monitoring stations HRL and SIPS are considered the most representative of the conditions likely to be experienced at the site.

4.11 **Table 4.2** above demonstrates that the annual mean concentrations for HRL and SIPS identify NO₂ and PM₁₀ to be below the annual mean objective.

Non-Automatic Monitoring

- 4.12 Additionally, LBH also undertake non-automatic monitoring of NO₂, at various locations within the Borough, using diffusion tubes. The closest non-automatic monitoring locations in relation to the development site are illustrated in **Figure 4.2** below.

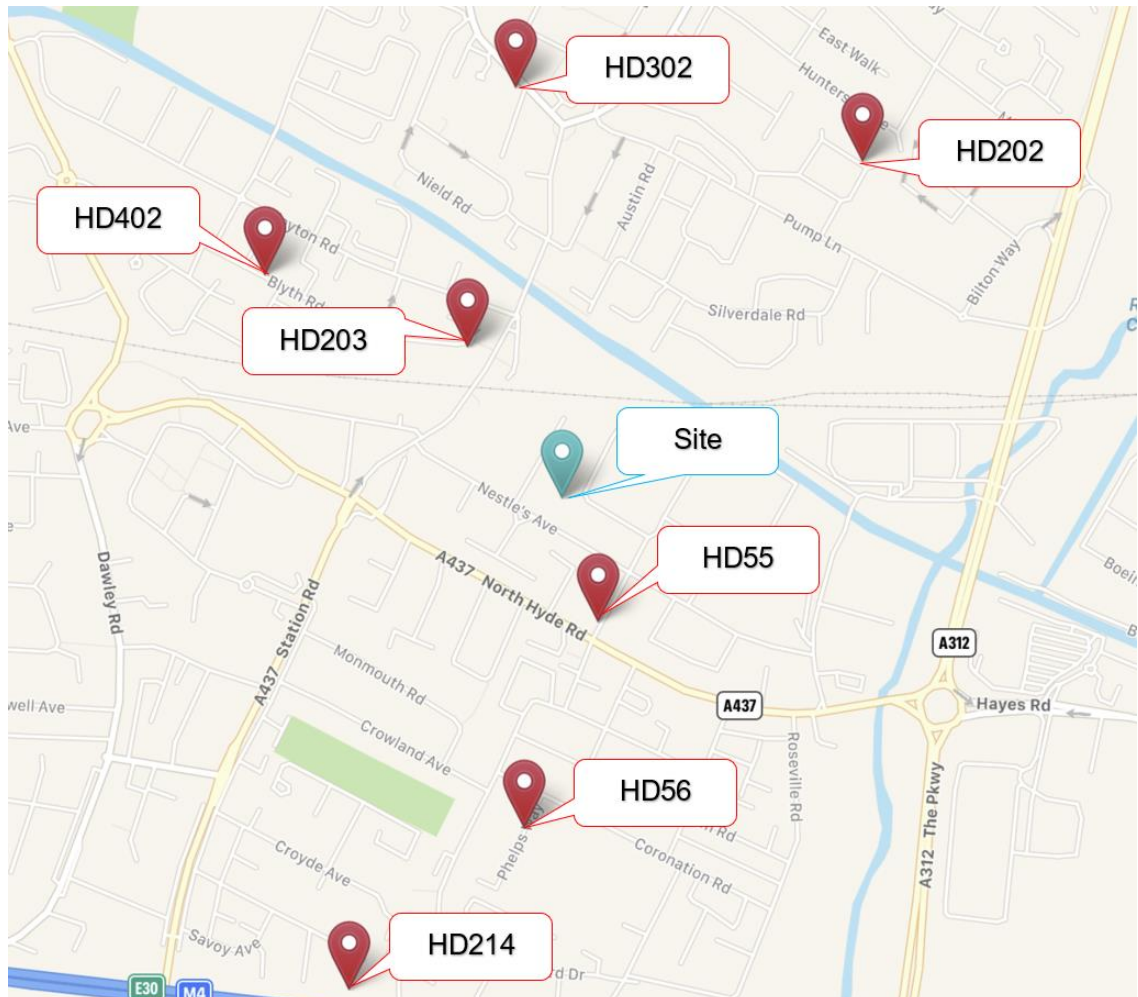


Figure 4.2: Site Location in Relation to the Closest Non-Automatic Monitoring Locations

- 4.13 The latest results for the closest non-automatic monitoring locations are provided within **Table 4.3** below.

ID	Site Name	Coordinates (X;Y)	Site Type	NO ₂ Annual Mean Concentration (µg/m ³)
				2018
HD55	Harold Avenue (first lamp post on left)	509918; 179015	Roadside	37.7
HD56	15 Phelps Way Hayes (lamp post outside of)	509798; 178654	Roadside	33.9
HD202	49 Silverdale Gardens, Hayes Lamp Post (8)	510361; 179820	Background	31.0
HD203	Blyth Road, Hayes Lamp Post (4)	509683; 179486	Roadside	38.5
HD214	R/O 130 Cleave Avenue, Hayes Lamp Post (33)	509499; 178370	Roadside	42.0 (41.1)
HD302	Botwell House RC Primary School (Side-fence)	509755; 179934	Roadside	32.5
HD402	Blyth Road 2nd Tube, Hayes Lamp Post (17) (western most lamp post in front of 133 Enterprise House)	509328; 179603	Roadside	31.7

Table 4.3: Annual NO₂ Concentrations for the Closest Non-Automatic Monitoring Locations

- 4.14 **Table 4.3** above demonstrates that the majority of non-automatic monitoring locations have identified NO₂ annual mean concentrations which are below the objective. Diffusion tubes HD56, HD202 and HD302 are considered the most representative of the likely conditions anticipated to be experienced at the proposed development site as they are located away from main/major roads and not within a canyon effect street.
- 4.15 Therefore, in accordance with the exposure criteria set out in **Table 3.6**, the site is likely to fall within APEC-A for site suitability, which states the following:
- “No air quality grounds for refusal; however, mitigation of any emissions should be considered”*
- 4.16 However, suitable mitigation measures have been considered within **Section 7** of this AQA.

5 Evaluation of Potential Effects

Construction

Construction Dust

- 5.1 During the construction phases, there is the potential for emissions of dust to cause annoyance, nuisance and health effects to sensitive receptors, both human and ecological if located close to the site.
- 5.2 The construction activities associated with the proposed development can be separated into four stages:
- Demolition;
 - Earthworks;
 - Construction; and
 - Trackout.
- 5.3 There are a number of human receptors within 350m of the site boundary therefore a dust assessment has been undertaken in order to evaluate and minimise potential dust effects during the aforementioned four stages.
- 5.4 The construction dust assessment is included in **Appendix A**.

Construction Traffic and Plant

- 5.5 Throughout the construction period, there will be a number of construction vehicles, stationary plant and vehicles used by the construction workforce. These may potentially present an additional source of air pollutants in the vicinity of the proposed development site.
- 5.6 Any likely pollutant impacts should be addressed through Best Available Techniques (BAT) mitigation measures. Likely BAT are provided in **Section 7**.

Completed Development

Development Traffic

- 5.7 The Transport Assessment undertaken for the same application by i-Transport LLP has provided the net change associated with the proposed development.
- 5.8 The daily vehicle trips are included in **Table 5.1** below.

	Morning Peak			Evening Peak			AADT		
	In	Out	Total	In	Out	Total	In	Out	Total
Existing	8	5	13	4	7	11	86	95	181
Proposed	3	6	8	11	12	24	115	118	234
Net Impact	-5	+1	-4	+7	+5	+13	+29	+23	+53

Table 5.1: Trip Generation

- 5.9 **Table 5.1** above demonstrates that the daily vehicle trips for the proposed development are unlikely to result in a significant detrimental pollution impact upon the local road network and the current pollution levels.
- 5.10 Additionally, this level of traffic impact does not meet EPUK & IAQM criteria, in **Table 3.3**, for requiring further or detailed assessment. Therefore, it has not been considered necessary to quantify traffic related air quality impacts as a result of the operation of the proposed development.

Building Emissions

- 5.11 The associated energy strategy prepared for the proposed development by Mecserve has indicated that the development is to be fitted with a combination of Air Source Heat Pumps (ASHP's) and ultra low NOx boilers to provide both space and water heating.
- 5.12 ASHP's being electric is not directly associated with any NOx or Particulate emissions. Any emissions associated with the boilers should be reviewed and assessed, if required, at the appropriate stage, when all the required detailed plant technical information is confirmed.
- 5.13 However, if the NOx emissions specified for the proposed boilers is <40mg/kWh, the proposed building emissions would be in accordance with the minimum standards/requirements outlined within the London Plan SPG and no further assessment of building emissions would be required.
- 5.14 Compliance to relevant regulations and standards should be secured through planning conditions, where necessary.

6 Air Quality Neutral Assessment

- 6.1 The proposed development comprises 103 residential units. Therefore, the proposals meet the criteria for requiring an Air Quality Neutral Assessment as per The London Plan specifications.
- 6.2 The following air quality neutral assessment has been undertaken in accordance with the Air Quality Neutral Planning Support Update: GLA 80371 (Air Quality Consultants and Environ, 2014).
- 6.3 As previously stated, the associated energy strategy prepared for the proposed development by Mecserve has indicated that the development is to be fitted with a combination of Air Source Heat Pumps (ASHP's) and ultra low NOx boilers to provide both space and water heating.
- 6.4 The technical specification of the proposed boilers is not known at this stage. However, it is anticipated, these will be Low NOx boilers with emissions <40mg/kWh, meeting the minimum standards/requirements outlined within the London Plan SPG
- 6.5 Therefore, the key element to be considered in this assessment, at this stage, is transport emissions associated with the operation of the proposed development.

Transport Emissions Calculations

- 6.6 The potential for transport neutrality will be calculated by comparing traffic emissions from the proposed development with those associated with the current use of the site.
- 6.7 The traffic attraction associated with the existing and proposed site use, have been based upon the transport statement undertaken by i-Transport for the same application. Details of the number of trips used for each land use are presented in **Table 6.1** below.

Development	Land Use	Daily Trip Attraction
Existing	B1c/B2	181
Proposed	C3	234

Table 6.1: Predicted Daily Traffic Generation

- 6.8 The Total Transport Emissions of NO_x and PM₁₀ will be calculated for the existing and proposed development by multiplying the predicted traffic generation by the average distance travelled.
- 6.9 The average (arithmetic mean) journey lengths for residential, office and retail developments derived from the London Travel Demand Surveys (LTDS) are set out in **Table 6.2** below.

Land Use	Distance (Km)		
	CAZ	Inner	Outer
Retail (A1)	9.3	5.9	5.4
Office (B1)*	3.0	7.7	10.8
Residential (C3)*	4.3	3.7	11.4
*Based on the LTDS destination Note that these distances are based on a straight line between the origin and destination of a trip, not actual trip lengths			

Table 6.2: Average Distance Travelled by Car per Trip

- 6.10 As seen in **Table 6.2** above, the average distance trip lengths for Class type B2 are not available. Therefore, for the purpose of this assessment only B1 has been used.
- 6.11 Due to the location of the proposed development, the second column representing 'inner London' will be used.
- 6.12 The predicted average distance travelled per year is presented in **Table 6.3** below.

Development	Land Use	Number of vehicle trips per year*	Average distance travelled per trip (km/trip)**	Distance Travelled (km/year)
Existing	B1***	66,065	7.7	508,701
Proposed	C3	85,410	3.7	316,017
Difference				-192,684
*based on Transport Statement predicted daily traffic generation times 365 days **based on the London Travel Demand Survey for Inner London as shown in the supporting guidance ***All assessed as B1, in the absence of B2 criteria				

Table 6.3: Calculation of Total Average Distance Travelled Per Year

- 6.13 The Total Transport Emissions are then calculated by multiplying the total distance travelled by the relevant emission factor for NO_x and PM₁₀.
- 6.14 The Total Transport Emissions are then compared in order to assess whether the proposed development results in any additional NO_x or PM₁₀ emissions when compared to the site's current use.
- 6.15 The results are presented in **Table 6.4** below.

Development	Total distance travelled per year (km)	Transport Emission Factor (g/Vehicle-km)	Total Transport Emissions (kg)
NO_x			
Existing	508,701	0.370	188.2
Proposed	316,017	0.370	116.9
Difference			-71.3
PM₁₀			
Existing	508,701	0.0665	33.8
Proposed	316,017	0.0665	21.0
Difference			-12.8
*based on emission factors provided in Table 10 of GL A80371 air quality neutral planning support			

Table 6.4: Calculation of Total Transport Emissions

- 6.16 **Table 6.4** demonstrates that the predicted Total Transport Emissions associated with the proposed development are expected to be lower than the emissions generated by the site's existing use.
- 6.17 It is demonstrated that the proposed development would result in an improvement of Total Transport Emissions in the local area and therefore considered to be Air Quality Positive in terms of transport related emissions, which exceeds the standard London Plan's requirements. Therefore, no further mitigation will be required for this source of emissions when considered in isolation.

7 Mitigation Measures

Construction Dust

- 7.1 A construction dust assessment has been completed for the proposed development in accordance with IAQM and GLA guidance and is presented in **Appendix A**. Within the assessment, site specific mitigation measures have been identified which ensure compliance with relevant standards.
- 7.2 The role of air quality monitoring within the package of mitigation measures that is proposed has also been considered since monitoring proposals are frequently incorporated into planning conditions.
- 7.3 The mitigation measures outlined below, should make up part of a Construction Environmental Management Plan (CEMP) that should be implemented to minimise the potential adverse construction dust impacts throughout all the relevant construction stages.

Demolition:

- Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust);
- Wherever reasonably practicable, retain walls and windows while the rest of the building is demolished to provide a screen against dust;
- Bag and remove any biological debris or damp down such material before demolition; and
- 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 required.

Earthworks:

- Avoid scabbling (roughening of concrete surfaces) if possible;
- Avoid carrying out any earthworks during dry weather if reasonably practicable having regard to programme and contracting arrangements for the relevant works or provide and ensure appropriate use of water to control dust; and
- Re-vegetate any earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.

Construction:

- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out unless required for a particular process;

- Mix large quantities of cement, grouts and other similar materials in enclosed areas remote from site boundaries and potential receptors;
- 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; and
- For small supplies of fine powder ensure bags are sealed after use and are stored appropriately to prevent dust.

Trackout:

- Ensure any vehicles arriving and leaving site are securely covered to prevent escape of materials during transport;
- Routinely clean public roads and any access routes using wet sweeping methods; and
- Avoid dry sweeping.

General Mitigation Measures:

- Ensure regular cleaning of hardstanding surfaces using wet sweeping methods;
- Display the head or regional office contact information, and the name and contact details of person(s) accountable for air quality on the site boundary;
- Develop and implement a stakeholder communications plan that includes community engagement before work commences on site;
- Log all air quality complaints, identify the cause(s), take appropriate measures to reduce emissions in a timely manner and record all measures taken. Make the complaints log available to the Local Authority when requested;
- Carry out regular on-site and off-site inspections to monitor dust soiling effects, with cleaning to be provided if necessary. Increase the frequency of inspections when activities with a high potential to produce dust are being carried out;
- Erect barriers around the site, any dusty activities and stockpiles (the last of which should be covered);
- Screen areas of the building, where dust producing activities are taking place, with debris screens or sheeting;
- Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period;
- Remove materials that have a potential to produce dust as soon as possible, unless they are being re-used. If they are to be re-used, on site covers should be used;
- Ensure all vehicles switch off engines when stationary, so that there are no idling vehicles;

- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine sprays on such equipment wherever possible;
- Avoid bonfires and the burning of waste materials; and
- Special provisions will apply for any materials containing asbestos. The safety method statement should outline the control measures necessary to minimise the risks to an acceptable level and all statutory notices will be placed with the Health and Safety Executive (HSE).

7.4 It is important that attention is paid to any construction activity that takes place in close proximity to the site boundary, potentially at the closest location to sensitive receptors.

Dust Monitoring:

7.5 The dust monitoring requirements are usually split in three categories as follows:

- **Negligible/Low risk** category sites- should not normally be necessary to undertake any quantitative air quality monitoring, although in some circumstances it may be applicable to undertake occasional surveys in the vicinity of the site boundary at least once on each working day.
- **Medium risk** category sites- should normally be adequate to undertake surveys of dust flux over the site boundary, and/or dust deposition/soiling rates around the site at nearby receptors, although this may have resource implications, and an approach based on continuous particulate matter monitoring may be preferred.
- **High risk** category sites- normally be necessary to supplement the monitoring for medium risk sites with monitoring of ambient PM concentrations. It is recommended that priority be assigned to the measurement of PM₁₀, as emissions of dust from construction sites are predominantly in the coarser fractions.

7.6 The proposed development site has been classified as having a **low to medium risk** of dust soiling.

7.7 Therefore, dust monitoring, as specified above, should be undertaken during the relevant stages of construction to ensure that:

- The construction activities do not give rise to any exceedances of the air quality objectives for PM₁₀ or PM_{2.5};
- The agreed mitigation measures to control dust emissions are being applied and are effective and
- Any high levels of dust is attributed to specific activities on site to ensure that appropriate corrective measures take place.

7.8 The implementation of the specific mitigation measures given above within the CEMP will ensure that any potential adverse impacts from construction dust during all

construction stages are avoided. It is noted by the IAQM that, through the use of effective mitigation, the effects of dust from construction activity will normally not be considered significant.

7.9 Compliance should be secured through planning conditions, where necessary.

Construction Traffic and Plant

7.10 As previously stated, there is potential for air pollutant impacts to arise from construction plant and vehicles associated with the scheme. The following BAT should still be implemented during the construction phase.

- All vehicles should switch off engines when stationary, no idling vehicles;
- On-road vehicles to comply with the requirements of the Low Emission Zone and the London Non-Road Mobile Machinery (NRMM) standards, where applicable;
- All NRMM to use ultra-low sulphur diesel (ULSD) where available;
- Minimise the movement of construction traffic around the site;
- Maximising efficiency (this may include alternative modes of transport, maximising vehicle utilisation by ensuring full loading and efficient routing);
- Vehicles should be well maintained and kept in a high standard of working order;
- Avoid the use of diesel or petrol powered generators by using mains electricity or battery powered equipment where possible; and
- Locate plant away from boundaries close to residential areas.

Operational

Traffic Emissions

7.11 The AQA has demonstrated that the predicted net traffic is unlikely to result in a detrimental pollution impact upon the local road network and the current pollution levels. Therefore, it is not anticipated that mitigation measures will be required.

Building Emissions

7.12 As previously stated, the associated energy strategy prepared for the proposed development indicates that a combination of ASHP's and Ultra low NOx boilers will be used.

7.13 Heat pumps being electric, are not directly associated with any NOx or Particulate emissions.

7.14 However, any operational plant effects associated with the proposed boilers should be reviewed and assessed, if required, at the appropriate stage, when all the required detailed plant technical information is available.

- 7.15 It is however recommended that any boilers being used on site should be highly efficient low NO_x boilers, ideally with emission <40 mgNO_x/kWh, which would meet the minimum standards/requirements outlined within the London Plan SPG .
- 7.16 At this stage, compliance with relevant regulations and standards should be secured through planning conditions, where necessary.

[Air Quality Neutral Assessment](#)

- 7.17 The Air Quality Neutral Assessment undertaken predicts that the Total Transport Emissions associated with the proposed development are expected to be lower than the existing transport emissions and therefore, considered Air Quality Positive. This exceeds the standard London Plan's SPG requirement and no further mitigation measures are anticipated to be required.

[Site Suitability](#)

- 7.18 This AQA has demonstrated that the proposed development site is likely to fall within APEC A for site suitability.
- 7.19 In accordance with the exposure criteria in **Table 3.6**, means that there should be no air quality grounds for refusal and the local air quality should be suitable to safeguard the health and amenity of new residents.

8 Residual Effects and Conclusions

- 8.1 The London Borough of Hillingdon (LBH) have declared one Air Quality Management Area (AQMA) covering all parts of the Borough south of the Chiltern-Marylebone Railway line. The AQMA was declared as a result of exceedances of the annual mean objective levels for Nitrogen Dioxide (NO₂).
- 8.2 A review of all the monitoring sites within the Borough has been undertaken. It was concluded that the most representative monitoring locations are below national objective for NO₂.
- 8.3 In accordance with the exposure criteria in **Table 3.6**, the site is likely to fall within APEC-A which states the following:
- “No air quality grounds for refusal; however, mitigation of any emissions should be considered”*
- 8.4 A construction dust assessment has been undertaken for the four stages of construction activities associated with the proposed development in accordance with GLA and IAQM guidance on the assessment of dust from demolition and construction (**Appendix A**).
- 8.5 Mitigation measures have been proposed for construction traffic and stationary plant associated with the proposed development.
- 8.6 Following the successful implementation of the specific mitigation measures, the residual effects of construction dust and emissions from construction plant/vehicles upon the local area and sensitive receptors although adverse, will be temporary and considered to be ‘not significant’.
- 8.7 The Air Quality Neutral Assessment undertaken predicts that the Total Transport Emissions associated with the proposed development are expected to be lower than the Existing Transport Emissions. Therefore, it has been considered Air Quality Positive, in relation to transport emissions, which exceeds the standard London Plan SPG’s requirements.
- 8.8 The Associated Energy Strategy prepared for the proposed development recommends the combination of Air Source Heat Pumps and ultra low NO_x boilers. Heat pumps being electric, are not directly associated with any NO_x or Particulate emissions.
- 8.9 It is recommended that any boilers being used on site should be highly efficient low NO_x boilers, ideally with emission <40mgNO_x/kWh, which would meet the minimum standards/requirements outlined within the London Plan SPG.

- 8.10 Any emissions associated with the proposed boilers should be reviewed and assessed, if required, at the appropriate stage, when all the required detailed plant technical information is available
- 8.11 Compliance to relevant regulations and standards should be secured, at this stage, through planning conditions, where necessary.

Conclusion

- 8.12 At this stage, based on the information available, the proposed development is very unlikely to raise any significant adverse impacts upon the health and/or quality of life of any existing neighbours, as a result of any anticipated changes to air quality.
- 8.13 It is therefore concluded that the proposed development is likely to comply fully with air quality related national, regional and local planning policy and any mitigation can, if considered necessary, be enforced by means of appropriate planning conditions, consistent with paragraph 54 and 55 of the National Planning Policy Framework and the recommendations within the GLA's Sustainable Design and Construction SPD.

Appendix A:
Construction Dust Assessment

CONSTRUCTION DUST ASSESSMENT

- A.1 The construction dust assessment has been completed in accordance with 2014 IAQM guidance and follows the procedures as outlined in Section 3 of this report.

Screen the Need for a Detailed Assessment

- A.2 The following screening criterion has been applied to the assessment: An assessment will normally be required where there is:

- a 'human receptor' within:
 - 350m of the boundary of the site; or
 - 50m of the route(s) used by construction vehicles on the public highway, up to 500m from the site entrance(s).
- an 'ecological receptor' within:
 - 50m of the boundary of the site; or
 - 50m of the route(s) used by construction vehicles on the public highway, up to 500m from the site entrance(s).

- A.3 There are a number of human receptors within 350m of the site boundary. Therefore, a dust assessment is required due to the proposed development location meeting some of the above criteria.

Assess the Risk of Dust Impacts

- A.4 The construction activities associated with the proposed development have been separated into four stages:

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

- A.5 The assessment of the risk of dust impacts has been completed in two stages:

- Determine the potential dust emission magnitude; and
- Determine the sensitivity of the area to dust impacts.

- A.6 The potential dust emission magnitude for all four of the construction stages have been determined to be either Small, Medium or Large according to the criteria presented in **Table A1** below.

Construction Activity	Dust Emission Magnitude Scale		
	Small	Medium	Large
Site Clearance/ Demolition	Total building volume <20,000m ³ , construction material with low potential for dust release, demolition activities <10m above ground, works during wetter months.	Total building volume 20,000-50,000m ³ , potentially dusty construction material, demolition activities 10-20m above ground level.	Total building volume >50,000m ³ , potentially dusty material, on-site crushing and screening, activities >20m above ground level.
Earthworks	Total site area <2,500m ² , soil type with large grain size, <5 heavy earth moving vehicles active at one time, bunds <4m high, total material moved <20,000t, works during wetter months.	Total site area 2,500-10,000m ² , moderately dusty soil type, 5-10 heavy earth moving vehicles active at one time, bunds 4-8m high, total material moved 20,000-100,000t.	Total site area >10,000m ² , potentially dusty soil type, >10 heavy earth moving vehicles active at one time, bunds >8m high, total material moved >100,000t.
Construction	Total building volume <25,000m ³ , construction material with low potential for dust release.	Total building volume 25,000-100,000m ³ , potentially dusty construction material, on site concrete batching.	Total building volume >100,000m ³ , on site concrete batching, sandblasting.
Trackout	<10 HDV* outwards movements in any one day, surface material with low potential for dust release, unpaved road length <50m.	10-50 HDV outward movements in any one day, moderately dusty surface material, unpaved road length 50-100m.	>50 HDV outward movements in any one day, potentially dusty surface material, unpaved road length >100m.
* HDV – Heavy Duty Vehicle (>3.5t), Note – In each case, not all the criteria need to be met, and that other criteria may be used if justified.			

Table A1: Dust Emission Magnitude Criteria

A.7 The completed assessment of Dust Emission Magnitude is shown in **Table A2** below.

Construction Activity	Dust Emission Magnitude	Justification
Demolition	Small	Estimated total building volume <20,000m ³
Earthworks	Small	Estimated total site area <2,500m ²
Construction	Small	Estimated total building volume <25,000m ³ ,
Trackout	Medium	Estimated -50 HDV outward movements in any one day

Table A2: Dust Emission Magnitude Assessment

A.8 Due to the scale of the proposed development the magnitude of dust emissions has been assessed as small.

A.9 The sensitivity of the area has been assessed in relation to a number of factors such as; the specific sensitivities of receptors in the area, the proximity and number of those receptors and in the case of PM₁₀, the local background concentration and by following the significance criteria in **Tables A3, A4 and A5** below.

Receptor Sensitivity	Number of Receptors	Distance from the source (m)			
		<20	<50	<100	<350
High	>100	High	High	Medium	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

Table A3: Sensitivity of the Area to Dust Soiling Effects of People and Property

Receptor Sensitivity	Annual Mean PM ₁₀ Concentration	Number of Receptors	Distance from the source (m)				
			<20	<50	<100	<200	<350
High	>32 µg m ⁻³	>100	High	High	High	Medium	Low
		10-100	High	High	Medium	Low	Low
		1-10	High	Medium	Low	Low	Low
	28-32 µg m ⁻³	>100	High	High	Medium	Low	Low
		10-100	High	Medium	Low	Low	Low
		1-10	High	Medium	Low	Low	Low
	24-28 µg m ⁻³	>100	High	Medium	Low	Low	Low
		10-100	High	Medium	Low	Low	Low
		1-10	Medium	Low	Low	Low	Low
	<24 µg m ⁻³	>100	Medium	Low	Low	Low	Low
		10-100	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
Medium	>32 µg m ⁻³	>10	High	Medium	Low	Low	Low
		1-10	Medium	Low	Low	Low	Low
	28-32 µg m ⁻³	>10	Medium	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
	24-28 µg m ⁻³	>10	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
	<24 µg m ⁻³	>10	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
Low	-	>1	Low	Low	Low	Low	Low

Table A4: Sensitivity of the Area to Human Health Impacts

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

Table A5: Sensitivity of the Area to Ecological Impacts

A.10 In addition to **Tables A3, A4 and A5** any site-specific factors have been taken into account when defining the sensitivity of the area:

- any history of dust generating activities in the area;
- the likelihood of concurrent dust generating activity on nearby sites;
- any pre-existing screening between the source and the receptors; and
- the duration of the potential impact, as a receptor may become more sensitive over time.

A.11 The sensitivity of the area assessment has been completed based on the following:

- Approximately 10-100 'high' sensitive receptors within 20m of the site;
- Low PM₁₀ background;
- No 'high' sensitive receptors in relation to ecology within 50m of the site

A.12 The completed assessment of Sensitivity of the Area in **Table A.6** below.

Receptor Sensitivity	Sensitivity of the Surrounding Area			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	High	High	High	High
Human Health	Low	Low	Low	Low
Ecological	Low	Low	Low	Low

Table A6: Sensitivity of the Surrounding Area Assessment

A.13 The completed pre-mitigation impact risk assessment incorporating the sensitivity of the area (**Table A6**) and the dust emissions magnitude (**Table A2**) for the four construction activities is shown in **Table A7** below.

Potential Impact	Risk			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	Medium	Low	Low	Medium
Human Health	Negligible	Negligible	Negligible	Low
Ecological	Negligible	Negligible	Negligible	Low

Table A7: Summary of Dust Risk (pre-mitigation)

A.14 As a result, the pre-mitigation risk of dust soiling has been assessed low-medium. The human health risk was considered negligible/low and the ecological risk has been assessed as negligible/low.

Site-specific Mitigation

A.15 From the identification of the risk of impacts with no mitigation applied in **Table A7**, it is possible to determine the specific mitigation measures that can be applied in relation to the level of risk associated with the construction activity.

A.16 Additionally, the role of air quality monitoring within the package of mitigation measures that is proposed needs to be considered since monitoring proposals are frequently incorporated into planning conditions.

A.17 The mitigation measures described below are suggested as measures that should be included in a site-specific Construction Environmental Management Plan (CEMP).

Demolition:

- Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust);
- Wherever reasonably practicable, retain walls and windows while the rest of the building is demolished to provide a screen against dust;
- Bag and remove any biological debris or damp down such material before demolition; and
- 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 required.

Earthworks:

- Avoid scabbling (roughening of concrete surfaces) if possible;
- Avoid carrying out any earthworks during dry weather if reasonably practicable having regard to programme and contracting arrangements for the relevant works or provide and ensure appropriate use of water to control dust.

Construction:

- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out unless required for a particular process;
- Mix large quantities of cement, grouts and other similar materials in enclosed areas remote from site boundaries and potential receptors;
- 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; and
- For small supplies of fine powder ensure bags are sealed after use and are stored appropriately to prevent dust.

Trackout:

- Ensure any vehicles arriving and leaving site are securely covered to prevent escape of materials during transport;

- Routinely clean public roads and any access routes using wet sweeping methods; and
- Avoid dry sweeping.

General Mitigation Measures- Applicable to all stages:

- Ensure regular cleaning of hardstanding surfaces using wet sweeping methods;
- Display the head or regional office contact information, and the name and contact details of person(s) accountable for air quality on the site boundary;
- Develop and implement a stakeholder communications plan that includes community engagement before work commences on site;
- Log all air quality complaints, identify the cause(s), take appropriate measures to reduce emissions in a timely manner, and record all measures taken. Make the complaints log available to the Local Authority when requested;
- Carry out regular on-site and off-site inspections to monitor dust soiling effects, with cleaning to be provided if necessary. Increase the frequency of inspections when activities with a high potential to produce dust are being carried out;
- Erect barriers around the site, any dusty activities and stockpiles (the last of which should be covered);
- Screen areas of the building, where dust producing activities are taking place, with debris screens or sheeting;
- Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period;
- Remove materials that have a potential to produce dust as soon as possible, unless they are being re-used. If they are to be re-used, on site covers should be used;
- Ensure all vehicles switch off engines when stationary, so that there are no idling vehicles;
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine sprays on such equipment wherever possible;
- Avoid bonfires and the burning of waste materials; and
- Special provisions will apply for any materials containing asbestos. The safety method statement should outline the control measures necessary to

minimise the risks to an acceptable level and all statutory notices will be placed with the Health and Safety Executive (HSE).

- A.18 It is important that attention is paid to any construction activity that takes place in close proximity to the site boundary, potentially at the closest location to sensitive receptors.

Dust Monitoring:

- A.19 The dust monitoring requirements are usually split into three categories as follows:

- **Negligible/Low risk** category sites- should not normally be necessary to undertake any quantitative air quality monitoring, although in some circumstances it may be applicable to undertake occasional surveys in the vicinity of the site boundary at least once on each working day.
- **Medium risk** category sites- should normally be adequate to undertake surveys of dust flux over the site boundary, and/or dust deposition/soiling rates around the site at nearby receptors, although this may have resource implications, and an approach based on continuous particulate matter monitoring may be preferred.
- **High risk** category sites- normally be necessary to supplement the monitoring for medium risk sites with monitoring of ambient PM concentrations. It is recommended that priority be assigned to the measurement of PM₁₀, as emissions of dust from construction sites are predominantly in the coarser fractions.

- A.20 The proposed development site has been classified as having a low to medium risk of dust soiling.

- A.21 Therefore, dust monitoring in accordance with the above criteria should ideally be undertaken during the relevant stages of construction to ensure that:

- The construction activities do not give rise to any exceedances of the air quality objectives for PM₁₀ or PM_{2.5}.
- The agreed mitigation measures to control dust emissions are being applied and are effective.
- Any high levels of dust are attributed to specific activities on site to ensure that appropriate corrective measures take place.

- A.22 The implementation of the specific mitigation measures given above within a CEMP will ensure that the potential adverse impacts from construction dust during all construction stages are avoided. It is noted by the IAQM that through

the use of effective mitigation, the effects of dust from construction activity will normally be considered 'not significant'.

Determine Significant Effects

- A.23 Prior to the implementation of any mitigation measures the highest significance of adverse effects was medium risk for dust soiling, low risk for human health and low risk for ecological, with dust emissions magnitude considered to be small.
- A.24 The mitigation measures listed above have been chosen due to their suitability to the site and to reduce the risk of adverse effects from the four stages of construction.
- A.25 Through the implementation of site-specific mitigation measures (listed above), which are designed to mitigate potential dust impacts, will ensure that potential significant adverse dust effects will not occur, and the residual effect will normally be 'not significant'. Appropriate mitigation measures should be secured by planning condition where necessary.

Conclusions of Construction Dust Assessment

- A.26 The completion of the construction dust assessment has shown that the residual effect of the proposed development in the context of construction dust emissions will be 'not significant'. This conclusion has been made based on the small dust emissions magnitude related to the scale of development and the assumption that the suggested mitigation measures will be implemented (secured by planning condition) and is relevant for all sensitive receptors within 350m of the site.
- A.27 It should be noted that even with a rigorous CEMP in place, it is not possible to guarantee that all mitigation measures will be effective at all times. If there is an interruption in the water supply used for dust suppression or adverse weather conditions are experienced that exacerbate dust emissions, the receptors may experience occasional, short term dust annoyance.
- A.28 However, the likely scale of this would not normally be considered sufficient to change the conclusion of this assessment. It is therefore important to consider all mitigation measures and provide a frequent review and assessment procedure at each stage, to ensure that mitigation measures continue to provide the maximum attenuation level possible.

