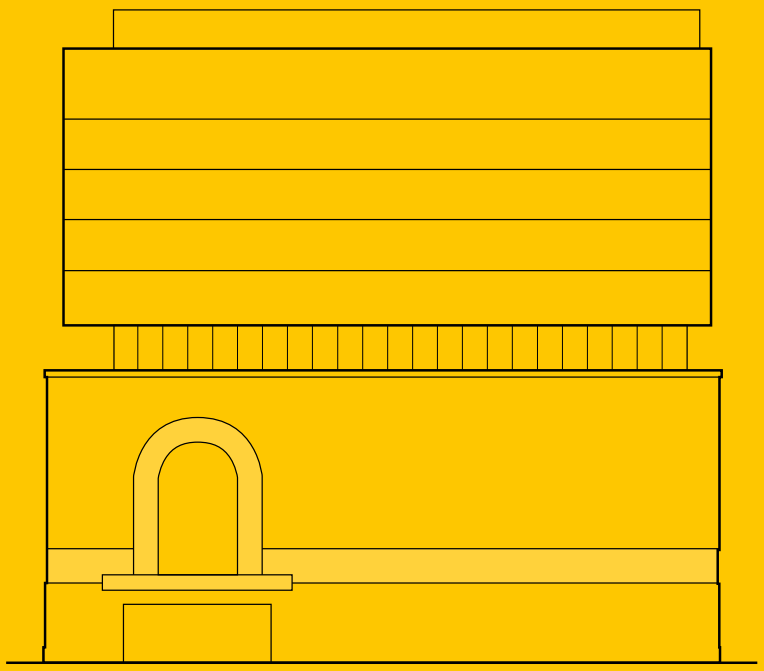


SAVILLE THEATRE

135 SHAFTESBURY AVENUE

AIR QUALITY ASSESSMENT
34/13914

HOARE LEA

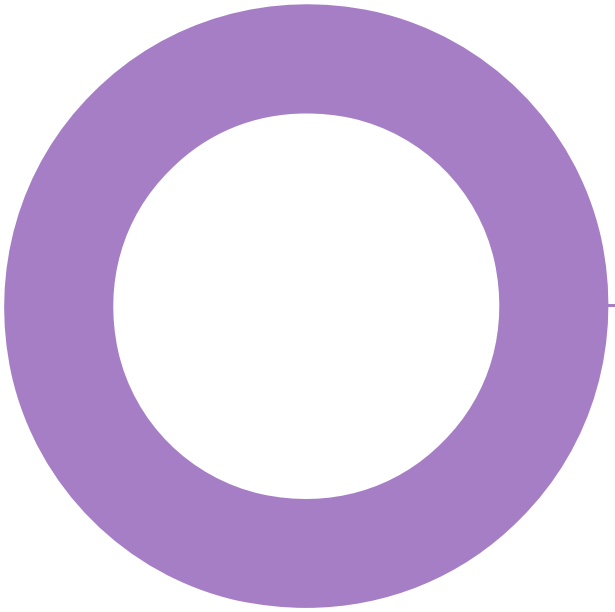
HOARE LEA

Former Saville Theatre. 135-149 Shaftesbury Avenue, London.

YC Saville Theatre Limited.

AIR QUALITY
AIR QUALITY ASSESSMENT

REVISION 03 – 31 JANUARY 2024



Audit sheet.

Rev.	Date	Description of change / purpose of issue	Prepared	Reviewed	Authorised
00	18/01/2024	First Draft	AJ	OP	AD
01	23/01/2024	First Issue	AJ	OP	CE
02	29/01/2024	Second Issue	AJ	OP	CE
03	31/01/2024	Third Issue	TB	AD	AD

Project number: 34/13914
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Contents.

Executive Summary.

Hoare Lea have been commissioned by YC Saville Theatre Limited to undertake an Air Quality Assessment to support the planning application for the proposed redevelopment at former Saville Theatre at 135-149 Shaftesbury Avenue, London, WC2H 8AH (the 'Application Site').

The Proposed Development comprises the part demolition, restoration and refurbishment of the existing Grade II listed building, roof extension, and excavation of basement space, to provide a theatre at lower levels, with ancillary restaurant / bar space (Sui Generis) at ground floor level; and hotel (Class C1) at upper levels; provision of ancillary cycle parking, servicing and rooftop plant, and other associated works (the 'Proposed Development').

The baseline assessment has shown that the Application Site is located within the Camden Air Quality Management Area (AQMA), but not within an Air Quality Focus Area (AQFA). There were no exceedances of the 1-hour mean Air Quality Objective (AQO) for Nitrogen Dioxide (NO_2), or the annual mean AQOs and World Health Organisation (WHO) guidelines for NO_2 or particulate matter (PM_{10} and $PM_{2.5}$) were recorded at automatic monitoring locations in 2022, the most recent year of available representative data. However, two exceedances of the annual mean NO_2 AQO and WHO guideline were recorded at passive diffusion tube monitoring locations in the vicinity of the Application Site in 2022.

The impacts of demolition and construction work on dust soiling and ambient fine particulate matter concentrations have been assessed and appropriate mitigation measures have been identified. Provided these mitigation measures are implemented and included within a dust management plan, for example through a planning condition, the residual impacts are considered to be not significant.

The traffic generated by the Proposed Development was supplied by Momentum Transport, the appointed transport consultant, and has been screened against the criteria set-out in the Environmental Protection United Kingdom (EPUK) and Institute of Air Quality Management (IAQM) planning guidance to determine the need for a detailed assessment. This showed that the potential impact of additional road traffic on local air quality is considered insignificant and a detailed assessment is not required.

The energy strategy for the primary supply to the Proposed Development is all electric utilising Air Source Heat Pumps (ASHPs), a zero emission technology. A diesel generator is also proposed for emergency back-up use only and will be tested for maintenance purposes for fewer than 18 hours per year. As no combustion sources are proposed for the primary energy supply, no local air quality impacts are anticipated and a detailed assessment of impacts of combustion emissions from the energy plant has been screened out of this assessment.

The Proposed Development is considered air quality neutral with regard to building and transport emissions, in line with the London Plan Air Quality Neutral Guidance, and as such no mitigation for either building or transport emissions are required.

A qualitative site suitability assessment shows that pollutant concentrations are in compliance with the relevant Air Quality Objectives (AQOs) and therefore, the Application Site is considered suitable for theatre and hotel use without mitigation.

Based on the assessment results, the Application Site is considered suitable for the Proposed Development without the inclusion of mitigation. Air quality should therefore not be considered as a constraint to the planning consent and the Proposed Development conforms to the principles of the National Planning Policy Framework Plan, the London Plan 2021 policies, the Camden Local Plan.

1. Introduction.

Hoare Lea have been commissioned by YC Saville Theatre Limited to undertake an Air Quality Assessment to support the planning application for the proposed redevelopment of the former Saville Theatre at 135-149 Shaftesbury Avenue, London, WC2H 8AH (the 'Application Site').

1.1 Proposed Development.

The Proposed Development comprises the part demolition, restoration and refurbishment of the existing Grade II listed building, roof extension, and excavation of basement space, to provide a theatre at lower levels, with ancillary restaurant / bar space (Sui Generis) at ground floor level; and hotel (Class C1) at upper levels; provision of ancillary cycle parking, servicing and rooftop plant, and other associated works (the 'Proposed Development').

In summary, the Proposed Development seeks the following:

- Provide up to 10,539 sqm of floorspace.
- Provision of ancillary servicing and plant; and
- Improvements to the sustainability and energy performance of the existing building.

The energy strategy for the primary supply to the Proposed Development is all electric utilising Air Source Heat Pumps (ASHPs), a zero emission technology. A diesel generator is also proposed for emergency back-up use only and will be tested for maintenance purposes for fewer than 18 hours per year. As no combustion sources are proposed for the primary energy supply, no local air quality impacts are anticipated and a detailed assessment of impacts of combustion emissions from the energy plant has been screened out of this assessment.

The proposed ventilation strategy for the Proposed Development will be served by multiple Air Handling Units (AHUs). The AHUs for the theatre will be located in the basement, the AHUs for the hotel communal spaces will be located on each floor, and the AHUs for the hotel rooms will be located on the roof. All intakes and exhausts will be through louvres wrapped around the upper sections of the building.

1.2 Application Site Description and Location.

The Application Site is located within the London Borough of Camden (LBoC) administrative area at the approximate National Grid Reference (NGR): 529980, 181150. The Application Site is an island site, bordered by Shaftesbury Avenue to the south, St Giles Passage to the east, Stacey Street to the west, and New Compton Street to the north. The surrounding buildings primarily comprise commercial and office developments.

The Application Site is currently a cinema.

Figure 1 illustrates the location of the Application Site.

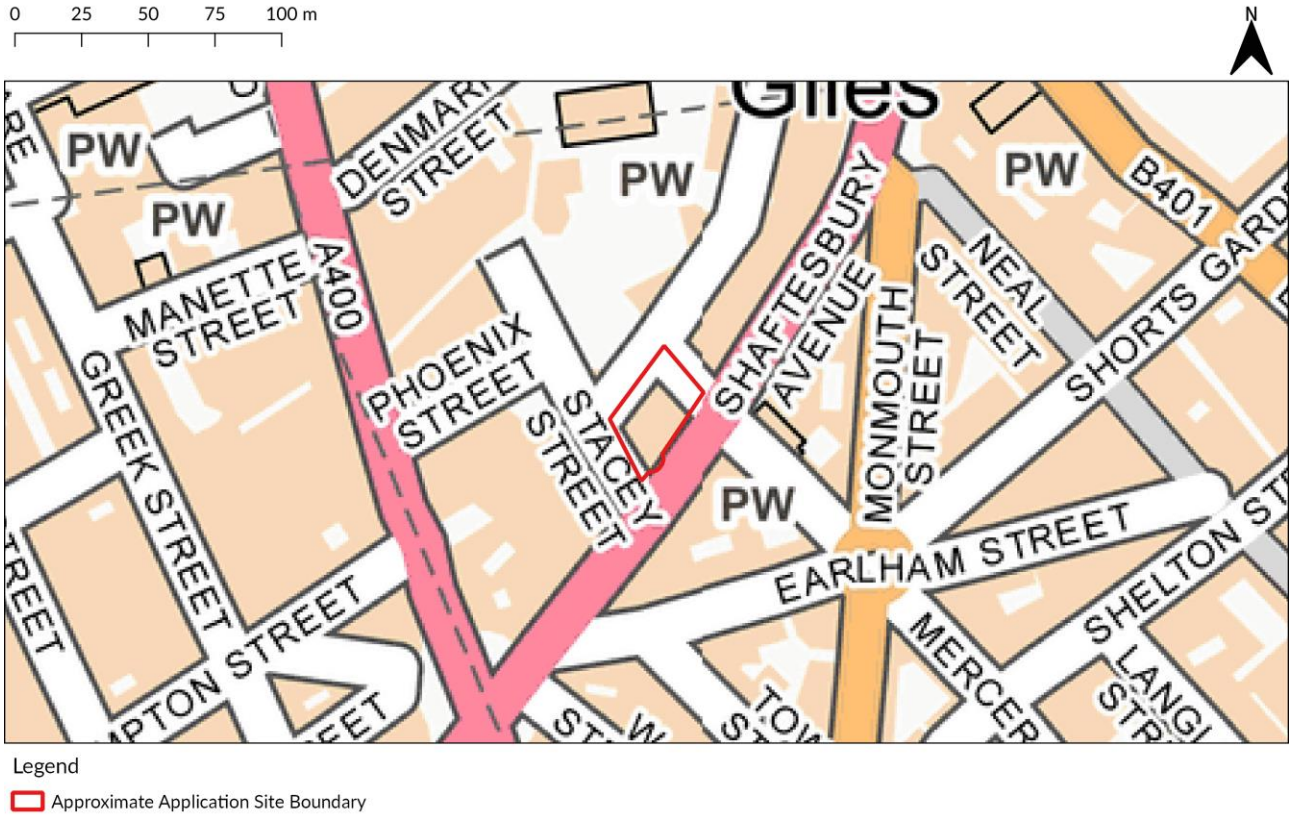


Figure 1: Approximate location of the Application Site. Contains OS Data © Crown Copyright and Database rights 2023.

1.3 Scope of Assessment.

An email detailing the proposed methodology for the Air Quality Assessment was provided to LBoC on the 9th of January 2024. At the time of writing, a response has not yet been received. A copy of the correspondence with LBoC has been included in Appendix 1.

A summary of the scope of the assessment includes:

- Review of National and Local Policy;
- Determination of baseline scenario, using LBoC monitoring data;
- Assessment of potential air quality impacts during the construction phase;
- Assessment of potential air quality impacts during the operational phase;
- Assessment of air quality neutral;
- An assessment of the suitability of the Application Site for its proposed theatre and hotel use; and
- Identification of required mitigation measures.

2. Legislation, Policy and Guidance Documents.

2.1 Air Quality Strategy and Local Air Quality Management.

The Environment Act 1995 (Part IV)[1] requires the Secretary of State to publish an air quality strategy and local authorities to review and assess the quality of air within their boundaries. The latter has become known as Local Air Quality Management (LAQM).

The Air Quality Strategy[2] provides the policy framework for local air quality management and assessment in the UK. It sets out air quality standards and objectives for key air pollutants. These standards and objectives are designed to protect human health and the environment. The Strategy also sets out how the different sectors of industry, transport and local government, can contribute to achieving these Air Quality Objectives (AQOs).

Local authorities are required to identify whether the AQOs have been, or will be, achieved at relevant locations, by the applicable date. If the AQOs are not achieved, the authority must declare an Air Quality Management Area (AQMA) and should prepare an action plan within 12 months. An action plan must identify appropriate measures and policies that can be introduced in order to work towards achieving the AQO(s).

The AQOs set out the extent to which the Government expects the standards to be achieved by a certain date. They take account of economic efficiency, practicability, technical feasibility and timescale. The AQOs for use by local authorities are prescribed within the Air Quality (England) Regulations 2000[3], and the Air Quality (England) (Amendment) Regulations 2002[4].

The AQOs for Nitrogen Dioxide (NO_2) and particulate matter (PM_{10} and $PM_{2.5}$) are set out in Table 1. The AQOs for NO_2, PM_{10} and $PM_{2.5}$ were to have been achieved by 2005, 2004 and 2020 respectively and continue to apply in all future years thereafter.

The Environment Act 2021[5] acts as the UK's new framework of environmental protection and came into force on 1st April 2022. With regard to air quality, the Environment Act establishes a legally binding duty on government to bring forward at least two new air quality targets in secondary legislation. This was implemented through the Environmental Improvement Plan 2023[6] which outlines new $PM_{2.5}$ targets for future years. These are a long term target of 10 µg/m^3 by 2040 and an interim target of 12 µg/m^3 by 31st January 2028. These targets are expected to focus on reducing concentrations of, and exposure to, $PM_{2.5}$.

Additionaly, a new National Air Quality Strategy[7] has been published in April 2023 which sets out a framework which should be followed by local authorities in England in suport of Defra's long term air quality goals, including new $PM_{2.5}$ targets.

Table 1: Air Quality Objectives for NO_2, PM_{10} and $PM_{2.5}$

Pollutant	Time Period	Objective
Nitrogen Dioxide (NO_2)	1-hour Mean	200 µg/m^3 Not to be exceeded more than 18 times a year
	Annual Mean	40 µg/m^3
Fine Particles (PM_{10})	24-hour Mean	50 µg/m^3 Not to be exceeded more than 35 times a year
	Annual Mean	40 µg/m^3
Fine Particles ($PM_{2.5}$) *	Annual Mean	20 µg/m^3
Notes: Measured gravimetrically *The time period in LLAQM.TG(19) states "Work towards reducing emissions/concentrations of fine particulate matter ($PM_{2.5}$)"		

The AQOs apply at locations where members of the public are likely to be regularly present and exposed over the averaging period of the AQO. Examples of where the annual mean AQOs should apply are provided in the London Local Air Quality Management Technical Guidance (LLAQM.TG(19))[8], and include: building façade of residential properties, schools, hospitals. The annual mean AQOs are not relevant for the building façade of offices or other places of work where members of the public do not have regular access, kerbsides or gardens.

The 24-hour AQO for PM_{10} is considered to apply at the same locations as the annual mean AQO, as well as in gardens of residential properties and at hotels.

The 1-hour AQO for NO_2 also applies wherever members of the public might regularly spend 1-hour or more, including outdoor eating locations, pavements of busy shopping streets, carparks and bus stations which are not fully enclosed. The 1-hour AQO does not apply at kerbside sites where the public do not have regular access.

2.2 EU Limit Values.

The European Union has also set limit values for NO_2, PM_{10} and $PM_{2.5}$; these are legally binding and have been implemented into English legislation by The Air Quality Standards Regulations 2010[9] and The Air Quality Standards (Amendment) Regulations 2016[10].

The limit values for NO_2, PM_{10} and $PM_{2.5}$ are the same as the English objectives (given in Table 1), but applied from 2010 for NO_2, 2005 for PM_{10} and 2015 for $PM_{2.5}$. The limit values apply at all locations (apart from where the public does not have access, where health and safety at work provisions apply and on the road carriageway).

2.3 World Health Organisation Guideline values.

The World Health Organisation (WHO) has produced air quality guidelines[11] to offer global guidance on thresholds and limits for key air pollutants that pose health risks. The Greater London Authority (GLA) confirmed that the relevant WHO guidelines referred to in the London Plan are from 2005 and as such these have been provided below in Table 2 for NO_2, PM_{10} and $PM_{2.5}$ concentrations. The WHO published updated air quality guidelines in 2021[12], however these have not been adopted into policy at the current time.

Table 2: WHO guidelines for NO_2, PM_{10} and $PM_{2.5}$

Pollutant	Time Period	Objective
NO_2	1-hour Mean	200 µg/m^3 Not to be exceeded more than 18 times a year
	Annual Mean	40 µg/m^3
PM_{10}	Annual Mean	20 µg/m^3
$PM_{2.5}$ *	Annual Mean	10 µg/m^3

2.4 Statutory Nuisance Legislation.

Part III of the Environmental Protection Act (EPA) 1990 (as amended)[13] contains the main legislation on Statutory Nuisance and allows local authorities and individuals to take action to prevent a statutory nuisance. Section 79 of the EPA defines, amongst other things, smoke, fumes, dust and smells emitted from industrial, trade or business premises so as to be prejudicial to health or a nuisance, as a potential Statutory Nuisance.

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

2.5 Clean Air Strategy.

The Clean Air Strategy (CAS)[14], published in 2019, sets out the Government's proposals aimed at delivering cleaner air in England, and also indicates how devolved administrations intend to make emissions reductions. It sets out the comprehensive action that is required from across all parts of government and society to deliver clean air.

2.6 Building Regulations

The Building Regulations help to ensure that new buildings, conversions, renovations and extensions (domestic or commercial) will be safe, healthy and high performing. Detailed regulations cover specific topics including structural integrity, fire protection, accessibility, energy performance, acoustic performance, protection against falls, electrical and gas safety. Approved Document Part F of the Building Regulations (2021)[15] provides guidance for indoor air quality and the pollutant concentrations that must not be exceeded in both buildings for dwellings and non-dwellings.

2.7 Planning Policy.

2.7.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF) 2023[16] sets out planning policy for England. It includes advice on when air quality should be a material consideration in development control decisions. Relevant sections are set out below:

> Paragraph 8: *"Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives): […]*
>
> *c) an environment objective – to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy. […]"*
>
> Paragraph 55: *"Local planning authorities should consider whether otherwise unacceptable development could be made acceptable through the use of conditions or planning obligations. Planning obligations should only be used where it is not possible to address unacceptable impacts through a planning condition."*
>
> Paragraph 109: "*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."*
>
> Paragraph 180*: "Planning policies and decisions should contribute to and enhance the natural and local environment by: […]*
>
> *e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans. […] "*
>
> Paragraph 191: *"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."*
>
> Paragraph 192: *"Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan."*

Paragraph 194 *"The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively. Equally, where a planning decision has been made on a particular development, the planning issues should not be revisited through the permitting regimes operated by pollution control authorities."*

The NPPF is supported by Planning Practice Guidance (PPG)[17].

The PPG states that:

Paragraph 001 (Reference ID: 32-001-20191101): *"Defra carries out an annual national assessment of air quality using modelling and monitoring to determine compliance relevant Limit Values. It is important that the potential impact of new development on air quality is taken into account in planning where the national assessment indicates that relevant limits have been exceeded or are near the limit or where the need for emissions reductions has been identified."*

Paragraph 002 (Reference ID: 32-002-20191101): *"Plans may need to consider ways in which the development could be made appropriate in locations where air quality is or is likely to be a concern, and not give rise to unacceptable risks from pollution. This could, for example entail identifying measures for offsetting the impact on air quality arising from new development including supporting measures in an air quality action plan or low emissions strategy where applicable".*

Paragraph 005 (Reference ID: 32-005-20191101): *"Whether air quality is relevant to a planning decision will depend on the proposed development and its location. Concerns could arise if the development is likely to have an adverse effect on air quality in areas where it is already known to be poor, particularly if it could affect the implementation of air quality strategies and action plans and / or breach legal obligations (including those relating to the conversation of habitats and species). Air quality may also be a material consideration if the proposed development would be particularly sensitive to poor air quality in its vicinity. "*

The PPG also sets out the information that may be required in an air quality assessment, stating that:

Paragraph 007 (Reference ID: 32-007-20191101): *"Assessments need to be proportional 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. The scope and content of supporting information is best discussed and agreed between the local planning authority and applicant before it is commissioned".*

It also provides guidance on options for mitigating air quality impacts, and makes clear that:

Paragraph 008 (Reference ID: 32-008-20191101): *"Mitigation options will need to be locationally specific, will depend on the proposed development and need to be proportionate to the likely impact."*

2.8 Local Policy.

2.8.1 The London Plan 2021

The London Plan 2021[18] is the Spatial Development Strategy for Greater London. It sets out a framework for how London will develop over the next 20-25 years (covering the period 2019-2041) and the Mayor's vision for Good Growth. The Plan is part of the statutory development plan for London, meaning that the policies in the Plan should inform decisions on planning applications across the capital.

The London Plan 2021 is the third London Plan, the previous ones being the 2004 London Plan and the 2011 London Plan. All of the other iterations of the London Plan from 2004-2016 have been alterations. This London Plan replaces all previous versions.

The following policy relating to air quality is contained within The London Plan 2021[18]: Policy SI 1 'Improving air quality' states:

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

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

1) Development proposals should not:

a) lead to further deterioration of existing poor air quality

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

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

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

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."

The London Plan 2021 provides further information on Policy SI that requires consideration, as detailed below.

Section 9.1.2: *"The Mayor is committed to making air quality in London the best of any major world city, which means not only achieving compliance with legal limits for Nitrogen Dioxide as soon as possible and maintaining compliance where it is already achieved, but also achieving World Health Organisation targets for other pollutants such as Particulate Matter*."

Section 9.1.3: *"The aim of this policy is to ensure that new developments are designed and built, as far as is possible, to improve local air quality and reduce the extent to which the public are exposed to poor air quality. This means that new developments, as a minimum, must not cause new exceedances of legal air quality standards, or delay the date at which compliance will be achieved in areas that are currently in exceedance of legal limits. Where limit values are already met or are*

predicted to be met at the time of completion, new developments must endeavour to maintain the best ambient air quality compatible with sustainable development principles."

Section 9.1.4: "*Where this policy refers to 'existing poor air quality' this should be taken to include areas where legal limits for any pollutant, or World Health Organisation targets for Particulate Matter, are already exceeded and areas where current pollution levels are within 5 per cent of these limits."*

Additionally, Policy GG3 'Creating a healthy city' 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."

2.8.2 The London Environment Strategy

The London Environment Strategy (LES), published in May 2018[19], supersedes the previous Mayor's Air Quality Strategy (MAQS) for London, published in December 2010. The LES aims to reduce pollution concentrations in London to achieve compliance within the EU limit values as soon as possible. The LES commits to the continuation of measures identified in the 2002 and 2010 MAQS and sets out a series of additional measures.

Proposal 4.3.3.a states that the London Strategy provides policies in which all new large-scale developments can not only become 'Air Quality Positive', but also maintain Air Quality Neutral requirements for all other developments. Within the planning guidance for building operations and transport emissions, information about emission benchmarks for 'Air Quality Neutral' developments are set out. Any development that either meets or exceeds the benchmarks is considered air quality neutral as they avoid any increase in PM and NO_X emissions. In order for the benchmarks to remain relevant, the Mayor will continue to review them. To ensure that the requirements are met, execution of the air quality neutral policy will be monitored by utilising both the LLAQM and the London Plan monitoring report.

The following proposed policies relate to the planning process with regards to improving air quality:

Policy 4.2.2: "*Reduce emissions from non-road transport sources, including by phasing out fossil fuels;*"

Policy 4.2.3: "*Reduce emissions from non-transport sources, including by phasing out fossil fuels;*"

Policy 4.2.4: "*The Mayor will work with the government, the London boroughs and other partners to accelerate the achievement of legal limits in Greater London and improve air quality*;"

Policy 4.2.5: "*The Mayor will work with other cities (here and internationally), global city and industry networks to share best practice, lead action and support evidence-based steps to improve air quality*;"

Policy 4.3.1: "*The Mayor will establish new targets for $PM_{2.5}$ and other pollutants where needed. The Mayor will seek to meet these targets as soon as possible, working with government and other partners;*"

Policy 4.3.2: "*The Mayor will encourage the take up of ultra-low and zero emission technologies to make sure London's entire transport system is zero emission by 2050 to further reduce levels of pollution and achieve WHO air quality guidelines*;"

Policy 4.3.3: "*Phase out the use of fossil fuels to heat, cool and maintain London's buildings, homes and urban spaces, and reduce the impact of building emissions on air quality;"*

Policy 4.3.4: "*Work to reduce exposure to indoor air pollutants in the home, schools, workplace and other enclosed spaces*."

Furthermore, the LES outlines that negative consequences that can occur from developing air quality and climate policies in isolation, particularly with regards to energy and planning policy. Instead, integrated policy design can lead to benefits such as reducing carbon emissions by switching to zero emission vehicles simultaneously.

The LES also includes the focus on the 187 Air Quality Focus Areas (AQFA) declared by the GLA. Focus Areas are defined to address concerns raised by boroughs within the LAQM review process and forecasted air pollution trends. These are locations that not only exceed the EU annual mean limit value for NO_2 but are also locations with high human exposure. This is not an exhaustive list of London's hotspot locations, but where the GLA believe the problem to be most acute.

2.8.3 Camden Local Plan

The Camden Local Plan was published by LBoC in 2017[20]. It sets out the Council's planning policies and priorities, replacing the previous Core Strategy and Development Policies planning documents. The policies relevant to air quality are set out below:

> *"Policy CC4 Air Quality*
>
> *The Council will ensure that the impact of development on air quality is mitigated and ensure that exposure to poor air quality is reduced in the borough.*
>
> *The Council will take into account the impact of air quality when assessing development proposals, through the consideration of both the exposure of occupants to air pollution and the effect of the development on air quality. Consideration must be taken to the actions identified in the Council's Air Quality Action Plan.*
>
> *Air Quality Assessments (AQAs) are required where development is likely to expose residents to high levels of air pollution. Where the AQA shows that a development would cause harm to air quality, the Council will not grant planning permission unless measures are adopted to mitigate the impact. Similarly, developments that introduce sensitive receptors (i.e. housing, schools) in locations of poor air quality will not be acceptable unless designed to mitigate the impact.*
>
> *Development that involves significant demolition, construction or earthworks will also be required to assess the risk of dust and emissions impacts in an AQA and include appropriate mitigation measures to be secured in a Construction Management Plan."*

2.9 Assessment Guidance and Standards.

The primary guidance documents consulted in undertaking this assessment are detailed below.

2.9.1 Mayor of London, London Local Air Quality Management Technical Guidance

The Mayor of London's LLAQM.TG(19) was published for use by local authorities in their LAQM review and assessment work. The document provides key guidance in aspects or air quality assessment, including screening, use of monitoring data and use of background data that are applicable to all air quality assessments.

2.9.2 EPUK and IAQM 'Air Quality Guidance for Planning'

Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM) have together published guidance (EPUK and IAQM planning guidance)[21] to help ensure that air quality is properly accounted for in the development control process. It clarifies when an air quality assessment should be undertaken, what it should contain, and how impacts should be described and assessed including guidelines for assessing the significance of impacts.

2.9.3 IAQM 'Construction and Demolition Dust Guidance'

Guidance on the assessment of dust from demolition and construction has been published by the IAQM (referred to as the IAQM construction guidance throughout this report)[22]. The guidance provides a methodology to determine the dust emission magnitude and provides a series of matrices to determine the risk magnitude of potential dust sources associated with construction activities. This allows for the identification of appropriate mitigation measures that are defined further within the IAQM construction guidance.

2.9.4 GLA 'Construction and Demolition Dust Guidance'

Guidance on the assessment of dust from demolition and construction has been published by the GLA (referred to as the GLA construction guidance throughout this report)[23]. The guidance is based on the site evaluation process outlined in the IAQM construction guidance.

2.9.5 Sustainable Design and Construction Supplementary Planning Guidance

The GLA published supplementary planning guidance (SPG) on sustainable design and construction in April 2014[24], in order to improve the environmental performance of new developments.

2.9.6 Air Quality Neutral London Plan Guidance

The Air Quality Neutral London Plan Guidance (AQN LPG)[25] was adopted in February 2023. This document sets out the benchmarks for transport and building emissions from new developments. These are based on research and evidence carried out by building and transport consultants. This ensures that new developments do not worsen air quality throughout London.

2.9.7 Camden Planning Guidance – Air Quality

LBoC published an Air Quality SPD in 2021[26] to accompany the Camden Local Plan. It sets out specific measures relevant to the Camden AQMA and what must be covered in the scope of an Air Quality Assessment. This SPD has been considered in regard to the methodology of this assessment and appropriate mitigation measures have been recommended based on the local conditions.

3. Methodology of Assessment.

3.1 Consultation.

The approach to the assessment, as described in section 1.3, was provided to the LBoC for review on the 9th of January 2024. At the time of writing, a response has not yet been received.

3.2 Existing Air Quality in the Study Area.

A baseline air quality review was undertaken to determine the existing air quality in the vicinity of the Application Site.

This desk-top study was undertaken using the following sources:

- Air quality data for LBoC, including a review of the LBoC air quality reports and local monitoring data;
- The UK Pollutant Release and Transfer Register[27];
- Background pollution maps from Defra's Local Air Quality Management (LAQM) website[28];
- London Atmospheric Emissions Inventory (LAEI) modelled annual mean concentrations from the GLA
- Pollution Inventory from the Environment Agency[29]
- The UK Ambient Air Quality Interactive Map[30];
- Ordnance Survey data and Aerial photography from Google Maps.

3.3 Construction Phase Impacts.

3.3.1 Construction Dust Assessment

The assessment of construction dust impacts has been undertaken in line with the methodology outlined in the GLA construction guidance. Activities on the proposed construction site have been divided into three types to reflect their different potential impacts. These are:

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

The risk of dust emissions was assessed for each activity with respect to:

- Potential loss of amenity due to dust soiling;
- The risk of health effects due to a significant increase in exposure to PM_{10}; and
- The risk of ecological impacts due to a significant increase in exposure to dust.

The first stage of the assessment involves screening to determine whether there are any sensitive receptors within the threshold distances defined by the GLA construction guidance. A detailed assessment of the impact of dust from construction sites will be required where:

- A 'human receptor' is located within 350 m of the boundary of the Application Site or within 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the Application Site entrance;
- An 'ecological receptor' is located within 50 m of the boundary of the Application Site or within 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the Application Site entrance.

The magnitude of dust emission for each activity is determined on the basis of the guidance, indicative thresholds, information available relating to the project and expert judgement. The risk of dust effects arising is based upon the relationship between the dust emission magnitude and the sensitivity of the area. The risk of impact is then used to determine the mitigation requirements.

Descriptors for magnitude of impact and impact significance used in this assessment of construction phase dust are given in the GLA construction guidance available online.

3.3.2 Construction Traffic

3.3.2.1 Construction Traffic Emissions Screening

The screening assessment has been undertaken with reference to the following EPUK and IAQM planning guidance indicative criteria:

- a change of Light Duty Vehicle (LDV) flows of more than 100 AADT (within an AQMA); and/or
- a change of Heavy Duty Vehicle (HDV) flows of more than 25 AADT (within an AQMA).

3.3.2.2 NRMM Emissions Screening

Non-Road Mobile Machinery (NRMM) refers to mobile machines, transportable industrial equipment or vehicles which are fitted with an internal combustion engine and not intended for transporting goods or passengers on roads. NRMM emissions have been screened following IAQM construction guidance[22].

3.4 Operational Phase Impacts.

3.4.1 Road Traffic Impacts

The screening assessment has been undertaken following the EPUK and IAQM planning guidance indicative criteria, i.e.:

- a change of LDV flows of more than 100 AADT (within an AQMA); and/or
- a change of HDV flows of more than 25 AADT (within an AQMA).

Where these criteria are exceeded, a detailed assessment is required, although the guidance advises that "*the criteria provided are precautionary and should be treated as indicative*", and "*it may be appropriate to amend them on the basis of professional judgement*".

Where impacts can be screened out there is no need to progress to a more detailed assessment.

3.4.2 Site Suitability Assessment

An assessment has been undertaken to consider the Site Suitability which refers to the exposure of future occupants of the Proposed Development to existing air quality.

The assessment of Site Suitability will be assessed qualitatively using monitoring data and LAEI modelled concentrations.

3.4.3 Air Quality Neutral Assessment

To enable the implementation of the air quality neutral policy of the London Plan, emissions benchmarks have been developed for buildings and transport, the latter of which are dependent on the zone in London where the Proposed Development is located. Developers are required to calculate emissions due to buildings operations and transport, and to compare these emissions to the benchmarks set out in the AQN LPG.

Where the Proposed Development's emissions exceed the benchmarks, on-site mitigation is required. Where emissions continue to exceed the benchmarks after appropriate on-site mitigation, the excess emissions need to be off-set through agreement with the local planning authority.

3.5 Assessment of Significance.

3.5.1 Construction Dust

The GLA construction guidance on the assessment of dust from demolition and construction states that the primary aim of the risk assessment is to identify site specific mitigation that, once implemented, should ensure that there will be no significant effect. Therefore, the assessment has been used to determine an appropriate level of mitigation for the construction phase.

The determination of which mitigation measures are recommended include elements of professional judgement and the professional experience of the consultants preparing this report is set out in Appendix 2.

3.5.2 Operational Impacts

The EPUK and IAQM planning guidance has been used to assess the potential for significant impacts as a result of vehicle emissions from traffic associated with the Proposed Development. The focus of the guidance is to assess traffic emission impacts and advises on how to describe the air quality impacts and their significance.

3.5.3 Site Suitability Assessment

To determine the significance of predicted air quality impacts based upon a Site Suitability Assessment, the EPUK and IAQM planning guidance states:

> *"Where the air quality is such that an air quality objective at the building façade is not met, the effect on residents or occupants will be judged as significant, unless provision is made to reduce their exposure by some means."*

Only the short term AQOs apply for theatre and hotel use. However, the long-term NO_2 AQO has also been considered for the Proposed Development in order to predict compliance with Approved Document Part F of the Buildings Regulations (2021).

Additionally, as stated in the London Plan 2021:

> *"The Mayor is committed to making air quality in London the best of any major world city, which means not only achieving compliance with legal limits for Nitrogen Dioxide as soon as possible and maintaining compliance where it is already achieved, but also achieving World Health Organisation targets for other pollutants such as Particulate Matter".*

As such, pollutants will also be assessed against WHO guidelines when determining the suitability of the Application Site for its proposed use.

It should be noted that, based on recent advice from the GLA, mitigation measures against particulate matter concentrations are not recommended for the sole purpose of meeting the WHO guidelines. This is due to the energy penalties associated with the installation, operation, and maintenance of this filtration which, in the absence of any other objectives exceedances, is not considered to be appropriate. Particulate matter concentrations exceed WHO guidelines across London and regional measures to reduce concentrations (being principally delivered by the GLA) are considered more appropriate than mitigation at individual developments.

4. Baseline Environment.

This section sets out the available information on air quality in the vicinity of the Application Site.

4.1 Local Air Quality Management Review and Assessment.

The most recent Air Quality Annual Status Report (ASR) published by LBoC for 2022[31] states that the primary source of emissions in the area can be attributed to road traffic. There is a borough wide AQMA for LBoC declared due to exceedances of the annual mean NO_2 AQO and the 24-hour mean PM_{10} AQO. As such, LBoC have subsequently published the Camden Clean Air Strategy 2019-2034[32] and the Camden Clean Air Action Plan 2023-2026[33]. These documents set out the Council's approach for improving air quality and protecting health from exposure to air pollution in Camden.

It should be noted that the pollutant concentrations recorded in 2020 and 2021 from the most recent ASR for 2022 are lower than previous years as a direct result of reduced traffic levels during the COVID-19 pandemic. As such the pollutant concentrations recorded in 2020 and 2021 are not considered to be representative of 'normal' air quality conditions. However, 2022 data is considered a return to normal operation and been used as the latest year of available representative monitoring data.

4.2 Local Air Quality Monitoring.

LBoC operate five automatic monitoring stations, with the closest site being BL0, located approximately 850 m north of the Application Site. As the Application Site is also close to the border of Westminster City Council (WCC), monitoring data from their most recent ASR (2022)[34] has been included within this section.

Recent monitoring data for the automatic monitoring stations within a 1 km vicinity of the Application Site are detailed in Table 3 and a visual representation of the locations of the automatic monitoring stations is shown in Figure 2.

Table 3: Automatic Monitoring Locations

Monitoring site and distance (m) from Application Site boundary	Objective	2016	2017	2018	2019	2020	2021	2022
NO_2								
Oxford Street East (WCC) – 500 m from Application Site	Annual mean (µg/m^3)	n/d	n/d	**76**	**51**	35	34	37
	Number of hours with concentrations >200 µg/m^3	n/d	n/d	11	5	0	0	1
Covent Garden (WCC) – 510 m from Application Site	Annual mean (µg/m^3)	n/d	37	39	39	21	24	24
	Number of hours with concentrations >200 µg/m^3	n/d	0	0	0	0	0	0
Strand (WCC) – 825 m from Application Site	Annual mean (µg/m^3)	**101**	**92**	**88**	**76**	**44**	**43**	35
	Number of hours with concentrations >200 µg/m^3	**245**	26	34	21	0	3	0
	Annual mean (µg/m^3)	**42**	38	36	32	28	27	26

Monitoring site and distance (m) from Application Site boundary	Objective	2016	2017	2018	2019	2020	2021	2022
NO_2								
BL0 (LBoC) – 850 m from Application Site	Number of hours with concentrations >200 µg/m^3	0	0	0	0	0	0	0
PM_{10}								
Oxford Street East (WCC) – 500 m from Application Site	Annual mean (µg/m^3)	n/d	n/d	28	24	22	22	23
	Number of days with concentrations > 50 µg/m^3	n/d	n/d	1	0	6	5	6
BL0 (LBoC) – 850 m from Application Site	Annual mean (µg/m^3)	20	19	17	18	16	16	17
	Number of days with concentrations > 50 µg/m^3	9	6	1	9	4	0	5
$PM_{2.5}$								
BL0 (LBoC) – 850 m from Application Site	Annual mean (µg/m^3)	12	13	10	11	9	9	9

Notes:
Concentrations in **bold** indicate an exceedance of the relevant AQO
Exceedance of the NO_2 short term AQO of 200 µg/m^3 over the permitted 18 hours per year are shown in **bold** and underlined.
n/d = no data

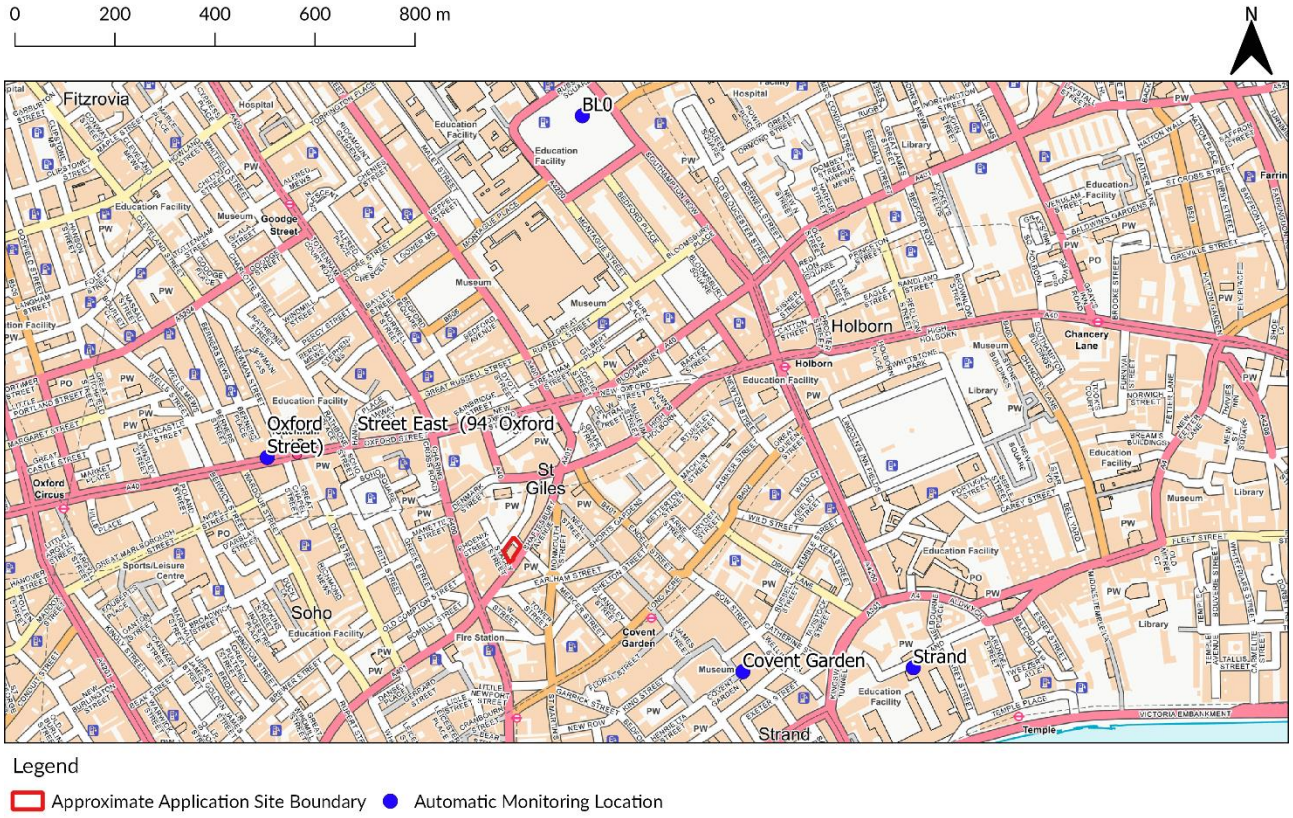


Figure 2: Automatic Monitoring Locations within the vicinity of the Application Site. Contains OS Data © Crown Copyright and Database rights 2023.

The monitoring results indicate that there have been no exceedances of the annual mean NO_2, PM_{10} or $PM_{2.5}$ AQOs or WHO guidelines, in addition to the 1-hour mean NO_2 AQO and the 24-hour mean PM_{10} AQO in 2022. In the past five years of representative monitoring data, there have been several exceedances of the annual mean and 1-hour mean NO_2 AQOs at Oxford Street East, Strand and BL0. However, these have all reduced each year to below the AQO. Additionally, the $PM_{2.5}$ WHO guideline was exceeded at BL0 from 2016-2019, although it was compliant in 2022.

LBoC currently operate 309 passive diffusion tubes to monitor NO_2 concentrations. Within a 150 m of the Application Site, there are 15 passive diffusion tube monitoring locations. Recent monitoring results are shown in Table 4 and the passive diffusion tube monitoring locations are illustrated in Figure 3.

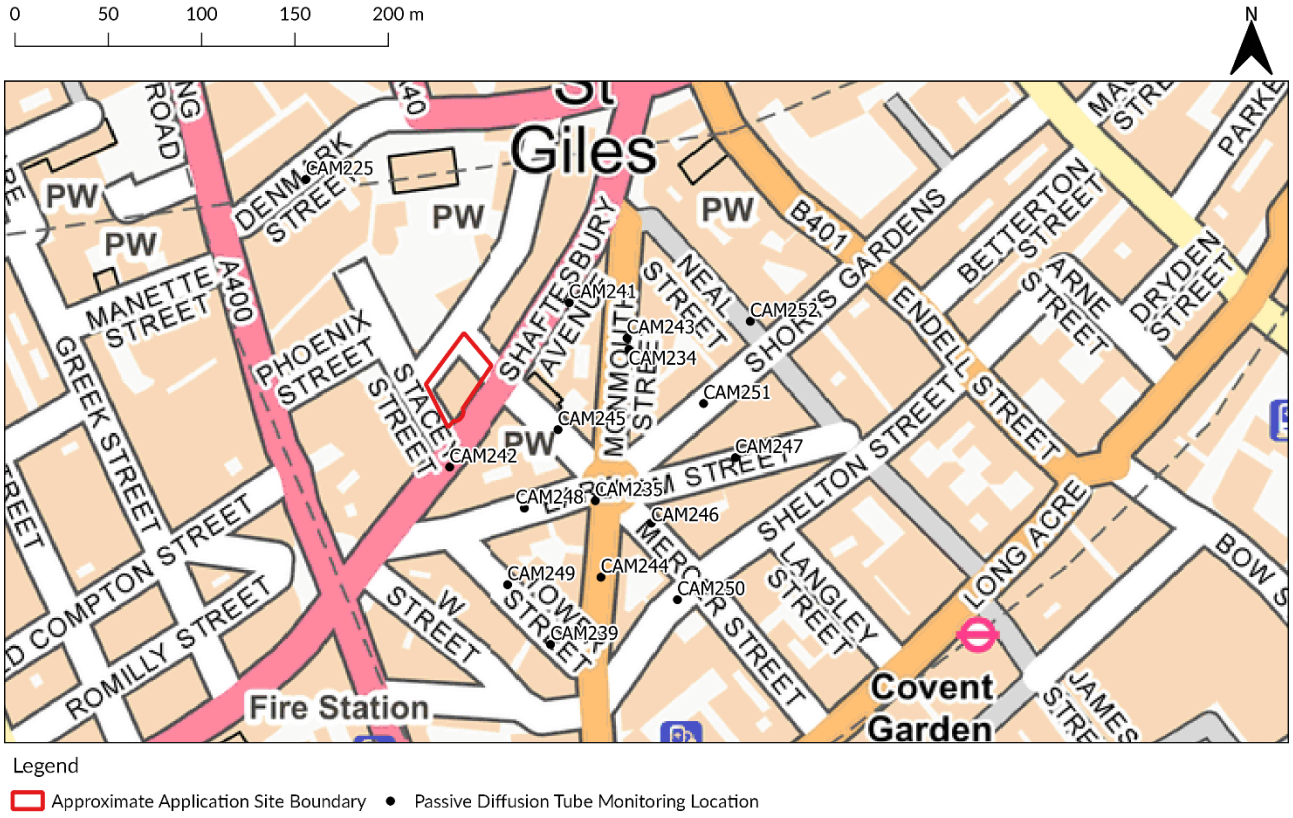
Of the 15 passive diffusion tube monitors in this vicinity of the Application Site, 12 were established in 2020 or 2021, which are not considered to be representative years of normal conditions. Furthermore, the earliest of the 15 diffusion tubes began in 2018, as such data is presented from 2018 to 2022.

Table 4: Passive Diffusion Tube Monitoring Results

Site ID	Site Type	Site Name	Distance (m) from Application Site	Annual Mean NO_2 Concentration (µg/m³)				
				2018	2019	2020	2021	2022
CAM242	Roadside	Shaftesbury 2 – Mercer Street South	21	-	-	32	28	28
CAM245	Roadside	Shaftesbury 5 – Earlham Street West	49	-	-	36	30	31
CAM241	Roadside	Shaftesbury 1 – Shelton Street	53	-	-	34	33	31

Site ID	Site Type	Site Name	Distance (m) from Application Site	Annual Mean NO_2 Concentration (µg/m^3)				
				2018	2019	2020	2021	2022
CAM248	Roadside	Shaftesbury 8 – Shaftesbury Avenue North	59	-	-	**44**	38	**43**
CAM243	Roadside	Shaftesbury 3 – Monmouth Street South	74	-	-	30	27	27
CAM234	Roadside	WEP* 19 – Monmouth Street (25)	74	-	**46**	28	25	-
CAM235	Roadside	WEP* 20 – Monmouth Street (30)	84	-	**45**	30	30	-
CAM249	Roadside	Shaftesbury 9 – Monmouth Street North	90	-	-	29	27	28
CAM244	Roadside	Shaftesbury 4 – Tower Street	113	-	-	31	25	27
CAM251	Roadside	Shaftesbury 11 – Shorts Gardens	115	-	-	29	24	27
CAM246	Roadside	Shaftesbury 6 – Shaftesbury Avenue South	116	-	-	**46**	38	**44**
CAM225	Roadside	WEP* 10 – Denmark Street (5)	117	**72**	**67**	**45**	31	-
CAM239	Roadside	WEP* 24 – Tower Street	128	-	-	-	26	-
CAM247	Roadside	Shaftesbury 7 – Mercer Street North	139	-	-	31	26	27
CAM252	Roadside	Shaftesbury 12 – Earlham Street East	140	-	-	28	25	26
CAM250	Roadside	Shaftesbury 10 – Neal Street	150	-	-	27	24	26

Notes:
Concentrations in **bold** indicate an exceedance of the relevant AQO.
Exceedance of the NO_2 short term AQO of 200 µg/m^3 over the permitted 18 hours per year are shown in **bold** and underlined
* WEP = West End Project.



Legend

Approximate Application Site Boundary ● Passive Diffusion Tube Monitoring Location

Figure 3: Passive Diffusion Tube Monitoring Locations within the vicinity of the Application Site. Contains OS Data © Crown Copyright and Database rights 2023.

As shown in Table 4, there were two exceedances of the annual mean NO_2 AQO and WHO guideline in 2022, at CAM248 and CAM246, these diffusion tubes are located within Seven Dials. However, the closest passive diffusion tube monitoring location CAM242, which is located opposite the Application Site on Shaftesbury Avenue, recorded no exceedances of the annual mean NO_2 AQO or WHO guideline in 2022.

Additionally, as outlined in LLAQM.TG(19), an annual mean concentration of 60 µg/m^3 or above is often used to indicate a possible exceedance of the 1-hour mean NO_2 AQO. This has only occurred at CAM225, located on Denmark Street, in 2018 and 2019. No exceedances of 60 µg/m^3 were recorded within 150 m of the Application Site in 2022.

4.3 Industrial Pollution.

A desk-based review of potential industrial sources using the UK Pollutant Release and Transfer Register and the Pollution Inventory from the Environment Agency did not identify any significant industrial or waste management sources of air pollution within 2 km of the Application Site that are likely to affect the Application Site with regard to air quality.

4.4 Defra Predicted Concentrations.

The background concentrations have been obtained from the national maps published by Defra. These estimated concentrations are produced on a 1 km by 1 km grid basis for the whole of the UK. The Application Site falls into grid square X 529500 Y 181500 and the predicted concentrations for this grid square for NO_2, PM_{10} and $PM_{2.5}$ are provided in Table 5 for 2022, the most recent year with available monitoring data and for 2028, the earliest anticipated opening year for the Proposed Development.

Table 5: Predicted Background Concentrations for grid square X 529500 Y 181500.

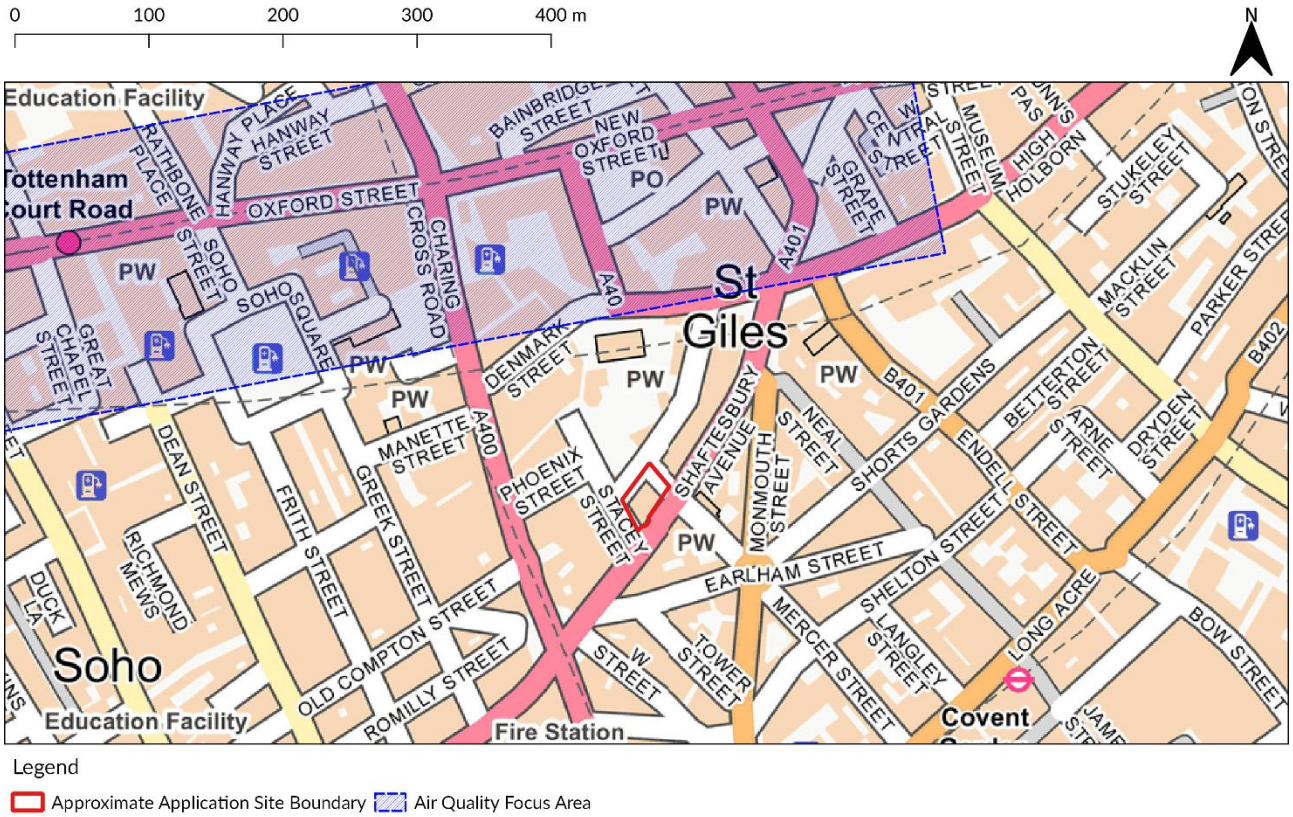
Year	Predicted Background Concentration (µg/m³)		
	NO_2	PM_{10}	$PM_{2.5}$
2022	37.4	19.0	12.4
2028	34.6	18.4	11.9

As shown in Table 5, background concentrations are below the relevant AQOs for all pollutants. However $PM_{2.5}$ is in exceedance of the WHO guideline in both 2022 and 2028.

4.5 Greater London Authority

4.5.1 Air Quality Focus Areas

Air Quality Focus Areas (AQFAs)[35] are locations that not only exceed the annual mean limit value for NO_2 but are also locations with high human exposure. As shown in Figure 4, the Application Site is located approximately 110 m south of the 'Oxford Street from Marble Arch to Bloomsbury' AQFA.



Legend

Approximate Application Site Boundary Air Quality Focus Area

Figure 4: Air Quality Focus Areas in the vicinity of the Application Site. Contains OS Data © Crown Copyright and Database rights 2023.

4.5.2 LAEI pollution Maps

The GLA produce LAEI annual mean concentration maps for the whole of London on a 20m by 20m grid for a future year 2025[36]. Figure 5, Figure 6 and Figure 7 illustrate the annual mean NO_2, PM_{10} and $PM_{2.5}$ concentrations in the immediate area of the Application site for 2025 respectively.

It should be noted that as the resolution of the LAEI modelled concentration maps is 20 m, it is likely that the concentrations of the worst case grid square within the Application Site are more representative of air quality conditions in the centre of the road, rather than the building facade. As such, LAEI modelled concentrations may be considered less representative of air quality concentrations at the Application Site compared to nearby roadside monitoring locations set back a similar distance from Shaftesbury Avenue.

Figure 5: Modelled 2025 annual mean concentrations of NO_2 (GLA, 2023). Contains OS Data © Crown Copyright and Database rights 2023.

Figure 6: Modelled 2025 annual mean concentrations of PM_{10} (GLA, 2023). Contains OS Data © Crown Copyright and Database rights 2023.

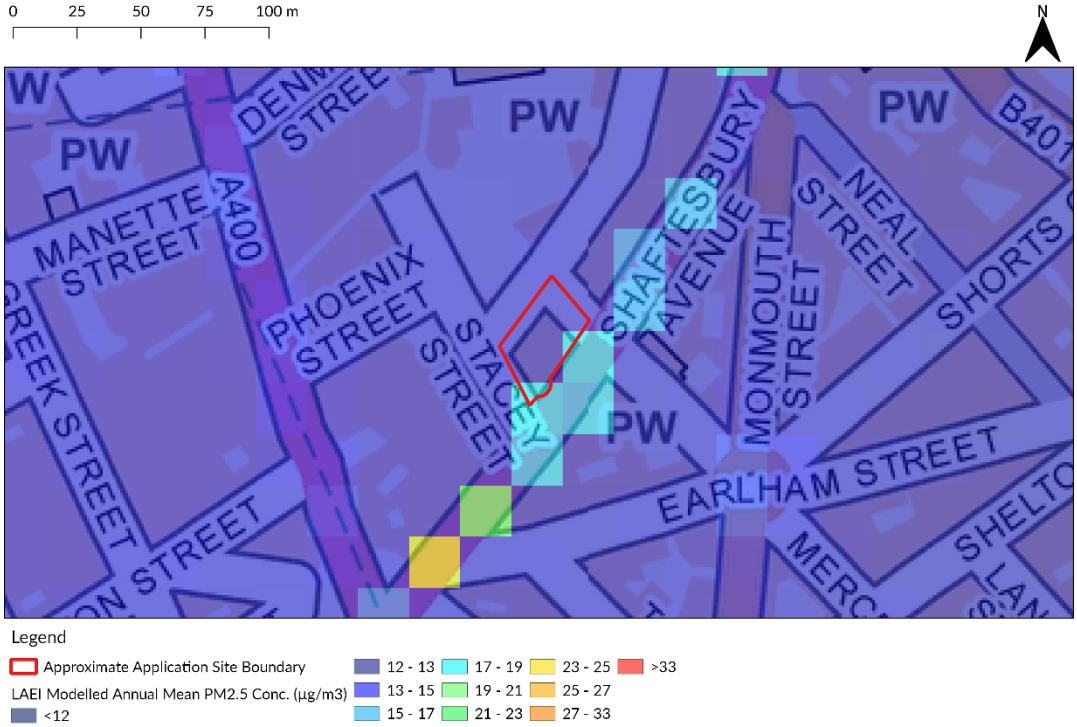


Figure 7: Modelled 2025 annual mean concentrations of $PM_{2.5}$ (GLA, 2023). Contains OS Data © Crown Copyright and Database rights. Contains OS Data © Crown Copyright and Database rights 2023.

The worst-case concentrations of key pollutants in 2025 are shown in Table 6 for the Application Site. These concentrations have been taken from the south façade of the Application Site which bounds Shaftesbury Avenue.

Table 6: Annual mean concentrations of NO_2, PM_{10} and $PM_{2.5}$ taken from the LAEI annual mean concentration maps.

Year	Pollutant Concentration (µg/m^3)		
	NO_2	PM_{10}	$PM_{2.5}$
2025	50.2	31.3	16.7

As illustrated in Figure 5, Figure 6 and Figure 7, LAEI mapping shows that the main source of pollution in the vicinity of the Application Site is the local road network. Predicted concentration of NO_2 for 2025 at the south façade of the Application Site are above the respective annual mean AQO and WHO guideline. The predicted concentrations of PM_{10} and $PM_{2.5}$ are below their respective annual mean AQOs. However, they are both in exceedance of the WHO guidelines.

4.6 Summary of Background Data.

The baseline assessment has shown that the Application Site is located within the Camden AQMA, but not within an AQFA.

There were no exceedances of the 1-hour mean AQO for NO_2, or the annual mean AQOs and WHO guidelines for NO_2, PM_{10} or $PM_{2.5}$ were recorded at automatic monitoring locations in 2022. However, two exceedances of the annual mean NO_2 AQO and WHO guideline were recorded at passive diffusion tube monitoring locations in the vicinity of the Application Site in 2022.

Defra predicted background concentrations show no exceedances of the relevant AQOs, however it does show exceedances of the annual mean $PM_{2.5}$ WHO guideline in both 2022 and 2028.

LAEI modelled concentrations showed that the worst case NO_2 concentrations within the Application Site exceed the annual mean AQO and WHO guideline. The predicted concentrations of PM_{10} and $PM_{2.5}$ are below their respective annual mean AQOs. However, they are both in exceedance of the WHO guidelines.

There are no sources of industrial emissions that are likely to affect the Application Site with regard to air quality.

5. Construction Phase Assessment.

The potential for air quality impacts during the construction of the Proposed Development are assessed in this section.

5.1 Construction Phase Dust Assessment.

The risk of dust impacts is based on the potential dust emissions magnitude and the sensitivity of the area. These two factors are then combined to determine the risk of dust impacts with no mitigation applied. In the absence of any site-specific information, a higher risk category has been applied to represent a worst-case scenario.

5.1.1 Assessment Screening

There are 'human receptors' within 350 m of the Application Site but no designated habitat sites within 50 m of the Application Site boundary or within 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the Application Site entrance.

The closest ecological receptor to the Application Site is Camley Street Nature Park, classified as Local Nature Reserve, located 2 km to the north. Therefore, an assessment of construction dust at human receptors is required, but an assessment of construction at ecological receptors can be screened out from this assessment.

5.1.2 Potential Dust Emission Magnitude

The potential magnitude of dust emissions from demolition, earthworks, construction and trackout have been assessed, as identified in Table 7.

Table 7: Predicted Magnitude of Dust Emissions

Activity	Magnitude	Justification
Demolition	Small	It is understood that the Proposed Development will include the retention of the majority of the existing building structure. Demolition will consist of the top level to allow access for the extension, along with internal structures for redevelopment. As such, the estimated volume of the demolition is anticipated to be less than 20,000 m^3. As such, in line with GLA guidance, the magnitude of dust emissions from demolition is anticipated to be small.
Earthworks	Small	The Proposed Development will involve the extension of the existing basement by an additional two floors. This is anticipated to require less than 2,500 m^2 of earthworks within loamy soil[37]. As such, in line with the GLA guidance, the magnitude of dust emissions from earthworks is expected to be small.
Construction	Medium	The total construction volume is estimated to be between 20,000 and 50,000 m^3. This will involve potentially dust materials such as concrete. In line with the GLA guidance, the magnitude of dust emissions from construction is anticipated to be medium.
Trackout	Small	Traffic movements during the construction phase for the Proposed Development have not yet been calculated. Due to the scale of the Proposed Development, it is estimated to be less than 10 HDV AADT. As the existing building on-site will be retained, there will be no unpaved road length. As such, in line with the GLA guidance, the magnitude of dust emissions from trackout is anticipated to be small.

5.1.3 Sensitivity of the Study Area

The sensitivity of the area takes into account the following factors:

– The specific sensitivities of receptors in the area;
– The proximity and number of those receptors;
– In the case of PM_{10}, the local background concentration; and

– Site-specific factors, such as whether there are natural shelters, such as trees or other vegetation, to reduce the risk of wind-blown dust.

Figure 8 illustrates the distance band criteria (sensitivity buffers) from the Application Site boundary.

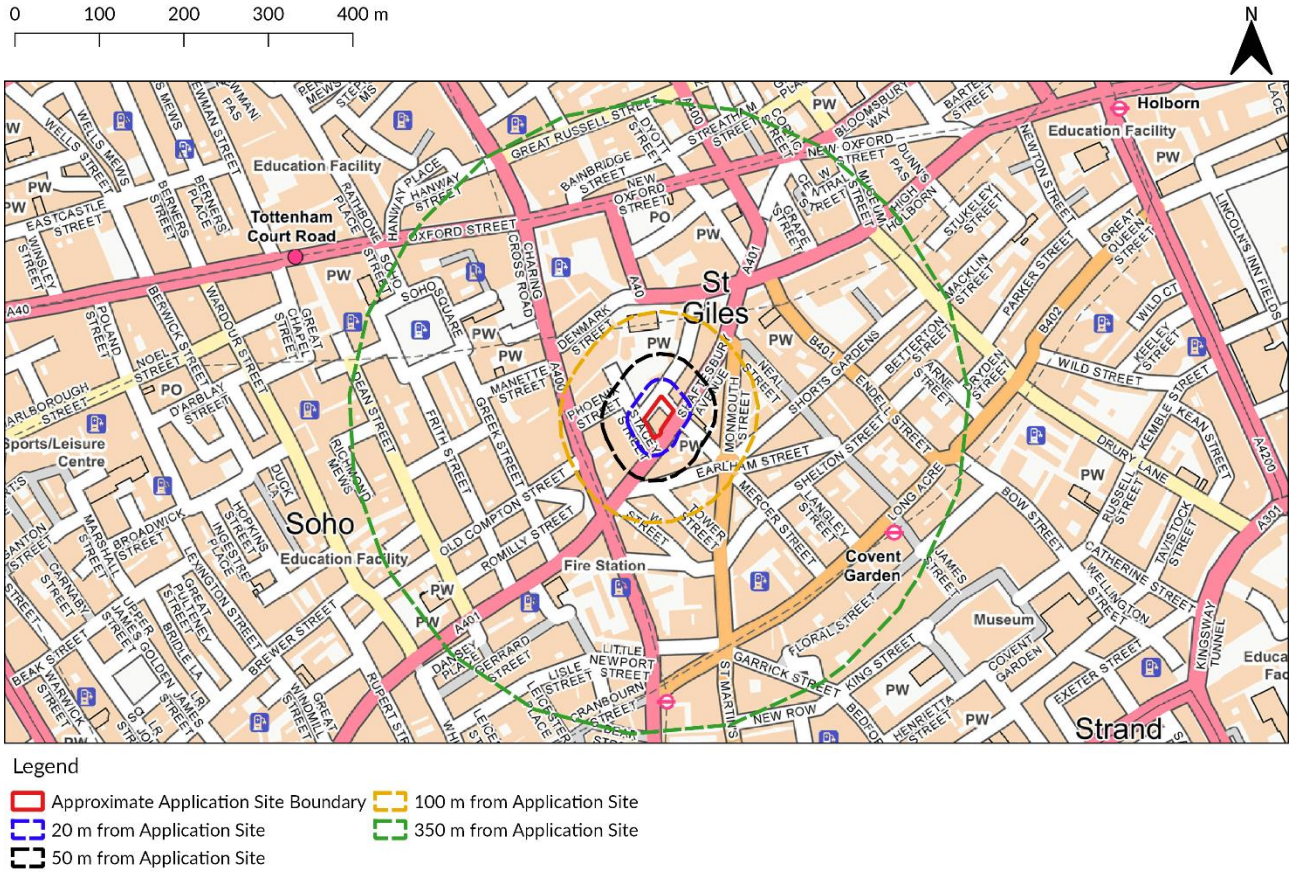


Figure 8: Demolition and Construction Dust Distance band criteria from the Application Site boundary. Contains Ordnance Survey Data © Crown Copyright 2023.

The sensitivity of the area and the factors considered are detailed in Table 8.

Table 8: Sensitivity of the Area

Sensitivity Type	Factors	Sensitivity of Area	
		On – Site Activity	Trackout
Dust Soiling	Within 20 m of the Application Site, there are 10-100 commercial receptors. Within 50 m of the Application Site, there are approximately 10-100 residential receptors which would be considered high sensitivity receptors, along with a further 10-100 commercial receptors. Within 350 m of the Application Site, there are 100+ residential and commercial receptors. Overall, in line with the GLA guidance, the area has a medium sensitivity to dust soiling from on-site activity.	Medium	Medium.

Sensitivity Type	Factors	Sensitivity of Area	
		On – Site Activity	Trackout
	For trackout, distances are measured from the sides of the roads used by construction traffic. As the dust emissions from trackout are anticipated to be small, receptors have been considered along roads up to 50 m from the entrance to the Application Site. Within 20 m of these roads, there are approximately 10-100 residential receptors which would be considered high sensitivity receptors, along with 10-100 commercial receptors. Within 50 m of these roads, there are 100+ residential and commercial receptors. Overall, in line with the GLA guidance, the area has a medium sensitivity to dust soiling from trackout.		
Human Health	The Defra predicted PM_{10} concentration for the grid square containing the Application Site was 19.0 µg/m^3 in 2022. Within 20 m of the Application Site, there are 10-100 commercial receptors. Within 50 m of the Application Site, there are approximately 10-100 residential receptors which would be considered high sensitivity receptors, along with a further 10-100 commercial receptors. Within 350 m of the Application Site, there are 100+ residential and commercial receptors. Overall, in line with the GLA guidance, the area has a low sensitivity to the human health effects of PM_{10} from on-site activity. For trackout, distances are measured from the sides of the roads used by construction traffic. As the dust emissions from trackout are anticipated to be small, receptors have been considered along roads up to 50 m from the entrance to the Application Site. Within 20 m of these roads, there are approximately 10-100 residential receptors which would be considered high sensitivity receptors, along with 10-100 commercial receptors. Within 50 m of these roads, there are 100+ residential and commercial receptors. Overall, in line with the GLA guidance, the area has a low sensitivity to the human health effects of PM_{10} from trackout.	Low	Low

5.1.4 Risk of Dust Impacts

The outcomes of the assessments of potential magnitude of dust emissions and the sensitivity of the area are combined to determine the risk of impact. This risk is then used to inform the selection of appropriate mitigation. Table 9 details the risk of dust impacts for demolition, earthworks, construction and trackout activities.

Table 9: Summary of Potential Unmitigated Dust Risks

Potential Impact	Sensitivity		Demolition	Earthworks	Construction	Trackout
	On-site	Trackout				
Magnitude			Small	Small	Medium	Small
Dust Soiling Impacts	Medium	Medium	Low Risk	Low Risk	Medium Risk	Negligible
Human Health Impacts	Low	Low	Negligible	Negligible	Low Risk	Negligible

5.2 Construction Phase – Vehicular Pollutants.

The Application Site is located within the Camden AQMA and therefore the lower screening criteria (i.e. 100 LDV and 25 HDV) applies.

Information on traffic movements anticipated during construction works was unavailable for the completion of the Air Quality Assessment. However, the development quantum is not anticipated to result in a significant increase in movements above the threshold outlined in the EPUK and IAQM planning guidance. The duration of movements will be short-term in nature and are not considered further within the context of this assessment. Therefore, in accordance with the criteria presented within EPUK and IAQM planning guidance, additional road vehicle trips during the construction phase of the Proposed Development "*can be considered to have insignificant effects*" on air quality.

5.3 Construction Phase – Non-road Mobile Machinery.

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

The London Environment Strategy states that "*Emissions from NRMM construction and maintenance activities will, where appropriate, meet or exceed the standards set out by the NRMM Low Emission Zone*" and, as such, emissions from NRMM will be controlled at the Application Site.

Furthermore, IAQM construction guidance states that, with the application of suitable control measures and site management, exhaust emissions from on-site NRMM are "*unlikely to make a significant impact on local air quality. In the vast majority of cases, they will not need to be quantitatively assessed*".

6. Operational Phase Assessment.

The potential for air quality impacts during the operation of the Proposed Development are assessed in this section.

6.1 Road Traffic Emissions Screening Assessment.

Road traffic data associated with the Proposed Development has been provided by Momentum Transport, the appointed Transport Consultants for the project. The traffic flows indicate that there will be a 24-hour AADT increase of 60 LDVs and 8 HDVs (within an AQMA) on the local road network as a result of the Proposed Development.

This is below the indicative criteria in the EPUK and IAQM planning guidance of a change of more than 100 LDV and 25 HDV (within an AQMA) and therefore no further assessment is required.

In accordance with the EPUK and IAQM planning guidance, the impacts on air quality from operational phase traffic generation are considered to be not significant.

6.2 Site Suitability Assessment.

This section presents a review of nearby monitoring data in the vicinity of the Application Site, for the purpose of identifying the suitability of the Application Site for theatre and hotel use and identify any requirements for potential mitigation to be embedded into the Proposed Developments design. Due to the presence of monitoring data in close proximity to the Application Site, LAEI modelled data has not been included for this Site Suitability Assessment as it is predicted based on 2019 concentrations, whereas diffusion tube data is monitored 2022 data of concentrations. We have therefore opted to use the monitored passive diffusion tube monitoring data, which is considered more representative of on-site conditions for site suitability than LAEI concentrations.

As presented in Section 2 in line with LLAQM.TG(19), the 1-hour mean NO_2 AQOs applies to the Proposed Development due to its proposed theatre and hotel use. Moreover, Approved Document Part F of the Building Regulation 2021 also applies at the Proposed Development, though not required for planning. As such the annual mean NO_2, PM_{10} and $PM_{2.5}$ AQOs have been considered.

As such, this section considers the annual mean and 1-hour mean NO_2 concentrations; the annual mean PM_{10} concentration; and the annual mean $PM_{2.5}$ concentration at the Application Site.

6.2.1 Annual Mean NO_2 Concentrations

A review of the annual mean NO_2 concentrations monitored within 1 km of the Application Site has been completed as part of the baseline review with recent monitoring results, presented in Table 3 and Table 4.

Passive diffusion tube monitoring location CAM242, located approximately 21 m from the Application Site, and CAM 241, located approximately 53 m from the Application Site, are both located along Shaftesbury Avenue. These locations can be considered most representative of the air quality conditions at the Application Site due to their proximity and similar roadside location. The Application Site is set back approximately 3 m from the road, whereas both monitoring locations are set back by approximately 1 m. Neither of these passive diffusion tube monitoring locations recorded exceedances of the annual mean NO_2 AQO in 2022.

Therefore, NO_2 concentrations in the locale of the Proposed Development are considered to be compliant with the annual mean AQO and the Application Site is considered suitable for theatre and hotel use without the need for additional mitigation measures.

6.2.2 1-Hour Mean NO_2 Concentrations

As outlined in LLAQM.TG(19), an annual mean concentration of 60 $\mu g/m^3$ or above is often used to indicate a possible exceedance of the 1-hour mean NO_2 AQO, therefore 60 $\mu g/m^3$ has been used an Air Quality Assessment Level (AQAL) for the 1-hour mean NO_2 AQO.

Passive diffusion tube monitoring locations CAM242 and CAM241 showed no exceedance of 60 µg/m^3 in 2022. Additionally, none of the automatic monitoring locations within 1.5 km of the Application Site recorded an exceedance of the 1-hour mean NO_2 AQO in 2022.

Therefore, NO_2 concentrations in the locale of the Proposed Development are considered to be compliant with the 1-hour mean AQO and the Application Site is considered suitable for theatre and hotel use without the need for additional mitigation measures.

6.2.3 Annual Mean PM_{10} Concentrations

A review of the annual mean PM_{10} concentrations monitored within 1 km of the Application Site has been completed as part of the baseline review with recent monitoring results, presented in Table 3.

Oxford Street East is the closest PM_{10} monitoring location to the Application Site, approximately 500 m to the north west. It is a roadside monitoring location on Oxford Street, which is a busy A-road. As such, it is representative of worst-case air quality conditions at the Application Site. Oxford Street East recorded a PM_{10} concentration of 23 µg/m^3 in 2022, which is below the annual mean PM_{10} AQO.

Therefore, PM_{10} concentrations in the locale of the Proposed Development are considered to be compliant with the annual mean AQO and the Application Site is considered suitable for theatre and hotel use without the need for additional mitigation measures.

6.2.4 Annual Mean $PM_{2.5}$ Concentrations

A review of the annual mean $PM_{2.5}$ concentrations monitored within 1 km of the Application Site has been completed as part of the baseline review with recent monitoring results, presented in Table 3.

CD9 is the closest $PM_{2.5}$ monitoring location to the Application Site, approximately 1475 m to the north. It is a roadside monitoring location on Euston Road, which is a busy A-road. As such, it is representative of worst-case air quality conditions at the Application Site. CD9 recorded a $PM_{2.5}$ concentration of 12 µg/m^3 in 2022, which is below the annual mean $PM_{2.5}$ AQO.

Therefore, $PM_{2.5}$ concentrations in the locale of the Proposed Development are considered to be compliant with the annual mean AQO and the Application Site is considered suitable for theatre and hotel use without the need for additional mitigation measures.

6.2.5 Significance of Air Quality Impacts

To determine the significance of predicted air quality impacts based upon a site-suitability assessment, such as that undertaken as part of this assessment, the EPUK and IAQM planning guidance states:

"*Where the air quality is such that an air quality objective at the building façade is not met, the effect on residents or occupants will be judged as significant, unless provision is made to reduce their exposure by some means.*"

With regards to the Proposed Development, the unmitigated impact significance associated with the Proposed Development has been predicted in accordance with the stated assessment methodology. The following factors have been considered when providing justification:

- The Proposed Development will not introduce any new receptor into an area of exceedance of the annual mean NO_2 AQO based upon a review of NO_2 monitoring data within the development locale;
- The Proposed Development will not introduce any new receptor into an area of exceedance of the 1-hour mean NO_2 AQO based upon a review of NO_2 monitoring data within the development locale;
- The Proposed Development will not introduce any new receptor into an area of exceedance of the annual mean PM_{10} AQO based upon a review of PM_{10} monitoring data within the development locale; and
- The Proposed Development will not introduce any new receptor into an area of exceedance of the annual mean $PM_{2.5}$ AQO based upon a review of $PM_{2.5}$ monitoring data within the development locale.

As no exceedances of the considered AQOs are predicted, mitigation measures are not required for the operational phase of the Proposed Development. As such, the overall effect is considered to be 'not significant'.

6.3 Air Quality Neutral Assessment

6.3.1 Building Emissions.

The Proposed Development will be all-electric utilising zero emission technologies for the primary energy supply, with diesel generator being used for back-up and life emergency purposes only. Therefore, the total building emissions will be zero and under the buildings emissions benchmark since emissions from the backup generator can be exempt from the Air Quality Neutral Assessment. As there are no combustion processes under normal operation, the Proposed Development can be considered at least air quality neutral in relation to building emission.

6.3.2 Transport Emissions.

The Proposed Development will be a car-free development and is expected to only generate servicing trips. The transport emissions benchmark (TEB) in the AQN LPG, only estimates car or light van trips, whereas taxis, delivery, and servicing vehicle trips are not covered by air quality neutral calculations. However, all trips have been considered in the above assessment of impacts from road traffic.

As such the total transport emission are expected to be under TEBs and therefore the Proposed Development can be considered air quality neutral in relation to transport emission.

7. Mitigation.

7.1 Construction Phase.

To mitigate the potential impacts during the construction phase it is recommended that mitigation measures as detailed in the GLA construction guidance are implemented. These mitigation measures have been carefully selected for the Proposed Development and are based upon the dust risk categories outlined in Table 9 of this report.

It is recommended that LBoC approve an Air Quality Dust Management Plan (AQDMP) prior to works commencing on site, and that this is implemented using an appropriately worded planning condition. Table 10 below details the measures that should be incorporated in the AQDMP. For general mitigation measures, which excludes those specifically targeted towards demolition, earthworks, construction and trackout (which are given towards the end of the table), medium risk measures have been applied as these represent the highest risk category determined in Table 9. This approach is consistent with the GLA construction guidance.

Table 10: Mitigation Measures

Issue	Mitigation Measure
Communications	Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.
	Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.
	Display the head or regional office contact information.
Dust Management Plan	Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. The DMP may include monitoring of dust deposition, dust flux, real-time PM_{10} continuous monitoring and/or visual inspections.
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	Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the Local Authority when asked. This should include regular dust soiling check of surfaces such as street furniture, cars, window sills within 100 m of the site boundary, with cleaning to be provided if necessary.
	Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the Local Authority when asked.
	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 is a large site, before work on a phase commences.

Preparing and maintaining the site	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.
	Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period.
	Avoid site runoff of water or mud.
	Keep site fencing, barriers and scaffolding clean using wet methods.
	Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used cover as described below.
	Cover, seed or fence stockpiles to prevent wind whipping.
Operating vehicles/machinery and sustainable travel	Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone and the London NRMM standards, where 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 practicable.
	Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the Local Authority, where applicable).
	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 suppression/mitigation, using non-potable water where possible and appropriate.
	Use enclosed chutes and conveyors and covered skips.
	Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.
	Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.
Waste management	Avoid bonfires and burning of waste materials.
Demolition	Soft strip inside building before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).
	Ensure effective water suppression is used during demolition activities. 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.
Earthworks	Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.
	Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.
	Only remove the cover in small areas during work and not all at once.
Construction	Avoid scrabbling (roughening of concrete surfaces) if possible.
	Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.
	Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.
	For smaller supplies of fine powder materials, ensure bags are sealed after use and stored appropriately to prevent dust.
Trackout	Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being in continuous use.
	Avoid dry sweeping of large areas.
	Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.
	Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.
	Record all inspections of haul routes and any subsequent action in a site log book.
	Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.
	Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).
	Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.
	Access gates to be located at least 10 m from receptors where possible.

Potential dust effects during the construction phase are considered to be temporary in nature. The impacts are determined to be temporary as they will only potentially occur throughout the construction phase and short-term because these will only arise at particular times when certain activities and meteorological conditions for creating the level of magnitude predicted combine.

However, with the application of the above dust control and mitigation measures, it is considered that impacts at all receptors will be 'not significant' in accordance with the GLA construction guidance.

7.1.1 Construction Phase Road Traffic Emissions

Potential air quality impacts associated with construction phase road traffic emissions, principally HDV movements, have been screened out for further assessment with associated impacts on air quality predicted to result in an 'insignificant' effect. Therefore, mitigation measures are not considered to be required.

7.1.2 Construction Phase NRMM Emissions

In accordance with Part 4 of the IAQM construction guidance, all NRMM would need to adhere to the emissions standards for NO_2 and PM_{10} set out for NRMM. It is therefore considered the likely effects of construction plant on local air quality would be insignificant.

7.2 Operational Phase.

7.2.1 Road Traffic Emissions

Potential air quality impacts associated with operational phase development trips have been screened out from further assessment as '*the impacts [on air quality from operational phase movements] can be considered to have insignificant effects*' in accordance with the EPUK and IAQM planning guidance. Therefore, mitigation measures such as a sustainable travel plan are not considered to be required.

7.2.2 Site Suitability Assessment

A review of LBoC monitoring data in consideration of the Application Site indicates no likely exceedance of the annual and 1-hour mean NO_2 AQOs, or Part F of the Building Regulations (2021).

As no exceedances of any considered AQOs are predicted, this follows the 1st hierarchy principle of the EPUK and IAQM planning guidance to '*prevent and avoid*' exposure'. Therefore, no embedded mitigation into the Proposed Development design is required and natural ventilation is possible from an air quality perspective.

7.2.3 Air Quality Neutral Assessment

The Proposed Development is air quality neutral in regard to both building emissions and transport emissions in line with the AQN LPG. As such, no mitigation is required.

8. Summary and Conclusions.

This report details the potential air quality impacts associated with the construction and operation of a proposed theatre and hotel development at 135-149 Shaftesbury Avenue, London, WC2H 8AH.

The findings of the assessment are as follows:

- The baseline assessment has shown that the Proposed Development is located within an AQMA. The closest monitoring locations recorded no exceedances of the relevant AQOs in 2022;
- A qualitative assessment of the potential dust impacts during the construction of the Proposed Development has been undertaken. Through good practice and implementation of appropriate mitigation measures, it is expected that the release of dust would be effectively controlled and mitigated, with resulting impacts considered to be 'not significant'. All dust impacts are considered to be temporary and short-term in nature;
- The results of the operational phase traffic screening assessment indicate that Momentum Transport. Traffic generated by the Proposed Development is below the screening criteria set out in the IAQM and EPUK planning guidance and the effects are not predicted to be significant, therefore further assessment is not required;
- The Proposed Development energy strategy is expected to be all electric during primary operation, with a emergency back-up generator for life-safety purposes. As no combustion sources are proposed for the primary energy supply, no local air quality impacts are anticipated and a detailed assessment of impacts of combustion emissions from the energy plant has been screened out of this assessment;
- The Proposed Development is air quality neutral in regard to both building and transport emissions in line with the AQN LPG and as such no mitigation is required;
- A qualitative site suitability assessment has been undertaken to assess the suitability of the Application Site for the proposed theatre and hotel use. Based on the assessment results there will be no likely exceedances of relevant AQOs for all pollutants at the Proposed Development and therefore additional mitigation is not required.

Based on the information above, it is considered that air quality should not be viewed as a constraint to planning and the Proposed Development conforms to the principles of National Planning Policy Framework, the London Plan and the Camden Local Plan.

9. Glossary of Terms.

AADT	Annual Average Daily Traffic
AHU	Air Handling Unit
ASHP	Air Source Heat Pump
AQAP	Air Quality Action Plan
AQFA	Air Quality Focus Area
AQDMP	Air Quality Dust Management Plan
AQMA	Air Quality Management Area
AQO	Air Quality Objective
AURN	Automatic Urban and Rural Network
Defra	Department for Environment, Food and Rural Affairs
EPUK	Environmental Protection UK
GLA	Greater London Authority
HDV	Heavy Duty Vehicles (> 3.5 tonnes gross vehicle weight)
IAQM	Institute of Air Quality Management
LAQM	Local Air Quality Management
LBoC	London Borough of Camden
LDV	Light Duty Vehicles (≤3.5 tonnes gross vehicle weight)
LES	London Environment Strategy
LLAQM.TG	London Local Air Quality Management Technical Guidance
µg/m^3	Micrograms per cubic metre
MAQS	Mayor's Air Quality Strategy
NO_2	Nitrogen dioxide
NO_x	Nitrogen oxides (taken to be NO_2 + NO)
NPPF	National Planning Policy Framework
NRMM	Non-Road Mobile Machinery
Objectives	A nationally defined set of health-based concentrations for nine pollutants, seven of which are incorporated in Regulations, setting out the extent to which the standards should be achieved by a defined date. There are also vegetation-based objectives for sulphur dioxide and nitrogen oxides
PM_{10}	Particulate matter with an aerodynamic diameter less than 10 micrometres
$PM_{2.5}$	Particulate matter with an aerodynamic diameter less than 2.5 micrometres
PPG	Planning Practice Guidance
SPG	Supplementary Planning Guidance
Standards	A nationally defined set of concentrations for nine pollutants below which health effects do not occur or are minimal
TBE	Total Building Emissions
Trackout	The transport of dust and dirt from the construction / demolition site onto the public road network, where it may be deposited and then re-suspended by vehicles using the network. This arises when heavy duty vehicles (HDVs) leave the construction / demolition site with dusty materials, which may then spill onto the road, and/or when HDVs transfer dust and dirt onto the road having travelled over muddy ground on site
WCC	Westminster City Council
WHO	World Health Organisation

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Appendix 1 - EHO Consultation.

From: Parsons, Oliver
Sent: Tuesday, January 9, 2024 10:05 AM
To: airquality@camden.gov.uk
Subject: Air Quality Assessment - Shaftsbury Avenue

Good Morning,

Hoare Lea have been instructed to undertake an Air Quality Assessment to support the planning application for the proposed construction and operation of theatre and hotel at 135 Shaftesbury Avenue.

I have set out our proposed assessment approach below and would invite any comments or local air quality considerations you may have. The site is located at the below location (red outline):

The Proposed Development comprises a 1500+ capacity theatre and an upper floor extension for hotel use.

Hoare Lea propose to undertake the assessment using the following methodology:

- A baseline assessment of air quality will be undertaken using London Borough of Camden's (LBoC) data, taken from the most recently available Annual Status Reports.
- Monitoring data for 2020 and 2021 will not be included as part of our assessment, owing to the effects of the COVID-19 pandemic. Monitoring data from 2019 will be used to establish the baseline.
- A review of the LBoC Local Plan will be carried out.
- A review of relevant supplementary planning guidance including the Camden Air Quality Strategy.
- DEFRA's background pollution maps and LAEI modelled data will be used to establish background concentrations in the area.
- An assessment of the construction impacts on air quality and dust using the GLA methodology, in compliance with 'The Control of Dust and Emissions During Construction and Demolition'.
- Any construction or operational phase mitigation will be recommended as necessary in line with GLA guidance.
- The energy strategy for the Proposed Development is to be all electric, utilising zero emission technologies. There will also be diesel generators, for back up use only. However, as no combustion sources are proposed during normal operation and within the primary energy strategy, no local air quality impacts are anticipated and a detailed assessment of impacts of combustion emissions from the energy plant has been screened out of this assessment.
- An air quality neutral assessment will be carried out in line with the criteria set out in London Plan Guidance Air Quality Neutral Consultation Draft.
- Initial road traffic data associated with the Proposed Development has been provided by Momentum Transport, the appointed Transport Consultants for the project. It is expected that the annual average daily traffic (AADT) increase associated with the Proposed Development will be below the EPUK and IAQM criteria, indicating that the potential for air quality impacts from road traffic emissions associated with the Proposed Development, is unlikely. As such, a detailed assessment is not required and a screening assessment will be undertaken.
- An assessment of Site Suitability will be undertaken qualitatively with a desk-based review of the existing baseline air quality undertaken to inform the exposure of future users of the development. Local air quality monitoring, DEFRA's background pollution maps and LAEI modelled data will be used to understand concentrations at the Application Site.

I would be grateful if you could please confirm your acceptance of the proposed methodology and provide me with any comments you may have. However, if you would like to discuss further, please do not hesitate to contact me.

Please let me know if there are any additional guidance documents that aren't publicly available that you would like us to consider.

Kind regards,

Oliver Parsons
Senior Air Quality Consultant

Appendix 2 - Professional Experience.

Christelle Escoffier (Hoare Lea) MsEng. Msc. PhD MIES MIAQM

Christelle Escoffier is a Senior Associate and technical lead for air quality group with Hoare Lea. She is a Full Member of the Institution of Environmental Sciences and the Institute of Air Quality Management. She graduated with a Master in Science Diploma from Paris VI University, France and holds a Doctor of Philosophy degree in Physical Oceanography, Meteorology and Environment, from the same University.

In her twenty-two years of professional experience, she has managed and delivered air quality services for a wide range of industries in the United Kingdom (UK), the United States of America (USA) and the Middle East. Her portfolio of experience comprehends projects for diverse sectors from road transport, planning and development, wastewater and waste, oil and gas to power (energy centres, landfill gas plant, power reserve facilities, gas-fired and oil-fired combustion turbine stations). Christelle has in-depth knowledge of atmospheric dispersion models. She has delivered dispersion modelling training courses to government agencies, academic, industrial and commercial professionals worldwide since 2005.

Andy Day (Hoare Lea), BSc (Hons), MSc, AMIEnvSc, MIAQM

Andy is a Principal Air Quality Consultant with Hoare Lea. He is an Associate Member of the Institute of Environmental Sciences and a Full Member of the Institute of Air Quality Management. He is a chemistry graduate with a Master's specialising in the catalysed removal of harmful volatile organic compounds (VOCs) often generated from the combustion of fuel in car engines.

Andy has worked on a range of projects of varying size across a number of different sectors. His experience focusses on work up to and through planning for air quality assessments and environmental impact assessments. Andy also has experience in detailed dispersion modelling of road traffic and energy combustion plant, emission mitigation statements, damage cost calculations, indoor and outdoor air quality monitoring and assessing the air quality impact at ecologically sensitive sites.

Andy has a particular interest in reducing emissions for the benefit of human health and the environment through the life cycle of a building.

Oliver Parsons (Hoare Lea), BSc (Hons), MSc, AMIEnvSc, AMIAQM

Oliver is a Senior Air Quality Consultant with Hoare Lea. He is an Associate Member of the Institution of Environmental Sciences and an Associate Member of the Institute of Air Quality Management. He has worked on projects across multiple sectors including residential, commercial and industrial sectors.

He has completed two EIA within the past year at Hoare Lea, SSEN (film studio) and SBQ (mixed use residential). He has experience across different aspects of the air quality assessment processes including monitoring, detailed dispersion modelling of roads, standalone air quality assessments and environmental impact assessments.

Alex Johnson (Hoare Lea), MSc, BSc (Hons), AMIAQM

Alex is an Air Quality Consultant with Hoare Lea. He is an Associate Member of the Institution of Environmental Sciences and an Associate Member of the Institute of Air Quality Management. He has worked on a variety of graduated from the University of Southampton with a master's degree in Environmental Pollution Control.

He has completed a variety of air quality projects at Hoare Lea, including air quality assessments, indoor air quality plans, monitoring analysis, and bespoke technical reports for clients across various sectors. Previously, he has also worked on several projects for Natural England, Defra and the Environment Agency to provide geospatial data analysis and research assistance.

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