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BBC PENSION TRUST

TRAVELODGE HOTEL EXTENSION, STOCKLEY PARK, UXBRIDGE

AIR QUALITY ASSESSMENT

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1 INTRODUCTION

1.1 Introduction to Report

1.1.1 By instruction from BBC Pension Trust, NoiseAir Limited have been commissioned to undertake an Air Quality Assessment (AQA) in support of a Proposed Development at a Travelodge hotel at Stockley Park, Uxbridge, Greater London, herein referred to as 'the Site'.

1.1.2 It is understood that a planning application is to be submitted proposing an extension of the existing Travelodge hotel at the Site, comprising 58 additional bedrooms and additional infrastructure, as follows:

- 13 additional rooms on the ground floor within the vacant 'Wetherspoons' public house, with a new café/bar restaurant;
- 38 additional rooms on the first floor of the serviced office suites; and
- 7 additional rooms within the existing hotel at second floor level (where the existing café is located).

1.1.3 Limitations of this report are outlined in **Appendix A**.

1.2 Site Location and Context

1.2.1 The Site is located at approximate National Grid Reference (NGR): 508032, 180453. **Figure 1** details the location of the Site.

1.2.2 The Site is located within the jurisdiction of London Borough of Hillingdon (LBH) and is situated within a borough-wide Air Quality Management Area (AQMA), Hillingdon AQMA, which was declared in 2003 as a result of exceedances of the annual mean nitrogen dioxide (NO_2) objective.

1.2.3 The Proposed Development may lead to adverse impacts at nearby sensitive receptors, as a result of fugitive dust emissions during construction and road vehicle exhaust emissions during operation. As such, an AQA is required to determine potential impacts associated with the proposed development in accordance with the requirements of The National Planning Policy Framework (NPPF). The AQA will therefore consider ambient pollutant concentrations namely NO_2 and particulate matter (PM_{10}, and $PM_{2.5}$) around the Site.

1.2.4 The main potential sources of air pollution have been identified as emissions from vehicles using the local road network in the vicinity of the Site. There are no significant combustion

sources identified within the immediate vicinity of the Site that will influence the local air quality.

1.2.5 The Proposed Development is located within the administrative area of LBH and is situated within the grounds of 'The Arena', which is a purpose-built leisure, retail and office development built in the 1980s. The existing development is built on two levels around a central circular courtyard, which includes restaurant, bar and retail premises on the ground floor, a 'Nuffield Health Club' on the ground and first floor level and office space at first floor level. The Stockley Park Golf Club is situated approximately 50m to the north of the Site. The south is bordered by a manmade body of water, with office buildings beyond.

1.2.6 The report presents the findings of an assessment of the potential air quality impacts of the Proposed Development during the construction and operational phases. For both phases, the significance of potential impacts have been identified, and recommended mitigation measures are described.

2 LEGISLATION AND POLICY

2.1 Air Quality Legislation and Policy

2.1.1 A summary of the relevant air quality legislation and policy is provided below.

Air Quality Strategy

2.1.2 The government's policy on air quality within England the is set out in the Air Quality Strategy for England (AQS), with the latest framework published in 2023[1].

2.1.3 The AQS provides a framework for reducing air pollution in England with the aim of meeting the requirements of European Union Legislation, and fulfils the statutory requirement of the Environment Act 1995 as amended by the Environment Act 2021, to publish an Air Quality Strategy setting out air quality standards, objectives, and measures for improving ambient air quality every 5 years. The AQS sets Air Quality Objectives (AQOs) for seven key pollutants to protect health, vegetation, and ecosystems. These are benzene (C_6H_6), 1,3 butadiene (C_4H_6), carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), particulate matter (PM_{10}) and sulphur dioxide (SO_2).

2.1.4 The air quality standards are levels recommended by the Expert Panel on Air Quality Standards (EPAQS) and the World Health Organization (WHO) with regards to current scientific knowledge and the effects of each pollutant on health and the environment.

2.1.5 The AQOs are medium-term policy-based targets set by the Government, which take into account economic efficiency, practicability, technical feasibility and timescale. Some objectives are equal to EPAQS recommended standards or WHO guideline limits, whereas other involve a margin of tolerance, i.e. a limited number of permitted exceedances of standards over a given period.

2.1.6 $PM_{2.5}$ is not currently part of the Local Air Quality Management framework and therefore does not have any associated AQOs. The AQS, however, recognises this, and has set 2 new legally binding $PM_{2.5}$ targets, each with an interim target:

- 10 µg/m^3 annual mean concentration $PM_{2.5}$ nationwide by 2040, with an interim target of 12 µg/m^3 by January 2028; and

[1] Department for Environment, Food and Rural Affairs (Defra, 2023) Policy paper Air quality strategy: framework for local authority delivery.

- 35% reduction in average population exposure by 2040, with an interim target of a 22% reduction by January 2028, both compared to a 2018 baseline.

2.1.7 **Table 1** presents the AQOs/interim target for pollutants considered within this assessment.

Table 1: National Air Quality Objectives and Interim Target for the Protection of Human Health

Pollutant	Applies to	Air Quality Objective/Interim Target	Measured As
NO_2	UK	40µg/m^3	Annual mean
	UK	200µg/m^3 not to be exceeded more than 18 times a year	1-hour mean
PM_{10}	UK (except Scotland)	40µg/m^3	Annual mean
	UK (except Scotland)	50µg/m^3 not to be exceeded more than 35 times a year	24-hour mean
$PM_{2.5}$	UK (except Scotland)	Interim target of 12µg/m by 2028 Target of 22% reduction in population exposure by 2028 compared to 2018	Annual mean

2.1.8 For the pollutants considered in this assessment, there are both long-term (annual mean) and short-term standards. In the case of NO_2, the short-term standard is for a 1-hour averaging period, whereas for PM_{10} it is a 24-hour averaging period. These periods reflect the varying impacts on health of differing exposures to pollutants, for example temporary exposure on the pavement adjacent to a busy road compared with the exposure of residential properties adjacent to a road.

Air Quality Regulations (2016)

2.1.9 Many of the objectives in the AQS have been made statutory in England with the Air Quality (England) Regulations 2000[2] and the Air Quality (England) (Amendment) Regulations 2002[3] for the purpose of Local Air Quality Management (LAQM).

2.1.10 These Regulations require that likely exceedances of the AQS objectives are assessed in relation to:

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

2.1.11 The Air Quality Standards (Amendment) Regulations 2016[4] amends the Air Quality Standards Regulations 2010 that transpose the European Union Ambient Air Quality

[2] The Air Quality (England) Regulations 2000 – Statutory Instrument 2000 No.928.
[3] The Air Quality (England) (Amendment) Regulations 2002 – Statutory Instrument 2002 No.3043.
[4] The Air Quality Standards (Amendment) Regulations 2016 - Statutory Instrument 2016 No. 1184.

Directive (2008/50/EC) into law in England. This Directive sets legally binding limit values for concentrations in outdoor air of major air pollutants that impact public health such as PM_{10}, $PM_{2.5}$ and NO_2. The limit values for NO_2 and PM_{10} are the same concentration levels as the relevant AQS objectives and the limit value for $PM_{2.5}$ is a concentration of 12µg/m^3 to be achieved by 2028.

Environmental Protection Act 1990 – Control of Dust and Particles Associated with Construction

2.1.12 Section 79 of the Environmental Protection Act 1990[5] gives the following definitions of statutory nuisance relevant to dust and particles:

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

2.1.13 Following this, Section 80 states that where a statutory nuisance is shown to exist, the local authority must serve an abatement notice. Failure to comply with an abatement notice is an offence and if necessary, the local authority may abate the nuisance and recover expenses.

2.1.14 There are no statutory limit values for dust deposition above which 'nuisance' is deemed to exist. Nuisance is a subjective concept, and its perception is highly dependent upon the existing conditions and the change which has occurred.

Environment Act 1995

2.1.15 Under Part IV of the Environment Act 1995[6], local authorities must review and document local air quality within their area by way of staged appraisals and respond accordingly, with the aim of meeting the air quality objectives defined in the Regulations. Where the objectives are not likely to be achieved, an authority is required to designate an Air Quality Management Area (AQMA). For each AQMA the local authority is required to draw up an Air Quality Action Plan (AQAP) to secure improvements in air quality and show how it intends to work towards achieving air quality standards in the future.

[5] Environmental Protection Act. London 1990. HMSO.
[6] Environment Act 1995. London HMSO.

Clean Air Strategy (2019)

2.1.16 In 2019, the UK government released its Clean Air Strategy 2019[7], part of its 25 Year Environment Plan[8]. The Strategy sets out the comprehensive action that is considered to be required from across all parts of government and society.

2.1.17 The primary focus of air quality management has primarily related to NO_2, and its principal source in the UK, road traffic. The 2019 Strategy aims to broaden the focus to other areas, including actions on clean growth, and emissions from domestic wood burning stoves, industry and agriculture.

2.2 National Planning Policy

2.2.1 A summary of the national and local planning policy relevant to the Proposed Development and air quality is provided below.

National Planning Policy Framework (2024)

2.2.2 The Government's overall planning policies for England are described in the National Planning Policy Framework[9]. The core underpinning principle of the Framework is the presumption in favour of sustainable development, defined as:

> *"[…] meeting the needs of the present without compromising the ability of future generations to meet their own needs".*

2.2.3 The NPFF states that to achieve sustainable development in the planning system, three overarching objectives are required, which are interdependent from one another, and must be pursued in mutually supportive ways:

> *"a) **an economic objective** – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;*
>
> *b) **a social objective** – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering well-designed, beautiful*

[7] Department for Environment, Food and Rural Affairs (2019) Clean Air Strategy 2019.
[8] Department for Environment Food and Rural Affairs (Defra) (2018) A Green Future: Our 25 Year Plan to Improve the Environment.
[9] Ministry of Housing, Communities & Local Government (2024) National Planning Policy Framework.

and safe places, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and

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

2.2.4 In relation to air quality, the following is relevant:

*"**9. Promoting sustainable transport***

Transport issues should be considered from the earliest stages of plan-making and development proposals, using a vision-led approach to identify transport solutions that deliver well-designed, sustainable and popular places. This should involve:

a) making transport considerations an important part of early engagement with local communities;

b) ensuring patterns of movement, streets, parking and other transport considerations are integral to the design of schemes, and contribute to making high quality places;

c) understanding and addressing the potential impacts of development on transport networks;

d) realising opportunities from existing or proposed transport infrastructure, and changing transport technology and usage – for example in relation to the scale, location or density of development that can be accommodated;

e) identifying and pursuing opportunities to promote walking, cycling and public transport use; and

f) identifying, assessing and taking into account the environmental impacts of traffic and transport infrastructure – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains.

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. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making."; and

*"**15. Conserving and enhancing the natural environment***

Planning policies and decisions should contribute to and enhance the natural and local environment by:

[…]

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

[…]

Ground conditions and pollution

[…]

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

[…]

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

2.2.5 The AQA has been undertaken in accordance with the NPPF.

2.3 Local Planning Policy

The London Plan

2.3.1 According to The Greater London Authority's (GLA's) policy, the Mayor of London is required to publish and review a Spatial Development Strategy (SDS), which is known as the London Plan. The London Plan 2021[10] is the overall strategic plan for London's growth in a sustainable way which runs from 2019 to 2041. It sets out an integrated economic, environmental, transport and social framework for the development of London over the next 20-25 years. It has been stated that:

> *"The London Plan is legally part of each of London's Local Planning Authorities' Development Plan and must be taken into account when planning decisions are taken in any part of Greater London."*

2.3.2 A review of the London Local Plan identified the following core policy of relevance to air quality:

> ***"Policy SI 1 - Improving Air Quality***
>
> *A - Development plans, through relevant strategic, site specific and area-based policies should seek opportunities to identify and deliver further improvements to air quality and should not reduce air quality benefits that result from the Mayor's or boroughs' activities to improve air quality.*
>
> *B - To tackle poor air quality, protect health and meet legal obligations the following criteria should be addressed.*
>
> 1) *Development proposals should not:*
>
> a) *lead to further deterioration of existing poor air quality*
>
> b) *create any new areas that exceed air quality limits, or delay the date 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 of Part 1, as a minimum:*

[10] Mayor of London: The London Plan: The Spatial Development Strategy for Greater London, March 2021.

a) *development proposals must be at least Air Quality Neutral*

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

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

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

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

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

2) *What measures or design features will be put in place to reduce exposure to pollution, and how often 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."

2.3.3 The requirements of the London Local Plan have been considered throughout the AQA.

London Borough of Hillingdon Local Plan

2.3.4 The LBH Local Plan comprises:

- **Local Plan Part 1**[11] – a spatial vision and strategy, strategic objectives, core policies and a monitoring and implementation framework with clear objectives for achieving delivery; and
- **Local Plan Part 2**[12] – which outlines development management policies and site allocations and designations.

2.3.5 **Policy DMEI 14: Air Quality** relates specifically to air quality, and has been considered in this assessment:

> *"**Policy DMEI 14: Air Quality***
>
> *A) Development proposals should demonstrate appropriate reductions in emissions to sustain compliance with and contribute towards meeting EU limit values and national air quality objectives for pollutants*
>
> *B) Development proposals should, as a minimum:*
>
> *i) be at least "air quality neutral";*
>
> *ii) include sufficient mitigation to ensure there is no unacceptable risk from air pollution to sensitive receptors, both existing and new; and*
>
> *iii) actively contribute towards the improvement of air quality, especially within the Air Quality Management Area."*

2.3.6 This policy has been considered throughout the AQA.

London Borough of Hillingdon Air Quality Action Plan

2.3.7 The LBH Air Quality Action Plan (AQAP)[13] was produced as part of the council's duty to Local Air Quality Management (LAQM), outlining the action that would take to improve air quality in across Hillingdon between 2019 and 2024.

[11] London Borough of Hillingdon (2012) London Borough of Hillingdon Local Plan Part 1.
[12] London Borough of Hillingdon (2020) London Borough of Hillingdon Local Plan Part 2.
[13] London Borough of Hillingdon (2019) London Borough of Hillingdon Action Plan.

2.3.8 The actions are considered within 7 broad topics:

- Monitoring and other core statutory duties;
- Emissions from developments and buildings;
- Public health and awareness raising;
- Delivery servicing and freight;
- Borough fleet actions; and
- Cleaner transport.

2.4 Planning Guidance

2.4.1 A summary of the publications referred to in undertaking this assessment is provided in the following sections.

Local Planning Guidance Sustainable Design and Construction Supplementary Planning Guidance (2014)

2.4.2 The Sustainable Design and Construction Planning Guidance (SPG)[14] was published by the GLA in April 2014. The document aims to support developers, local planning authorities and neighbourhoods to achieve sustainable development, as well as proving guidance on how to achieve the London Plan objectives effectively.

2.4.3 The document provides guidance on the following key areas when undertaking an Air Quality Assessment:

- Assessment requirements;
- Construction and demolition;
- Design and occupation;
- Air Quality Neutral policy for buildings and transport; and,
- Emissions standards for combustion plant.

Land-Use Planning and Development Control: Planning for Air Quality (2017)

2.4.4 Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM) have published guidance[15] that offers comprehensive advice on when an air quality assessment may be required; what should be included in an assessment; how to determine

[14] Sustainable Design and Construction SPG, GLA, 2014.
[15] Environmental Protection UK and Institute of Air Quality Management (Version 1.2 Updated January 2017) Land Use Planning and Development Control: Planning for Air Quality.

the significance of any air quality impacts associated with a development; and, the possible mitigation measures that may be implemented to minimise these impacts.

National Planning Practice Guidance – Air Quality (2019)

2.4.5 This guidance[16] provides a number of guiding principles on how the planning process can take into account the impact of new development on air quality, it explains how much detail air quality assessments need to include for proposed developments, and how impacts on air quality can be mitigated. It also provides information on how air quality is taken into account by local authorities in both the wider planning context of Local Plans and neighbourhood planning, and in individual cases where air quality is a consideration in a planning decision.

2.5 London Local Air Quality Management Technical Guidance (2019)

2.5.1 The GLA has published technical guidance for use by London authorities in their review and assessment work. This guidance, referred to in this document as LLAQM.TG19[17], has been used where appropriate in the assessment presented herein.

2.5.2 Although the LLAQM technical guidance is based on the national LAQM technical guidance, it does incorporate London-specific elements to the review and assessment process.

Local Air Quality Management Review and Assessment Technical Guidance (2022)

2.5.3 The Department for Environment, Food and Rural Affairs (Defra) has published technical guidance for use by local authorities in their review and assessment work. This guidance, referred to in this document as LAQM.TG22[18], has been used where appropriate in the assessment presented herein.

Guidance on the Assessment of Dust from Demolition and Construction (2024)

2.5.4 This document[19] published by the IAQM was produced to provide guidance to developers, consultants and environmental health officers on how to assess the impacts arising from construction activities. The emphasis of the methodology is on classifying sites according to the risk of impacts (in terms of dust nuisance, PM_{10} impacts on public exposure and impact

[16] Department of Communities and Local Government (DCLG) (Updated November 2019) National Planning Practice Guidance.
[17] Greater London Authority (GLA) (2019) London Local Air Quality Management (LLAQM) Technical Guidance 2019 (LLAQM.TG (19)).
[18] Department for Environment, Food and Rural Affairs (Defra) (2022) Part IV The Environment Act 1995 as amended by the Environment Act 2021 Environment (Northern Ireland) Order 2002 Part III, Local Air Quality Management Technical Guidance LAQM.TG22.
[19] Institute of Air Quality Management (2024) Guidance on the Assessment of Dust from Demolition and Construction Version 2.2 (January 2024).

upon sensitive ecological receptors) and to identify mitigation measures appropriate to the level of risk identified.

Practice Note – The Control of Dust and Emissions from Construction and Demolition (2024)

2.5.5 The GLA has published a practice note regarding the control of dust and emissions from construction and demolition[20]. The note refers to the above IAQM guidance, which should be followed when assessing and mitigating for the impact of dust and emissions from construction and demolition of developments in London.

2.5.6 The note also highlights key aspects of the SPG which should be referred to, when carrying out construction dust assessments in London.

2.5.7 The following advice from the note has been considered in in the construction phase assessment for the Proposed Development:

> ***"National best practice guidance***
>
> *The Institute of Air Quality Management's (IAQM) guidance 'Assessment of Dust from Demolition and Construction' is considered best practice and is recommended to be used when assessing and managing the impacts from demolition and construction. Please follow the latest version of the guidance which can be found on the IAQM's guidance documents webpage.*
>
> ***Non-road mobile machinery (NRMM)***
>
> *The NRMM Low Emission Zone was introduced in 2015. It requires that all NRMM engines in London with a power rating between 37 kW and 560 kW meet an emission standard based on the engine emission "stage". Since the publication of the Mayor's SPG 'The Control of Dust and Emissions During Construction and Demolition' (2014), stage requirements (emission standards for NRMM) have been updated. From the 1st of January 2025 all NRMM will need to meet Stage IV and with all NRMM eventually needing to be zero emission throughout London from 1st January 2040. Developers should ensure that NRMM used for construction and demolition complies with the required stage set out on the GLA's NRMM webpage which sets out which stages are applicable.*

[20] Greater London Authority (GLA) (2024) Practice Note – The Control of Dust and Emissions from Construction and Demolition [Online] https://www.london.gov.uk/sites/default/files/2024-07/Control-of-Dust-Practice-Note.pdf [Accessed 12/12/2024]

Screening Distances

When assessing the need for a Dust Risk Assessment, developers are expected to use the screening criteria set out in paragraph 4.16 of 'The Control of Dust and Emissions During Construction and Demolition' SPG.

Dust Suppressants

Developers and LPAs are also encouraged to take into consideration information in 'The Control of Dust and Emissions During Construction and Demolition' (2014) SPG regarding dust suppressants which can be found in sections 5.41 to 5.45, and Appendix 7."

3 SCOPE AND METHODOLOGY

3.1 Scope

3.1.1 The scope of the assessment has been determined in the following way:

- A review of the plans of the Proposed Development;
- Desktop study to confirm the locations of nearby existing receptors that may be sensitive to changes in local air quality; and
- Review of LBH's latest available Air Quality Annual Status Report[21] (ASR) and air quality data surrounding the Site including data from Defra[22].

3.1.2 The scope of the assessment includes consideration of the potential impact on local air quality resulting from:

- Dust and particle matter generated by on-site activities during the construction phase;
- Increases in pollutant concentrations as a result of exhaust emissions arising from construction traffic and plant; and
- Increases in pollutant concentrations as a result of exhaust emissions arising from traffic generated by the Proposed Development once operational.

3.2 Construction Phase Assessment

3.2.1 Dust comprises particles typically in the size range of 1-75 micrometres (μm) in aerodynamic diameter and is created through the action of crushing and abrasive forces on materials. The larger dust particles fall out of the atmosphere quickly after initial release and therefore tend to be deposited in close proximity to the source of emission. Dust therefore is unlikely to cause long term or wide-spread changes to air quality; however, it's deposition on property and cars can cause 'soiling' and discolouration. This may result in complaints of nuisance through amenity loss or perceived damage caused, which is usually temporary.

3.2.2 The smaller particles of dust are known as particulate matter, with less than 10μm in aerodynamic diameter (PM_{10}) representing only a small proportion of total dust released; this includes a finer fraction, known as $PM_{2.5}$ (with an aerodynamic diameter less than 2.5μm). As these particles are at the smaller end of the size range of dust particles, they remain suspended in the atmosphere for a longer period of time than the larger dust particles, they

[21] London Borough of Hillingdon (2024) Air Quality Annual Status Report (ASR) for 2023.
[22] Department for Environment, Food and Rural Affairs (Defra) Local Air Quality Management (LAQM) Support Pages.

can therefore be transported by wind over a wider area. PM_{10} and $PM_{2.5}$ are small enough to be drawn into the lungs during breathing, which in sensitive members of the public could have a potential impact on health. However, it is worth noting that, according to the IAQM guidance, the majority of fugitive particulate emissions arising from construction sites are expected to relate to the coarser fractions (i.e. $PM_{2.5-10}$) with just 10-15% expected to comprise $PM_{2.5}$. The IAQM guidance therefore focusses on PM_{10} for the purposes of assessment.

3.2.3 An assessment of the likely significant impacts on local air quality due to the generation and dispersion of dust and PM_{10} during the construction phase has been undertaken using: the relevant assessment methodology published by the IAQM; the available information for this phase of the Proposed Development has been provided by the Client and the is supported by the professional judgement of the NoiseAir team.

3.2.4 The IAQM methodology assesses the risk of potential dust and PM_{10} impacts from the following four sources: demolition, earthworks, construction and trackout. It takes into account the nature and scale of the activities undertaken for each source and the sensitivity of the area to an increase in PM_{10} levels to assign a level of risk. Risks are described in terms of there being a low, medium or high risk of dust impacts. Once the level of risk has been identified, and the significance of residual effects determined. A summary of the IAQM assessment methodology is provided in **Appendix C**.

3.2.5 In addition to the impacts on local air quality due to on-site construction activities, exhaust emissions from construction vehicles and plant may have an impact on local air quality adjacent to the routes used by these vehicles to access the application Site and in the vicinity of the application Site itself. As information on the number of vehicles and plant associated with the construction phase was not available at the time of writing, a qualitative assessment of their impact on local air quality has been undertaken using professional judgement and considering the following:

- The number and type of construction traffic and plant likely to be generated by this phase of the development;
- The number and proximity of sensitive receptors to the application Site and along the likely routes to be used by construction vehicles; and
- The likely duration of the construction phase and the nature of the construction activities undertaken.

3.3 Operational Phase Assessment

3.3.1 The Proposed Development has the potential to expose future users to any existing air quality issues.

3.3.2 The EPUK and IAQM guidance sets out two stages for determining when an assessment of potential impacts on the local area is likely to be necessary. The Stage 1 criteria for an air quality assessment is presented below:

A. If any of the following apply:

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

B. Coupled with any of the following:

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

3.3.3 Should these criteria not be met, then the EPUK and IAQM guidance considers air quality impacts associated with a scheme to be negligible and no further assessment is required. Should the criteria be met or exceeded, proceed to Stage 2. Stage 2 of the EPUK and IAQM guidance document states the following criteria to help establish when an air quality assessment is likely to be considered necessary:

- Proposals that will cause a change in Light Duty Vehicle (LDV) flows of more than 100 AADT within or adjacent to an AQMA or more than 500 elsewhere.
- Proposals that will cause a change in HDV flows of more than 25 AADT within or adjacent to an AQMA or more than 100 elsewhere.
- Proposals that would realign roads within an AQMA by more than 5m;
- Proposals that will introduce new junctions or remove existing junctions near relevant receptors.
- Proposals that will introduce or change a bus station or change flows of buses by more than 25 AADT within an AQMA or more than 100 AADT elsewhere.
- Proposals which will include an underground car park with extraction system which will be within 20m of a relevant receptor and have more than 100 movements per day.
- Proposals which include either a centralised plant using biofuel, a combustion plant with single or thermal input >300KWh or a standby emergency generator associated with a centralised energy centre; and,

- Proposals which include combustion processes of any size.

3.3.4 Should these criteria not be met, then the EPUK and IAQM guidance documents consider air quality impacts associated with a scheme to be not significant and no further assessment being required.

3.3.5 Should screening of the traffic data indicate that any of the above criteria are met, then potential impacts at sensitive receptor locations can be assessed by calculating the predicted change in pollutant concentrations as a result of the Proposed Development.

3.3.6 The significance of predicted impacts can then be determined in accordance with the methodology outlined in the EPUK and IAQM guidance.

3.4 Future Exposure

3.4.1 Given the use of the Proposed Development, there are no proposed receptors that will be sensitive to the annual mean AQOs/interim target. The requirement to undertake an exposure assessment has therefore been scoped out, in accordance with the EPUK and IAQM guidance.

3.5 Selection of Background Concentrations

3.5.1 Background pollutant data for the operational phase assessment have been taken from the national maps provided on the Defra[23] website, where background concentrations of those pollutants included within the AQS have been mapped at a grid resolution of 1x1 km for the whole of the UK. Estimated background concentrations all available for all years between 2021 and 2040. The maps assume that background concentrations will improve (i.e., reduce) overtime, in line with the predicted reduction in vehicle emissions, and emissions from other sources.

[23] Department for Environment, Food and Rural Affairs (Defra) Background Concentrations 2021 [Online] Available at https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2021 [Accessed on 12/12/2024].

4 BASELINE

4.1 Introduction

4.1.1 Existing air quality conditions in the vicinity of the Site were identified in order to provide a baseline for assessment. These are detailed in the following Sections.

4.2 Local Air Quality Management

4.2.1 As required by the Environment Act (1995), LBH undertakes reviews and assessment of air quality within their area of jurisdiction. Currently, LBH has declared a borough wide Air Quality Management Area (AQMA), Hillingdon AQMA, which was declared in 2003 for exceedances of the NO_2 annual mean objective.

4.3 Air Quality Monitoring

4.3.1 Monitoring of pollutant concentrations is undertaken by LBH throughout their area of jurisdiction. According to the most recently available ASR (published in 2024), LBH undertook monitoring at 12 automatic monitoring stations and NO_2 monitoring at 44 non-automatic monitoring sites during 2023.

4.3.2 No monitoring is carried out within the immediate vicinity of the Site. The closest annual mean NO_2 concentrations (within 2.5km) recorded by LBH for 2021-2023 (i.e. the most recent years with available data, as presented in the ASR), are presented in **Table 2** and shown on **Figure 2**.

Table 2: LBH Annual Mean NO_2 Results

Monitoring Site ID	Site Type	Distance to Kerb of Nearest Road (m)	Approx. Distance to the Site (km)	Monitored NO_2 Concentration (µg/m³)		
				2021	2022	2023
HILL19	Background	37	1.8	27.6	28.7	26.2
HILL13	Roadside	1	2.2	21	21	21.3
HILL17	Background	14	2.4	24.2	24.1	22.6
HILL18	Roadside	2	1.9	27.6	28.3	25.7
HILL 27	Roadside	12	1.8	25.3	26.8	26.9
HILL 28	Roadside	2	1.5	23.5	27.1	21.4

DT= Diffusion Tube

4.3.3 As shown in **Table 2**, measured annual mean NO_2 concentrations at the closest monitoring locations to the Site have remained below the AQO of 40 µg/m^3 since at least 2021.

4.4 Background Pollutant Concentrations

4.4.1 Predictions of background pollutant concentrations on a 1 km-by-1 km basis have been produced by DEFRA for the entire UK to assist local authorities in their review and assessment of air quality. The proposed site is located in grid square 508500, 180500. Data for this location was downloaded from the DEFRA website for 2025 (i.e. the current and earliest possible opening year) and is summarised in **Table 3**.

Table 3: Predicted Background Pollutant Concentrations

OS Grid Reference (X, Y; m)	Predicted Background Pollutant Concentration (µg/m^3) for 2025		
	NO_2	PM_{10}	$PM_{2.5}$
508500, 180500	15.5	13.3	7.9
Rounded to one decimal point			

4.4.2 As shown in **Table 3**, predicted background NO_2, PM_{10} and $PM_{2.5}$ concentrations are well below the relevant AQOs/interim target across the assessment extents for 2025.

4.5 London Atmospheric Emissions Inventory

4.5.1 The London Atmospheric Emissions Inventory (LAEI) pollution maps[24] provide modelled estimates of 2019 baseline annual mean NO_2, PM_{10} and $PM_{2.5}$ in 20m grids for the entire area of Greater London, as well as data forecast to 2025 and 2030.

4.5.2 2019 and 2025 LAEI modelled concentrations for grid point 508032, 180453 (i.e., within the Site boundary) on are shown in **Table 4**.

Table 4: LAEI Modelled Pollutant Concentrations

OS Grid Reference (X, Y; m)	LAEI Modelled Pollutant Concentrations (µg/m^3)					
	2019			2025		
	NO_2	PM_{10}	$PM_{2.5}$	NO_2	PM_{10}	$PM_{2.5}$
508032, 180453	25.4	16.7	10.1	19.6	13.4	8.8
Rounded to one decimal point						

4.5.3 As shown in **Table 4**, LAEI modelled NO_2, PM_{10} and $PM_{2.5}$ concentrations are below the relevant AQOs/interim target across the assessment extents for 2019 and 2025 (i.e. the earliest possible opening year).

[24] London Atmospheric Emissions Inventory, 2019. Annual Pollution Maps, Kings College London on behalf of Greater London Authority.

5 ASSESSMENT

5.1 Introduction

5.1.1 There is the potential for air quality impacts as a result of the construction and operation of the Proposed Development. These are assessed in the following sections.

5.2 Construction Phase Assessment

5.2.1 Construction activities have the potential to generate and/ or re-suspend dust and PM_{10} sources include:

- Site clearance and preparation including demolition activities;
- Preparation of temporary access/ egress to the Site and haulage routes;
- Earthworks;
- Materials handling, storage, stockpiling, spillage and disposal;
- Movement of vehicles and construction traffic within the Site (including excavators and dumper trucks);
- Use of crushing and screening equipment/ plant;
- Exhaust emissions from plant, especially when used at the extremes of their capacity and during mechanical breakdown;
- Construction of buildings, roads and areas of hard standing alongside fabrication processes;
- Internal and external finishing and refurbishment;
- Trackout, whereby earth is carried from the Site on vehicle tyres, deposited on roads and may later become suspended in the air as a result of vehicle movements; and
- Site landscaping after completion.

5.2.2 Most of the releases are likely to occur during the 'working week'. However, for some potential release sources (e.g., exposed soil produced from significant earthworks activities) in the absence of dust control mitigation measures, dust generation has the potential to occur 24 hours per day over the period during which such activities are to take place.

Assessment of Potential Dust Emission Magnitude

5.2.3 The IAQM assessment methodology has been used to determine the potential dust emission magnitude for the following four different dust and PM_{10} sources:

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

5.2.4 The findings of the assessment are presented below.

Demolition

5.2.5 It is anticipated that demolition works will be minimal, largely applicable to internal walls, with some minor external demolition to the west of the Proposed Development. As such, the potential dust emission magnitude from construction activities is considered to be **small**.

Earthworks

5.2.6 As the existing building is to be retained, no earthworks activities are anticipated. Therefore, earthworks activities have not been scoped out and are not considered further in the construction phase assessment.

Construction

5.2.7 The total building volume to be constructed is estimated to be less than 12,000m^3, and will predominantly involve internal construction. Therefore, the potential dust emission magnitude from construction activities is considered to be **small**.

Trackout

5.2.8 Information on the number of HDVs associated with this phase of the Proposed Development is currently unavailable and professional judgement has been used. It is assumed that given the size of the development, there will likely be less than 20 HDV outward movements in any one day. As such, the potential dust emission magnitude from trackout activities is considered to be **small**.

5.2.9 **Table 5** provides a summary of the potential dust emission magnitude determined for each construction activity considered.

Table 5: Potential Dust Emission Magnitude	
Activity	**Dust Emission Magnitude**
Demolition	Small
Earthworks	-
Construction	Small
Trackout	Small

Assessment of Sensitivity of the Study Area

5.2.10 The prevailing wind direction is predominantly from the southwest. Therefore, receptors located to the northeast of the Site are more likely to be affected by dust and particulate matter emitted and re- suspended during the construction phase.

5.2.11 Under lower wind speed conditions, it is likely that the majority of dust would be deposited in the area immediately surrounding the source. Receptors northeast of the Site are expected to be affected the most as a result of the prevailing wind direction.

5.2.12 The closest ecological site to the Proposed development is Yeading Meadows Local Nature Reserve, which is 2.7km northwest of the Proposed Development. Therefore, there are no ecological receptors within 50m of the development boundary or access route, or within 50m of the Site entrance as identified using Multi Agency Geographic Information for the Countryside (MAGIC) website[25].

5.2.13 Following the IAQM assessment methodology, the sensitivity of the area to changes in dust and PM_{10} has been derived for each of the activities considered in the construction phase. The results are shown in **Table 6**.

Table 6: Sensitivity of the Study Area to Dust Soiling Effects				
Potential Impact	**Sensitivity of the Surrounding Area**			
	Demolition	**Earthworks**	**Construction**	**Trackout**
Dust Soiling	Medium	-	Medium	Medium
Human Health	Low	-	Low	Low

Risk of Impacts

5.2.14 The predicted dust emission magnitude has been combined with the defined sensitivity of the area to determine the risk of impacts during the construction phase, prior to mitigation. **Table 7** below provides a summary of the risk of just impacts for the Proposed Development. The risk category identified for each construction activity has been used to determine the level of mitigation required.

[25] Department for Environment, Food and Rural Affairs (Defra) (2024) Multi-Agency Geographic Information for the Countryside (MAGIC) [Online] Available at https://magic.defra.gov.uk/ [Accessed on 12/12/2024].

Table 7: Summary Dust Risk Table Defining Site Specific Mitigation				
Potential Impact	**Dust Risk**			
	Demolition	**Earthworks**	**Construction**	**Trackout**
Dust Soiling	Low Risk	-	Low Risk	Low Risk
Human Health	Negligible	-	Negligible	Negligible

Construction Vehicles and Plant

5.2.15 The greatest impact on air quality is emissions from vehicles and plant associated with the construction phase, and these impacts will be in the areas immediately adjacent to the Site access road. Construction traffic will access the Site via the local road network.

5.2.16 Final details of the exact plant and equipment likely to be used on-site will be determined by the appointed contractor. The number of plant and their location within the Site are likely to be variable over the construction.

5.2.17 Based on the current local air quality in the area, the proximity of sensitive receptors to the roads likely to be used by construction vehicles, and the likely numbers of construction vehicles and plant that will be used, the impacts are considered to being **negligible** in accordance with the assessment significance criteria.

5.3 Operational Phase Assessment

Potential Development Impacts

5.3.1 Any vehicle movements associated with the Proposed Development will generate exhaust emissions on the local and regional road networks.

5.3.2 It is understood that a planning application is to be submitted proposing an extension of the existing Travelodge hotel at the site, comprising 58 additional bedrooms and additional infrastructure, as follows:

- 13 additional rooms on the ground floor within the vacant ‘Wetherspoons’ public house, with a new café/bar restaurant;
- 38 additional rooms on the first floor of the serviced office suites; and
- 7 additional rooms within the existing hotel at second floor level (where the existing café is located).

5.3.3 As the criteria in Stage 1 of the IAQM and EPUK criteria has been met, it is deemed appropriate to consider the Stage 2 criteria.

5.3.4 Paul Mew Associates Ltd, the appointed Transport Consultant working on the project, have predicted that the trip generation associated with the Proposed Development will be:

- 46 additional vehicle movements per 'typical weekday'; and
- 50 additional vehicle movements per 'typical weekend day'.

5.3.5 Based on this information, none of the Stage 2 criteria are met. Air quality impacts are therefore considered to be **negligible,** and no further assessment is deemed necessary.

Potential Future Exposure

5.3.6 As previously discussed, given the use of the Proposed Development, no receptors have been proposed that will be sensitive to the annual mean AQOs/interim target. The requirement to undertake an exposure assessment has therefore been scoped out, in accordance with the EPUK and IAQM guidance.

6 MITIGATION AND RESIDUAL EFFECTS

6.1 Construction Phase

6.1.1 Based on the construction phase assessment results, mitigation will be required for this phase. As the Site poses a maximum of **low risk** for dust impacts, the recommended mitigation measures for a **low risk** site, taken from the IAQM guidance and the GLA SPG, are presented below:

Communications

- Display the name and contact details of person(s) accountable for air quality pollutant emissions and dust issues on the site boundary.
- Display the head or regional office contact information.

Site Management

- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.
- Make the complaints log available to the local authority when asked.
- Record any exceptional incidents that cause dust and/or air emissions, either on- or off-site, and the action taken to resolve the situation in the log book.

Monitoring

- Carry out regular site inspections to monitor compliance with the proposed mitigation measures, record inspection results, and make an inspection log available to the local authority when asked.
- Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.
- Agree dust deposition, dust flux, or real-time PM_{10} continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction.

Preparing and maintaining the sites

- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.

- Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.
- Avoid site runoff of water or mud.

Operating vehicle/machinery and sustainable travel

- Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone.
- Ensure all non-road mobile machinery (NRMM) comply with the relevant standards. From the 1st of January 2025 all NRMM will need to meet Stage IV and with all NRMM eventually needing to be zero emission throughout London from 1st January 2040. The Client should ensure that NRMM used for construction and demolition complies with the required stage set out on the GLA's NRMM webpage[26] which sets out which stages are applicable.
- Ensure all vehicles switch off engines when stationary – no idling vehicles.
- Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where possible.
- Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.
- Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).

Operations

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.
- Ensure an adequate water supply on the site for effective dust/particulate matter mitigation (using recycled water where possible).
- Use enclosed chutes, conveyors and covered skips.
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.

[26] Greater London Authority (GLA) (2024) Non-Road Mobile Machinery (NRMM) [Online] https://www.london.gov.uk/programmes-and-strategies/environment-and-climate-change/pollution-and-air-quality/nrmm [Accessed 07/01/2025]

Waste Management

- Avoid bonfires or burning of waste materials.

Demolition

- Ensure effective water suppression is used during demolition operations. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.
- Avoid explosive blasting, using appropriate manual or mechanical alternatives.
- Bag and remove any biological debris or damp down such material before demolition.

6.1.2 Detailed mitigation measures to control construction traffic should be discussed with the Local Authority to establish the most suitable access and haul routes for the Site traffic. The most effective mitigation will be achieved by ensuring that construction traffic does not pass along sensitive roads (i.e., congested roads, residential roads, or unsuitable junctions for large vehicles) where possible. Construction vehicles should be kept clean through the use of wheel washers and sheeted when on public highways. Timing of large- scale vehicle movements to avoid peak hours on the local road network would also be of benefit.

6.2 Operational Phase

6.2.1 The impact of the operational phase of the Proposed Development has been found to be **not significant**, in accordance with the EPUK and IAQM guidance, therefore, no mitigation measures are required.

6.3 Residual Effect

6.3.1 During the construction phase, the residual effect of dust and PM_{10} generated by construction activities following the application of the mitigation measures described above and good Site practice is considered to be **not significant**. In addition, the residual effect of emissions to air from construction vehicles and plant on local air quality is considered to be **not significant**.

6.3.2 During the operational phase, the residual effect of emissions to air from vehicles associated with the Proposed Development is considered to be **not significant**.

7 AIR QUALITY NEUTRAL ASSESSMENT

7.1 Introduction

7.1.1 The London Plan requires that all developments are 'air quality neutral' to ensure proposals do not lead to further deterioration of existing poor air quality. In order to support the policy, guidance[27] has been produced on behalf of the GLA. The document provides a methodology for determining potential emissions from a development and benchmark values for comparison purposes. Where the benchmark is exceeded then action is required, either locally or by way of offsetting.

7.1.2 The Air Quality Neutral Assessment for the Proposed Development is outlined below.

7.2 Building Emissions

7.2.1 The Client has confirmed that the extension to the existing hotel will be heated electrically. The Proposed Development can therefore be assumed to be air quality neutral from a Building Emissions perspective, in accordance with the GLA guidance.

7.3 Transport Emissions

7.3.1 Paul Mew Associates Ltd have predicted that the trip generation associated with the Proposed Development will be:

- 46 additional vehicle movements per ‘typical weekday’; and
- 50 additional vehicle movements per ‘typical weekend day’.

7.3.2 Therefore, in accordance with the GLA guidance, an air quality neutral assessment that considers the impact of transport movements associated with the Proposed Development has been carried out.

7.3.3 As a worst-case approach, the predicted ‘typical weekend day’ daily trip rate value has been used in the calculation.

7.3.4 As per the GLA guidance, the Transport Emissions Benchmark (TEB) is defined as the predicted number of single trips per m^2 of floorspace over a year (trips/m^2/year) for non-residential use. The total development trip rate per year is then compared to the TEB.

7.3.5 The Site variables required for the TEB calculation are presented in **Table 8**.

[27] London Plan Guidance - Air Quality Neutral, GLA, 2023.

Table 8: Site Variables				
Site Use	**Site Size (m²)**	**Location**	**Daily Trip Rate**	**Annual Trip Rate**
Hotel	3,500	Outer London	50	**18,250**

7.3.6 In accordance with the Table 4.1 of the GLA guidance, a Proposed Development with a land use of 'hotel' in Outer London, has a benchmark trip rate of **6.9**.

7.3.7 The TEB calculation in **Table 9** has been carried out in accordance with Table 4.2 of the GLA guidance.

Table 9: Calculation of TEB		
Site Size (m²)	**Trip rate benchmark**	**Total benchmark trip rate (trips/year)**
3,500	6.9	3,500 x 6.9 = **24,150**

7.3.8 The total development trip rate per year of **18,250** is less than the TEB of **24,150**. In accordance with the GLA guidance, the Proposed Development can therefore be considered Air Quality Neutral in terms of transport emissions.

7.4 Summary

7.4.1 Potential emissions from the Proposed Development were assessed in order to determine compliance with the air quality neutral requirements of the London Plan.

7.4.2 Regarding Building Emissions, the Client has confirmed that the extension to the existing hotel will be heated electrically and therefore the proposals do not include any new combustion processes.

7.4.3 Regarding Transport Emissions, the total development trip rate per year is less than the TEB.

7.4.4 As such, the proposals can be considered to be **Air Quality Neutral** from both a Building and Transport Emissions perspective, in line with the GLA guidance.

8 SUMMARY AND CONCLUSIONS

8.1.1 NoiseAir Limited was commissioned to undertake an AQA in support of a Proposed Development at a Travelodge hotel at Stockley Park, Uxbridge, London.

8.1.2 A qualitative assessment of the potential impacts on local air quality from construction activities has been carried out for this phase of the Proposed Development using the IAQM methodology. This identified that there is a maximum of **low risk** of dust soiling impacts and a **negligible risk** of increases in particulate matter concentrations due to unmitigated construction activities for human health. However, through good site practice and the implementation of highly recommended mitigation measures, the effect of dust and particulate matter releases would be significantly reduced. The residual effects of dust and particulate matter generated by construction activities on air quality are therefore considered to be not significant.

8.1.3 Based on the guidance provided by the EPUK and IAQM, the Proposed Development is expected to result in a negligible impact associated with operational phase traffic on nearby receptors, and the residual effects are considered to be not significant.

8.1.4 The air quality neutral assessment has identified that the Proposed Development is Air Quality Neutral in relation to both Building and Transport Emissions, as electric heating is to be provided and the total development trip rate per year is less than the TEB.

8.1.5 It is considered that the Proposed Development complies with national and local policy for air quality and as such, the Site is suitable for the proposed use from an air quality perspective.

FIGURES

Figure 1 Site Location

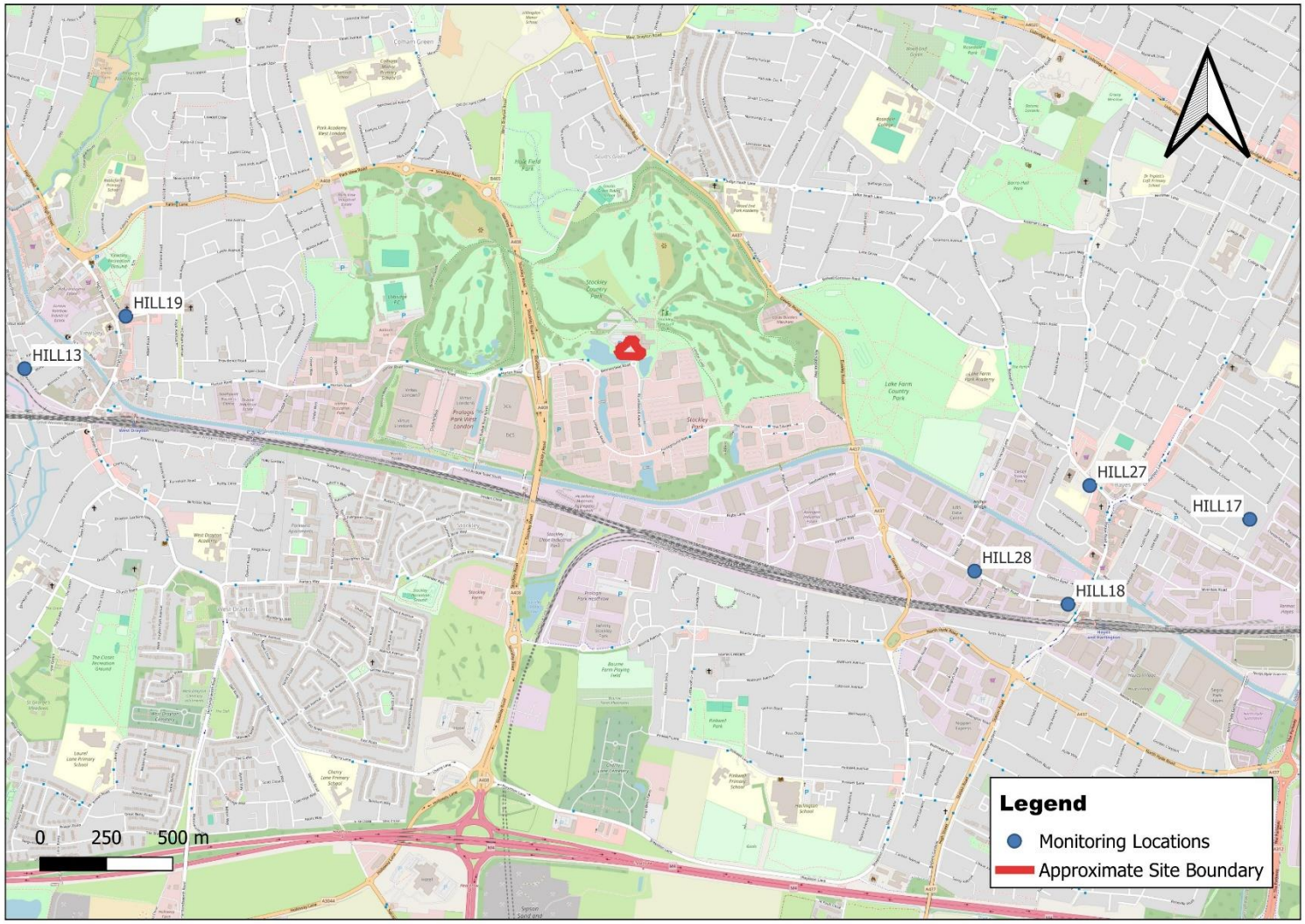

Figure 2 Monitoring Locations around the Site

APPENDIX A - REPORT LIMITATIONS

This Report is presented to BBC Pension Trust and may not be used or relied on by any other person or by the client in relation to any other matters not covered specifically by the scope of this report.

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APPENDIX B – GLOSSARY

Table B1: Glossary	
AADT Annual Average Daily Traffic	A daily total traffic flow (24hrs), expressed as mean daily floor across all 365 days of the year.
Adjustment	Application of a correction factor to modelled results to account for uncertainties in the model.
Accuracy	A measure of how well a set of data fits the true value.
Air quality objective	Policy targets generally expressed as a maximum ambient concentration to be achieved, either without exception or with the permitted number of exceedances within a specific time scale (see also air quality standard).
Ambient air	Outdoor air in the troposphere, excluding workplace air.
Annual mean	the average (mean) of the concentrations measured for each pollutant for one year.
AQMA	Air Quality Management Area.
AQO	Air Quality Objective.
AURN	Automatic Urban and Rural (air quality) Network, managed by contractors on behalf of Defra.
Conservative	Trending to over predict the impact rather than under predict.
Data Capture	The percentage of all the possible measurements forgiven periods that were validly measured.
Defra	Department for Environment, Food and Rural Affairs.
DfT	Department for Transport.
EFT	Emission Factor Toolkit.
Emission rate	The quantity of a pollutant released from a source over a given period of time.
EPUK	Environmental Protection (UK).
Exceedance	A period of time where the concentration of a pollutant is greater than the appropriate air quality standard.

HDV/HGV	Heavy Duty Vehicle/Heavy Goods Vehicle.
IAQM	Institute of Air Quality Management.
LAQM	Local Air Quality Management.
Model adjustment	Following model verification, the process by which modelled results are amended. This corrects for systematic error.
NO_2	Nitrogen dioxide.
NO_X	Nitrogen oxides.
PM_{10}	Particulate matter with an aerodynamic diameter of less than 10 micrometres.
$PM_{2.5}$	Particulate matter with an aerodynamic diameter of less than 2.5 micrometres.
Road link	A length of road which is considered to have the same flow of traffic along it. Usually, a link is the road from one junction to the next.
$\mu g/m^3$ micrograms per cubic metre	A measure of concentration in terms of mass per unit volume. A concentration of $1\mu g/m^3$ means that one cubic metre of air contains one microgram (millionth of a gram) of a pollutant.

APPENDIX C – IAQM/SPG CONSTRUCTION DUST ASSESSMENT METHODOLOGY

IAQM/SPG Construction Dust Assessment Methodology

Step 1 – Screening the Need for a Detailed Assessment

In accordance with the GLA practice note, schemes in London should use the screening criteria set out in paragraph 4.16 of 'The Control of Dust and Emissions During Construction and Demolition' SPG; an assessment will normally be required where there is 'human 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 detailed assessment of effects on 'ecological receptors' will be required where an 'ecological receptor' is within:

- 50 m of the boundary of the site; or
- 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance(s).

For specific (high risk) schemes the planning authority may require dust assessment despite the proposed site falling outside the distances above.

Where the need for more detail assessment is screened out, it can be concluded that the level of risk is 'negligible', and any effects will not be significant.

Step 2a – Define the Potential Dust Emission Magnitude

The dust emission magnitude is based on the scale of the anticipated works and should be classified as Small, Medium, or Large. The following are examples of how the potential dust emission magnitude for different activities can be defined.

Note that, in each case, not all criteria need to be met; other criteria may be used if justified within the assessment. Where relevant, multiple screening assessments may be completed for different development phases (or even sub-phases where demolition may be brief or there is a very short period of intense activity, for example).

Table C1: Construction Dust - Magnitude of Emission

Magnitude	Activity	Criteria
Large	Demolition	- Total volume of building to be demolished greater than 75,000 m^3. - Potentially dusty material (e.g., concrete). - On-site crushing and screening.

Table C1: Construction Dust - Magnitude of Emission		
Magnitude	**Activity**	**Criteria**
		- Demolition activities more than 12 m above ground level.
	Earthworks	- Total site area greater than 110,000 m^2. - Potentially dusty soil type (e.g., clay, which will be prone to suspension when dry due to small particle size). - More than 10 heavy earth moving vehicles active at any one time. - Formation of bunds greater than 6 m in height.
	Construction	- Total building volume greater than 75,000 m^3. - On site concrete batching. - Sandblasting.
	Trackout	- More than 50 Heavy Duty Vehicle (HDV) trips per day. - Potentially dusty surface material (e.g., high clay content). - Unpaved road length greater than 100 m.
Medium	Demolition	- Total volume of building to be demolished between 12,000 m^3 and 75,000 m^3. - Potentially dusty construction material. - Demolition activities 6 m to 12 m above ground level.
	Earthworks	- Total site area between 18,000 m^2 and 110,000 m^2. - Moderately dusty soil type (e.g., silt). - Between 5 and 10 heavy earth moving vehicles active at any one time. - Formation of bunds between 3 m and 6 m in height.
	Construction	- Total building volume 12,000 m^3 to 75,000 m^3. - Potentially dusty construction material (e.g., concrete). - On site concrete batching.
	Trackout	- 20 to 50 HDV trips per day. - Moderately dusty surface material (e.g., high clay content).

Table C1: Construction Dust - Magnitude of Emission		
Magnitude	**Activity**	**Criteria**
		- Unpaved road length 50 m to 100 m.
Small	Demolition	- Total volume of building to be demolished less than 12,000 m^3. - Construction material with low potential for dust release (e.g., metal cladding or timber). - Demolition activities less than 6 m above ground.
	Earthworks	- Total site area less than 18,000 m^2. - Soil type with large grain size (e.g., sand). - Less than 5 heavy earth moving vehicles active at any one time. - Formation of bunds less than 3 m in height.
	Construction	- Total building volume less than 12,000 m^3. - Construction material with low potential for dust release (e.g., metal cladding or timber).
	Trackout	- Less than 20 HDV trips per day. - Surface material with low potential for dust release. - Unpaved road length less than 50 m.

Step 2b – Define the Sensitivity of the Area

The tables below present the IAQM assessment methodology to determine the sensitivity of the area to soiling, human health and ecological impacts respectively. The IAQM guidance provides guidance to allow sensitivity of individual receptors 2 to soiling and health effects to assist in the assessment of the overall sensitivity of the study area.

Table C2: Sensitivity of the Area to Dust Soiling Effects					
Receptor Sensitivity	**Number of Receptors**	**Distance from the Source (m)**			
		<20	**<50**	**<100**	**<250**
High	>100	High	High	Medium	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

Table C3: Sensitivity of the Area to Human Health Impacts						
Receptor Sensitivity	Annual Mean PM_{10} Concentrations ($\mu g/m^3$)	Number of Receptors	Distance from the Source (m)			
			<20	<50	<100	<250
High	>32	>100	High	High	High	Medium
		10-100	High	High	Medium	Low
		1-10	High	Medium	Low	Low
	28-32	>100	High	High	Medium	Low
		10-100	High	Medium	Low	Low
		1-10	High	Medium	Low	Low
	24-28	>100	High	Medium	Low	Low
		10-100	High	Medium	Low	Low
		1-10	Medium	Low	Low	Low
	<24	>100	Medium	Low	Low	Low
		10-100	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Medium	>32	>10	High	Medium	Low	Low
		1-10	Medium	Low	Low	Low
	28-32	>10	Medium	Low	Low	Low
		1-10	Low	Low	Low	Low
	24-28	>10	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
	<24	>10	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Low	-	>1	Low	Low	Low	Low

Table C4: Sensitivity of the Area to Ecological Impacts		
Receptor Sensitivity	Distance from the Source (m)	
	<20	<50
High	High	Medium
Medium	Medium	Low
Low	Low	Low

Step 2c – Define the Risk of Impacts

The dust emissions magnitude determined in Step 2A should be combined with the sensitivity of the area determined at Step 2B to determine the risk of impacts without mitigation applied. For those cases where the risk category is 'negligible' no mitigation measures beyond those required by legislation will be required.

Table C5: Risk of Dust Impacts			
Sensitivity of Surrounding	Dust Emission Magnitude		
	Large	Medium	Small
Demolition			
High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Low	Medium Risk	Low Risk	Negligible
Earthworks and Construction			
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible
Trackout			
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Step 3 – Site Specific Mitigation

Having determined the risk categories for each of the four activities it is possible to determine the site- specific measures to be adopted. These measures will be related to whether the site is considered to be a law, medium or high risk Site. The IAQM guidance details the mitigation measures required for low, medium and high risk sites as determined in Step 2C.

Step 4 – Determine Significant Effects

Once the risk of dust impacts has been determined in Step 2C under the appropriate dust mitigation measures identified in Step 3, the final steps is to determine whether there are significant effects arising from the construction phase. For almost all construction activities, the application of effective mitigation should prevent any significant effects occurring to sensitive receptors and the residual effects will normally be negligible.

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