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Fund Management

# Bridges Healthcare (Richmond) Limited



# RICHMOND INN

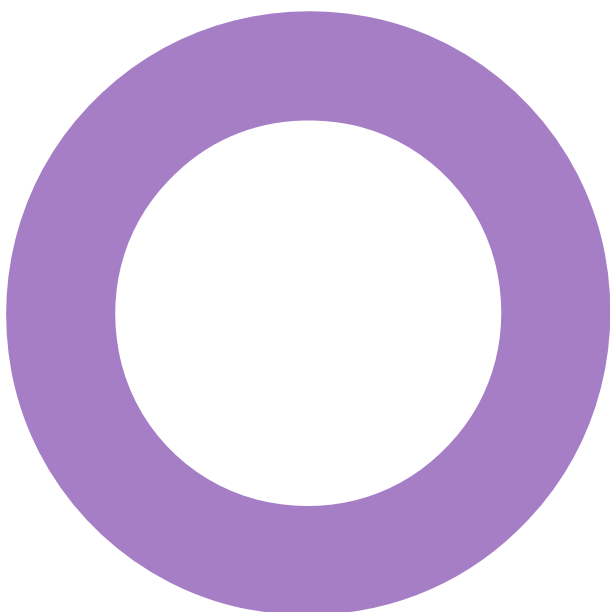
Air Quality Assessment  
Hoare Lea



**Rehabilitation Hotel.  
London.**  
**Bridges Healthcare  
(Richmond) Limited.**

**AIR QUALITY**  
AIR QUALITY ASSESSMENT

REVISION 01 – 05 MAY 2022



## Audit sheet.

Rev.	Date	Description of change / purpose of issue	Prepared	Reviewed	Authorised
00	04/05/2022	First Draft	ED	KW	CR
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## Executive Summary.

Hoare Lea have been commissioned by Bridges Healthcare (Richmond) Limited to undertake an Air Quality Assessment to support the planning application for the proposed physiotherapy-led rehabilitation centre, Richmond, TW9 1UG (the 'Application Site').

The proposals comprise the partial demolition and extension of Richmond Inn for Class C2 visitor accommodation providing care and physiotherapy-led rehabilitation, highways works, car and cycle parking, refuse storage, landscaping and other associated works.

The baseline assessment has shown that the Application Site is located within Richmond Air Quality Management Area (AQMA). Monitoring results from within London Borough of Richmond upon Thames (LBRuT) indicate that there have been exceedances of the Air Quality Objectives (AQOs) and World Health Organisation (WHO) guidelines for nitrogen dioxide (NO<sub>2</sub>), but not for particulate matter (PM<sub>10</sub>) in recent years. PM<sub>2.5</sub> concentrations are not currently monitored in LBRuT. Defra concentrations are well below the relevant AQOs for all pollutants and also below the WHO guidelines for NO<sub>2</sub> and PM<sub>10</sub>, but not for PM<sub>2.5</sub>. London Atmospheric Emissions Inventory (LAEI) modelled annual mean concentrations are below the annual mean AQOs. However, both the PM<sub>10</sub> and PM<sub>2.5</sub> LAEI modelled annual mean concentrations are in exceedance of the relevant WHO guidelines.

A Site Suitability Assessment has shown that there are expected to be no exceedances of the 1-hour mean NO<sub>2</sub> AQO (the relevant AQO for developments such as this) at the Proposed Development. Therefore, the Application Site is considered suitable for use as a physiotherapy-led rehabilitation centre without mitigation.

The Proposed Development will lead to a reduction in traffic related emissions. This is as a result of a decrease in trips associated with the Proposed Development in relation to its current former use as Richmond Inn. This was advised by Vectos, the project's transport consultants. The traffic generated 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. The trip generation showed that the potential impact of additional road traffic on local air quality is considered insignificant and a detailed assessment is not required.

The proposed energy strategy is all electric and will utilise a variable refrigerant flow electric heat pump for heating and cooling through fan coil units. As no combustion sources are proposed during normal operation of the Proposed Development, 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 emissions and transport emissions in line with the London Plan Guidance Air Quality Neutral Consultation Draft. As such, no mitigation is required.

The impacts of the construction work on dust and ambient PM<sub>10</sub> concentrations have been assessed and the risk of dust causing a loss of local amenity and increased exposure to PM<sub>10</sub> concentrations has been used to identify appropriate mitigation measures. Provided these are implemented and included within a dust management plan, for example through a planning condition, the residual impacts are considered to be not significant.

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

## 1. Introduction.

Hoare Lea have been commissioned by Bridges Healthcare (Richmond) Limited to undertake an Air Quality Assessment to support the planning application for the proposed physiotherapy-led rehabilitation centre, Richmond, TW9 1UG (the 'Application Site').

### 1.1 Proposed Development.

The proposals comprise the partial demolition and extension of Richmond Inn for Class C2 visitor accommodation providing care and physiotherapy-led rehabilitation, highways works, car and cycle parking, refuse storage, landscaping and other associated works.

The proposed energy strategy is all electric and will utilise a variable refrigerant flow (VRF) all electric heat pump for heating and cooling through fan coil units (FCUs).

In regard to the ventilation strategy for the Proposed Development, the bedrooms, gym, pool and physio rooms will use Mechanical Ventilation with Heat Recovery (MVHR) units located in the roof. The lounge lobby and salon will use a MVHR at high level in the ceiling voids. The kitchen and restaurant will use a dedicated Air Handling Unit (AHU), located in the vent plant room on lower ground floor, with exhaust to the roof.

### 1.2 Application Site Description and Location.

The Application Site is located within the London Borough of Richmond upon Thames Council (LBRuT) administrative area at the approximate National Grid Reference (NGR): X 518337 Y 175019.

The Application Site is located at the junction of Sheen Road (A305) and Church Road (B322), with Sheen Road to the south, and Church Road to the west. The area surrounding the Application Site largely consists of residential dwellings and commercial premises.

The Application Site currently comprises the existing Richmond Inn hotel, a 44-bed hotel which has been vacant since its closure in March 2020.

Figure 1 illustrates the location of the Application Site.



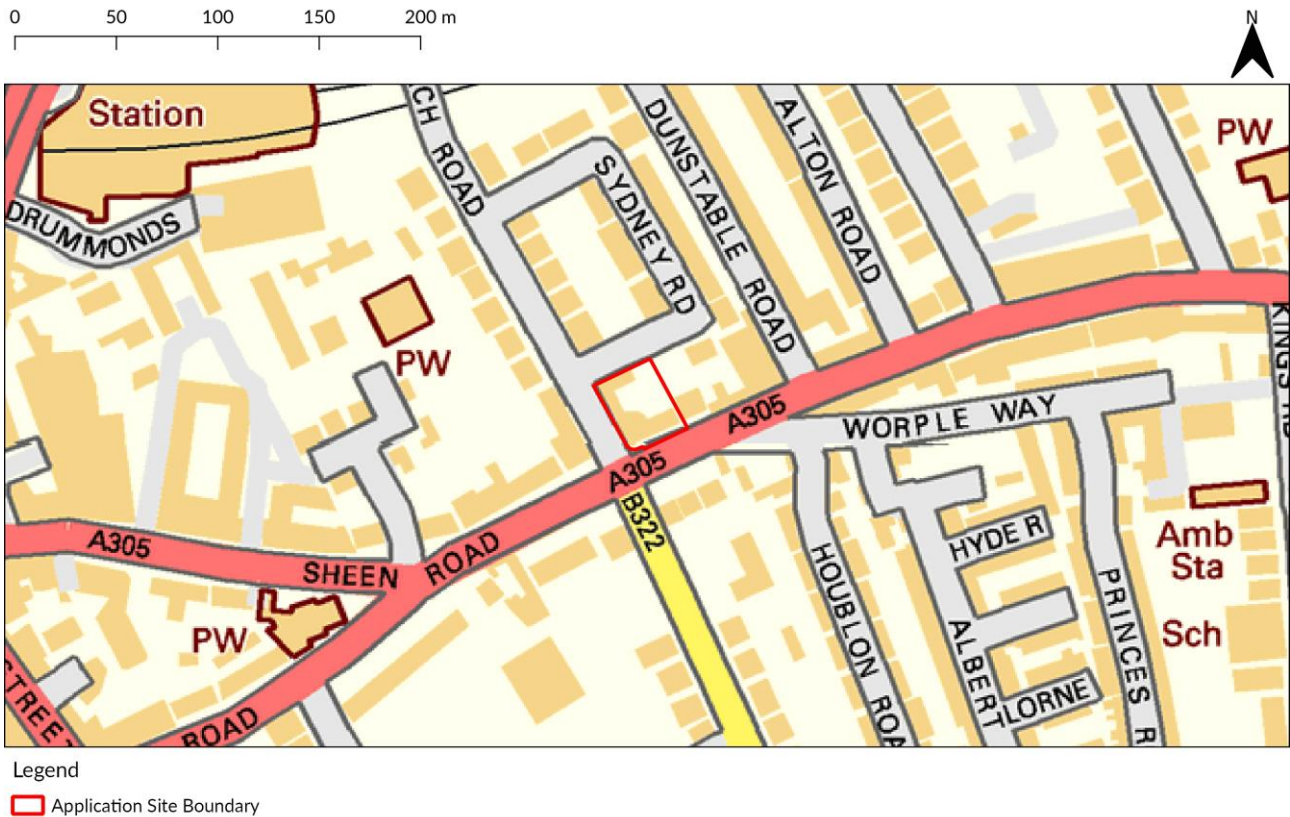


Figure 1: Location of the Application Site. Contains OS Data © Crown Copyright and Database rights 2022.

### 1.3 Scope of Assessment.

An email detailing the proposed methodology for the Air Quality Assessment was provided to LBRuT on the 29<sup>th</sup> April 2022. A response was received on the 29<sup>th</sup> April 2022 and the comments made have been addressed in this report. A copy of the correspondence with LBRuT has been included in Appendix 1.

A summary of the scope of the assessment includes:

- Determination of baseline scenario, using LBRuT and London Borough of Hammersmith and Fulham (LBHF) 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; 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)<sup>1</sup> 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<sup>2</sup> 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 objectives have been, or will be, achieved at relevant locations, by the applicable date. If the objectives 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 objective(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 objectives for use by local authorities are prescribed within the Air Quality (England) Regulations 2000<sup>3</sup>, and the Air Quality (England) (Amendment) Regulations 2002<sup>4</sup>.

The objectives for Nitrogen Dioxide (NO<sub>2</sub>) and particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) are set out in Table 1. The objectives for NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> were to have been achieved by 2005, 2004 and 2020 respectively and continue to apply in all future years thereafter. It should be noted that local authorities in England have a flexible role in working towards reducing emissions and concentrations of PM<sub>2.5</sub>.

**Table 1: Air Quality Objectives for NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub>**

Pollutant	Time Period	Objective
Nitrogen Dioxide (NO <sub>2</sub> )	1-hour Mean	200 µg/m <sup>3</sup> Not to be exceeded more than 18 times a year
	Annual Mean	40 µg/m <sup>3</sup>
Fine Particles (PM <sub>10</sub> )	24-hour Mean	50 µg/m <sup>3</sup> Not to be exceeded more than 35 times a year
	Annual Mean	40 µg/m <sup>3</sup>
Fine Particles (PM <sub>2.5</sub> ) *	Annual Mean	25 µg/m <sup>3</sup>

\*The time period in LLAQM.TG19 states "Work towards reducing emissions/concentrations of fine particulate matter (PM<sub>2.5</sub>)"

The objectives apply at locations where members of the public are likely to be regularly present and exposed over the averaging period of the objective. Examples of where the annual mean objectives should apply are provided in the London Local Air Quality Management Technical Guidance (LLAQM.TG(19))<sup>5</sup>, and include: building facades of residential properties, schools, hospitals. The annual mean objectives are not relevant for the building facades of offices or other places of work where members of the public do not have regular access, kerbsides or gardens.

The 24-hour objective for PM<sub>10</sub> is considered to apply at the same locations as the annual mean objective, as well as in gardens of residential properties and at hotels.

The 1-hour objective for NO<sub>2</sub> 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 objective 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<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub>; these are legally binding and have been implemented into English legislation by The Air Quality Standards Regulations 2010<sup>6</sup>.

The limit values for NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> are the same as the English objectives (Table 1), but applied from 2010 for NO<sub>2</sub>, 2005 for PM<sub>10</sub> and 2015 for PM<sub>2.5</sub>. 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 General Nuisance Legislation.

Part III of the Environmental Protection Act (EPA) 1990 (as amended)<sup>7</sup> 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<sub>10</sub>) 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.

## 2.4 Clean Air Strategy.

The Clean Air Strategy (CAS)<sup>8</sup>, 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.

## 2.5 Planning Policy.

### 2.5.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF) 2021<sup>9</sup> 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 174: "Planning policies and decisions should contribute to and enhance the natural and local environment by: 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"

Paragraph 185: "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 186: "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 188: "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."

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.”

The NPPF is supported by Planning Practice Guidance (PPG)<sup>10</sup>.

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 conservation 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.”

## **2.6 Local Policy.**

### **2.6.1 The London Plan 2021**

The London Plan 2021<sup>11</sup> 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<sup>11</sup>: 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:

[...]

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

### 2.6.2 The London Environment Strategy

The London Environment strategy (LES), published in May 2018<sup>12</sup>, supersedes the previous Mayor’s Air Quality Strategy (MAQS) for London, published in December 2010. The LES strategy 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<sub>x</sub> 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<sub>2.5</sub> 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 strategy 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 Strategy also includes the focus on the 187 Air Quality Focus Areas (AQFA) declared by the Greater London Authority (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<sub>2</sub> 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.

### 2.6.3 London Borough of Richmond Upon Thames Local Plan.

The LBoRuTC Local Plan<sup>13</sup> was adopted on the 3<sup>rd</sup> July 2018. This document sets out the policies and guidance for the development of the Borough over the following 15 years. It looks ahead to 2033 and identifies where the main developments will take place, and how areas of the Borough will change, or be protected from change, over that period.

The following policies relating to air quality are contained within the Local Plan.

#### Policy LP 8. Amenity and Living Conditions

*“All development will be required to protect the amenity and living conditions for occupants of new, existing, adjoining and neighbouring properties. The Council will:*

*[...]*

*4. Ensure there is no harm to the reasonable enjoyment of the use of buildings, gardens and other spaces due to increases in traffic, servicing, parking, noise, light, disturbance, air pollution, odours or vibration or local micro-climatic effects.”*

#### Policy LP 10. Local Environmental Impacts, Pollutions and Land Contamination

*“A. The Council will seek to ensure that local environmental impacts of all development proposals do not lead to detrimental effects on the health, safety and the amenity of existing and new users or occupiers of the development site, or the surrounding land. These potential impacts can include, but are not limited to, air pollution, noise and vibration, light pollution, odours and fumes, solar glare and solar dazzle as well as land contamination. Developers should follow any guidance provided by the Council on local environmental impacts and pollution as well as on noise generating and noise sensitive development. Where necessary, the Council will set planning conditions to reduce local environmental impacts on adjacent land uses to acceptable levels.*

*Air Quality*

*B. The Council promotes good air quality design and new technologies. Developers should secure at least 'Emissions Neutral' development. To consider the impact of introducing new developments in areas already subject to poor air quality, the following will be required:*

- 1. an air quality impact assessment, including where necessary, modelled data;*
- 2. mitigation measures to reduce the development's impact upon air quality, including the type of equipment installed, thermal insulation and ducting abatement technology;*
- 3. measures to protect the occupiers of new developments from existing sources;*
- 4. strict mitigation for developments to be used by sensitive receptors such as schools, hospitals and care homes in areas of existing poor air quality; this also applies to proposals close to developments used by sensitive receptors.*

*[...]*”

### 2.6.4 London Borough of Richmond Upon Thames Air Quality Action Plan

The LBoRuTC Air Quality Action Plan<sup>14</sup> (AQAP) covers the actions intended to be taken to tackle air pollution in the Borough between 2020-2025.

The AQAP is split into five key areas:

- Monitoring air quality;
- Changing out environment;
- Changing behaviour;
- Tackling pollution; and
- Protecting our schools.

## **2.7 Assessment Guidance.**

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

### **2.7.1 Mayor of London, London Local Air Quality Management Technical Guidance**

The Mayor of London's LLAQM.TG(19)<sup>5</sup> was published for use by local authorities in their LAQM review and assessment work. The document provides key guidance in aspects of air quality assessment, including screening, use of monitoring data, and use of background data that are applicable to all air quality assessments.

### **2.7.2 EPUK-IAQM 'Air Quality Guidance for Planning'**

Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM) have together published guidance<sup>15</sup> 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.

### **2.7.3 Air Quality Neutral Planning Support Update: GLA 80371**

Air Quality Consultants Ltd and ENVIRON UK Ltd produced guidance on behalf of the Greater London Authority on how to assess whether a development is air quality neutral. It provides benchmarks for assessing that development is consistent with the Mayor's policy<sup>16</sup>. This guidance is due to be replaced when the final London Plan Guidance (LPG) (see below) is published later in 2022.

### **2.7.4 London Plan Guidance Air Quality Neutral Consultation Draft**

The LPG Air Quality Neutral Consultation Draft<sup>17</sup> 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 guidance is currently in draft form but final guidance is expected to be published later in 2022.

### **2.7.5 GLA 'Construction and Demolition Dust Guidance'**

Guidance on the assessment of dust from demolition and construction has been published by the GLA<sup>18</sup>. 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 within further IAQM guidance.

### **2.7.6 Sustainable Design and Construction Supplementary Planning Guidance**

The Greater London Authority published supplementary planning guidance (SPG) on sustainable design and construction in April 2014<sup>19</sup>, in order to improve the environmental performance of new developments.

### **2.7.7 London Borough of Richmond Upon Thames Air Quality Supplementary Planning Document**

The LBoRuTC Air Quality Supplementary Planning Document<sup>20</sup> (SPD) has been produced to address common air quality issues affecting the Borough and assist in providing a consistent approach to new development. The primary aim of the SPD is to supplement existing Local Plan policies which seek to improve air quality in the Borough. The SPD assists developers, decision makers, agents, residents and others to identify issues to be addressed in any application for development consent in which air quality will be an important consideration when assessing that application.



## 3. Methodology of Assessment.

### 3.1 Consultation.

The approach to the assessment, as described in section 1.3, was provided to the LBRuT for review. A response was received on the 29<sup>th</sup> April 2022. A copy of correspondence with LBRuT has been included in Appendix 1.

### 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 LBRuT and LBHF including a review of the LBRuT<sup>26</sup> and LBHF<sup>27</sup> air quality reports and local monitoring data;
- The UK Pollutant Release and Transfer Register<sup>21</sup>;
- Background pollution maps from Defra's Local Air Quality Management (LAQM) website<sup>22</sup>;
- LAEI modelled annual mean concentrations from the GLA<sup>29</sup>;
- Pollution Inventory from the Environment Agency<sup>23</sup>
- The UK Ambient Air Quality Interactive Map<sup>24</sup>;
- 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 GLA methodology. Activities on the proposed construction site have been divided into four 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; and
- The risk of health effects due to a significant increase in exposure to PM<sub>10</sub>.

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

- A 'human 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;
- 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 guidance available online<sup>15</sup>.

### 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 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 guidance<sup>25</sup>.

### 3.4 Operational Phase Impacts.

#### 3.4.1 Road Traffic Impacts

The screening assessment has been undertaken with reference to the following documents:

- EPUK and IAQM 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 Combustion Plant Screening of Impacts

The proposed energy strategy is all electric and will utilise a VRF electric heat pump for heating and cooling through FCUs. As no combustion sources are proposed during normal operation of the Proposed Development, 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.

#### 3.4.3 Site Suitability

A qualitative 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.

Site Suitability will be assessed qualitatively using monitoring data from LBRuT and pollutant concentrations from Defra background maps and LAEI modelled annual mean concentrations.

### 3.5 Assessment of Significance.

#### 3.5.1 Construction Dust

The GLA guidance<sup>18</sup> 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 guidance<sup>15</sup> 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/IAQM 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.”

## 4. Baseline Environment.

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

### 4.1 Site Setting.

The Application Site is located within LBRuT's administrative area at the approximate National Grid Reference (NGR): X 518337 Y 175019.

The Application Site is located at the junction of Sheen Road (A305) and Church Road (B322), with Sheen Road to the south, and Church Road to the west. The area surrounding the Application Site largely consists of residential dwellings and commercial premises.

The Application Site currently comprises the existing Richmond Inn hotel, a 44-bed hotel which has been vacant since its closure in March 2020.

### 4.2 Local Air Quality Management Review and Assessment.

From review of LBRuT's most recent Annual Status Report<sup>26</sup> (ASR), NO<sub>2</sub> concentrations within LBRuT's administrative area continue to show widespread exceedance of the AQOs for NO<sub>2</sub>, however a slight downward trend in NO<sub>2</sub> concentrations has been observed from 2017 onwards. PM<sub>10</sub> concentrations are below the annual mean AQO, but concentrations of PM<sub>10</sub> are not decreasing year on year. PM<sub>2.5</sub> concentrations are not currently being monitored within LBRuT. The whole of LBRuT has been declared an AQMA for high concentrations of NO<sub>2</sub> and PM<sub>10</sub>.

Additionally, based on the available monitoring data, during the onset of the COVID-19 pandemic, average reductions in NO<sub>2</sub> at automatic monitoring sites and passive diffusion tube monitoring locations in LBRuT from 2019 to 2020 were approximately 27% and 18% respectively. The percentage reductions in pollutant concentrations during 2020 are directly attributable to reduced traffic levels as a result of Government implemented lockdowns. As such, the pollutant concentrations recorded at monitoring stations in 2020 are not considered to be representative of "normal" air quality conditions. Whilst it is expected that as a result of the COVID-19 pandemic that behaviours will change in the future, the impact of this on air quality long-term is currently unknown and therefore the use of 2020 data has been omitted from this assessment however has been shown in the report for information

### 4.3 Local Air Quality Monitoring.

The UK Automatic Urban and Rural Network (AURN) is a countrywide network of air quality monitoring stations operated on behalf of Defra. Monitoring data for AURN sites is available from the UK Air Information Resource website (UK AIR). The closest AURN to the Application Site is Teddington AURN (TD0). This has been included in Table 2 below.

Additionally, LBRuT operate two automatic monitoring stations, with the closest site being RI1, approximately 4.7 km to the northeast of the Application Site.

LBRuT's main roadside automatic monitoring site is at Castlenau (RI1), on the main road to Hammersmith Bridge. This road has been closed to all vehicles since 10th April 2019. Although technically a roadside site, in practice RI1 has become more of a background site in recent years. As such, monitoring data<sup>27</sup> from HF5, a roadside automatic monitoring station located within LBHF has been included in Table 2 below.

Recent monitoring data for the automatic monitoring stations is detailed in Table 2 and a visual representation of the locations of the automatic monitoring stations is shown in Figure 2.

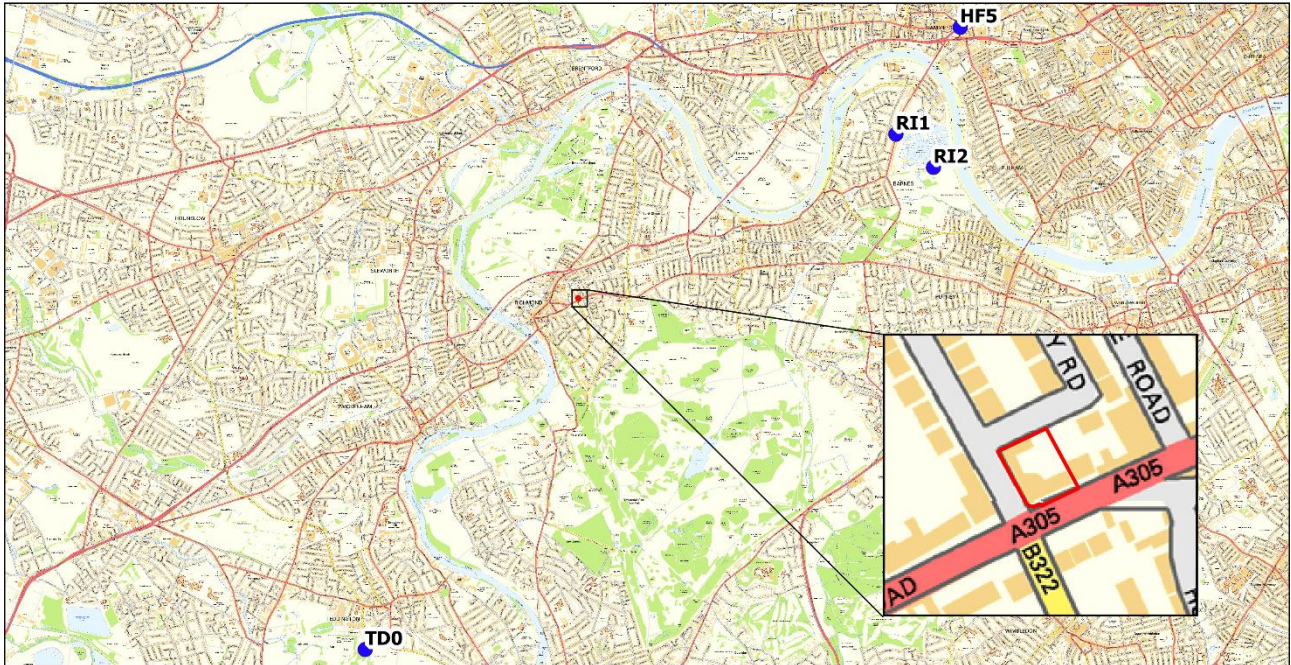
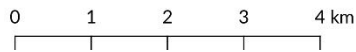
Table 2: Automatic Monitoring Locations

Monitoring site and distance (km) from site boundary (approx.)	Objective	2015	2016	2017	2018	2019	2020
<b>NO<sub>2</sub></b>							
RI1, Roadside, 4.7 km, LBRuT	Annual mean ( $\mu\text{g}/\text{m}^3$ )	34	36	31	31	27	20
	Number of hours with concentrations $>200 \mu\text{g}/\text{m}^3$	0	0	0	0	0	0
RI2, Suburban, 4.9 km, LBRuT	Annual mean ( $\mu\text{g}/\text{m}^3$ )	21	25	21	20	21	15
	Number of hours with concentrations $>200 \mu\text{g}/\text{m}^3$	0	0	0	0	0	0
TD0, Suburban, 5.4 km, LBRuT	Annual mean ( $\mu\text{g}/\text{m}^3$ )	27	19	22	-	-	-
	Number of hours with concentrations $>200 \mu\text{g}/\text{m}^3$	-	-	-	-	-	-
HF5, Roadside, 6.1 km, LBHF	Annual mean ( $\mu\text{g}/\text{m}^3$ )	-	-	-	-	<b>53</b>	37
	Number of hours with concentrations $>200 \mu\text{g}/\text{m}^3$	-	-	-	-	2	1
<b>PM<sub>10</sub></b>							
RI1, Roadside, 4.7 km	Annual mean ( $\mu\text{g}/\text{m}^3$ )	22	20	18	19	15	15
	Number of days with concentrations $> 50 \mu\text{g}/\text{m}^3$	5	7	4	1	3	0
RI2, Suburban, 4.9 km	Annual mean ( $\mu\text{g}/\text{m}^3$ )	17	16	15	15	16	16
	Number of days with	1	3	3	0	3	0

Monitoring site and distance (km) from site boundary (approx.)	Objective	2015	2016	2017	2018	2019	2020
	concentrations > 50 µg/m <sup>3</sup>						
TD0, Suburban, 5.4km	Annual mean (µg/m <sup>3</sup> )	-	-	-	-	-	13
	Number of days with concentrations > 50 µg/m <sup>3</sup>	-	-	-	-	-	2
HF5, Roadside, 6.1 km, LBHF	Annual mean (µg/m <sup>3</sup> )	-	-	-	-	22	19
	Number of days with concentrations > 50 µg/m <sup>3</sup>	-	-	-	-	5	5
<b>PM<sub>2.5</sub></b>							
TD0, Suburban, 5.4km	Annual mean (µg/m <sup>3</sup> )	-	-	10	11	12	8
HF5, Roadside, 6.1 km, LBHF	Annual mean (µg/m <sup>3</sup> )	-	-	-	-	15	14

\*Concentrations shown in bold represent exceedance of the relevant AQO

The monitoring results above indicate that there have been no exceedances of the AQOs for NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> in any year from 2015 to 2019 at any of the automatic stations within LBRuT detailed above. However, there was an exceedance of the annual mean NO<sub>2</sub> AQO at HF5 in LBHF in 2019. There have been no exceedances of the World Health Organisation (WHO) guidelines for NO<sub>2</sub> from 2015 onwards and no exceedances of the WHO guidelines for PM<sub>10</sub> from 2016 onwards, except at HF5 in 2019. However, there have been exceedances of the WHO guideline for PM<sub>2.5</sub> in both 2018 and 2019.



Legend

- Application Site Boundary
- Automatic Monitoring Location

Figure 2: Automatic Monitoring Locations within the LBRuT and HF5 from LBHF. Contains OS Data © Crown Copyright and Database rights 2022.

In 2020, LBRuT operated 64 passive diffusion tubes to monitor NO<sub>2</sub> concentrations. A review of the most recent monitoring data available indicated that there are 10 passive diffusion tube monitoring locations within 1 km of the Application Site. Recent monitoring results are shown in Table 3 and the passive diffusion tube monitoring locations are illustrated in Figure 4.

Table 3 details the monitoring results for all passive diffusion tube monitoring locations for the most recent years available.

Table 3: Passive Diffusion Tube Monitoring Results

Site ID	Site Type	Site Name	Distance (km) from site (approx.)	Annual Mean NO <sub>2</sub> Concentration (µg/m <sup>3</sup> )					
				2015	2016	2017	2018	2019	2020
44	Kerbside	Sheen Rd, Richmond (near shops)	140	39	42	41	40	37	33
41	Kerbside	Paradise Rd, Richmond	210	38	39	36	34	32	-
42	Roadside	The Quadrant/Kew Rd, Richmond	330	47	<u>82</u>	<u>89</u>	<u>72</u>	<u>62</u>	60
Rut02	Kerbside	George Street, Richmond	410	<u>88</u>	<u>96</u>	<u>82</u>	<u>72</u>	<u>63</u>	52

Site ID	Site Type	Site Name	Distance (km) from site (approx.)	Annual Mean NO <sub>2</sub> Concentration (µg/m <sup>3</sup> )					
				2015	2016	2017	2018	2019	2020
17	Roadside	Red Lion Street, Richmond	560	<b><u>63</u></b>	<b><u>69</u></b>	60	54	50	40
43	Kerbside	Hill St, Richmond	620	<b><u>80</u></b>	<b><u>85</u></b>	<b><u>78</u></b>	59	46	41
27	Kerbside	Queens Rd, Richmond (nr. Russell Walk)	690	37	43	41	37	32	21
18	Kerbside	Lower Mortlake Rd, Richmond (nr. Trinity Rd)	730	<b><u>67</u></b>	56	58	46	46	41
26	Roadside	URRW, Sheen (nr. Courtland Estate)	810	42	40	40	36	34	32
67	Roadside	Petersham Rd opp Poppy Factory,	950	-	-	44	41	32	23

\*Concentrations shown in bold represent exceedances of the annual mean NO<sub>2</sub> AQO. Concentrations also underlined represent likely exceedance of the 1-hour mean NO<sub>2</sub> AQO.

As shown in Table 3 above, there have been exceedances of the annual mean NO<sub>2</sub> AQO and WHO guideline for NO<sub>2</sub> at eight out of the 10 nearby passive diffusion tube monitoring locations in recent years. In 2019, the most recent year with available representative monitoring data, there were exceedances of the annual mean NO<sub>2</sub> AQO at five out of the 10 nearby passive diffusion monitoring locations.

An annual mean concentration of 60 µg/m<sup>3</sup> or above is often used to indicate a possible exceedance of the 1-hour mean NO<sub>2</sub> AQO. There have been exceedances of 60 µg/m<sup>3</sup> at five out of the 10 nearby passive diffusion tube monitoring locations in recent years. In 2019, the most recent year with available representative monitoring data, there were exceedances of 60 µg/m<sup>3</sup> at two of the 10 nearby passive diffusion monitoring locations.

To understand whether air quality is improving in LBRuT, a five-year regression analysis has been undertaken on average annual mean NO<sub>2</sub> concentrations recorded at all passive diffusion tube monitoring locations with 5 years' worth of data within LBRuT's administrative area between 2015 and 2019, as shown in Figure 3 below.



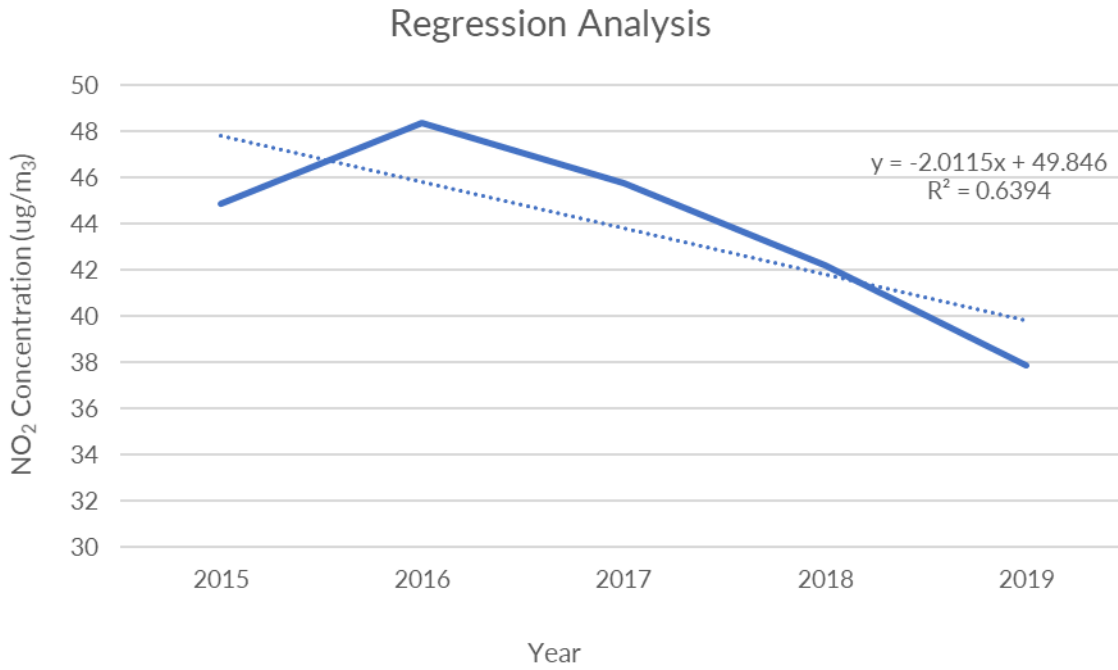
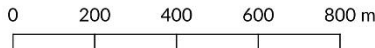


Figure 3: Regression Analysis of monitored NO<sub>2</sub> concentrations recorded at passive diffusion tube monitoring locations within LBRuT, with 5 years' worth of data from 2015 to 2019.

The regression analysis has shown an average decrease in NO<sub>2</sub> concentrations within LBRuT of 2 µg/m<sup>3</sup> per year. However, this trend is not significant.



Legend

- Application Site Boundary
- Passive Diffusion Tube Monitoring Location

Figure 4: Passive Diffusion Tube Monitoring Locations within 1 km of the Application Site. Contains OS Data © Crown Copyright and Database rights 2022.

**4.4 Industrial Pollution.**

A desk-based review of potential industrial sources using the UK Pollutant Release and Transfer Register<sup>21</sup> and the Pollution Inventory<sup>23</sup> from the Environment Agency identified one potential source of industrial pollution within 2 km of the Application Site. From 2018 onwards, no pollutant release to air has been recorded. Prior to this, the release of methane to air was recorded. However, owing to the distance of the pollutant source from the Application site, and the pollutant type, this industrial/waste management source of air pollution is not likely to affect the Application Site with regard to air quality.

Table 4: Industrial/Waste Management Sources of Air Pollution within 2 km of the Application Site from 2015 onwards.

Source Name	Source Type	Air Pollutant Release
Mogden STW	Urban waste-water treatment	Methane (CH <sub>4</sub> ) prior to 2019

**4.5 Defra Predicted Concentrations.**

The background concentrations have been obtained from the national maps published by Defra<sup>22</sup>. 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 squares X 518500 Y 174500 and X 518500 Y 175500 and the predicted concentrations for these grid squares for NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> are provided in Table 5 for 2022 (the current year) and for 2024 (the earliest anticipated opening year for the Proposed Development).

Table 5: Predicted Background Concentrations

Year	Predicted Background Concentration ( $\mu\text{g}/\text{m}^3$ )		
	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
X 518500 Y 174500			
2022	18.8	15.9	10.8
2024	17.7	15.5	10.5
X 518500 Y 175500			
2022	20.5	17.0	11.5
2024	19.2	16.6	11.2

As shown in Table 5, background concentrations are well below the relevant AQOs for all pollutants and also below the WHO guidelines for NO<sub>2</sub> and PM<sub>10</sub>. However, there are exceedances of the WHO guideline for PM<sub>2.5</sub> in both grid squares in both 2022 and 2024.

#### 4.6 Greater London Authority.

##### 4.6.1 Air Quality Focus Areas

AQFAs<sup>28</sup> are locations that not only exceed the annual mean limit value for NO<sub>2</sub> but are also locations with high human exposure. As shown in Figure 5, the Application Site is located approximately 140 m to the southeast of an AQFA (Richmond Town Centre including Bridge Street).



Figure 5: Air Quality Focus Areas in the Vicinity of the Application Site. Contains OS Data © Crown Copyright and Database rights 2022.

#### 4.6.2 Pollution Maps

The GLA have produced LAEI annual mean concentration maps for the whole of London on a 20 m by 20 m grid for a historic year (2019)<sup>29</sup>. Figure 6, Figure 7 and Figure 8 illustrate the annual mean NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> concentrations in the immediate area of the Application Site for 2019.

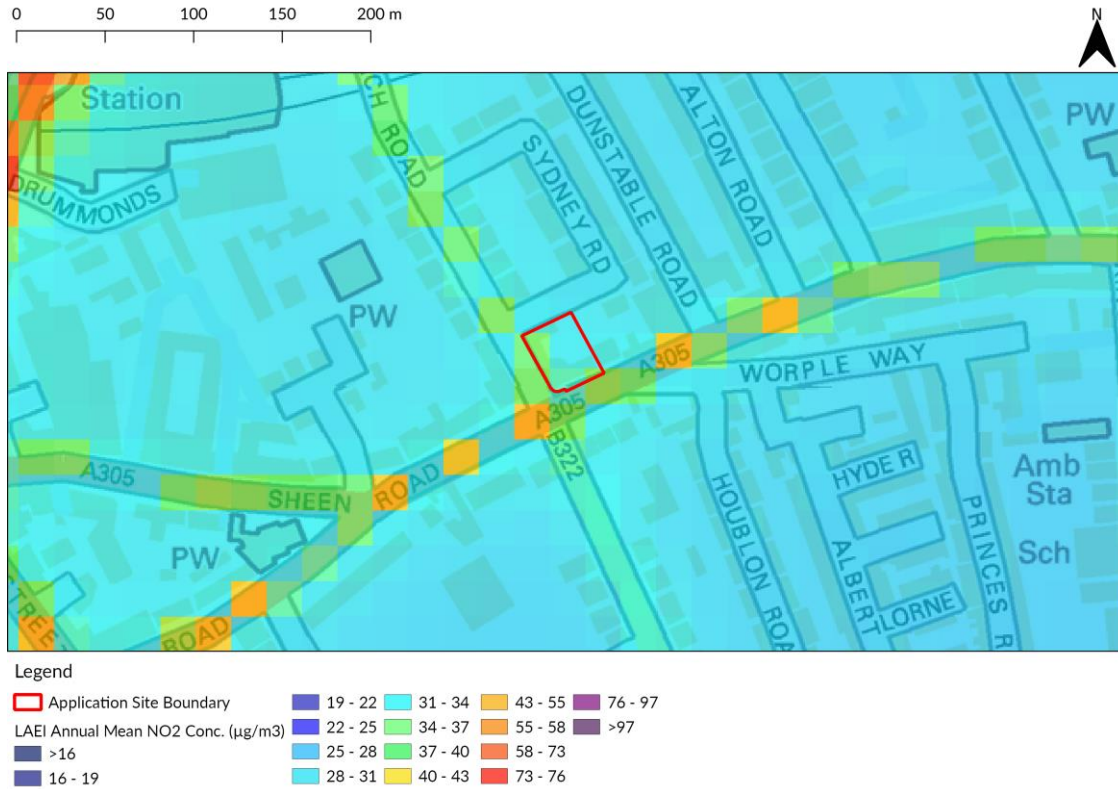


Figure 6: Modelled 2019 Annual Mean NO<sub>2</sub> Concentrations (GLA, 2019). Contains OS Data © Crown Copyright and Database rights 2022.

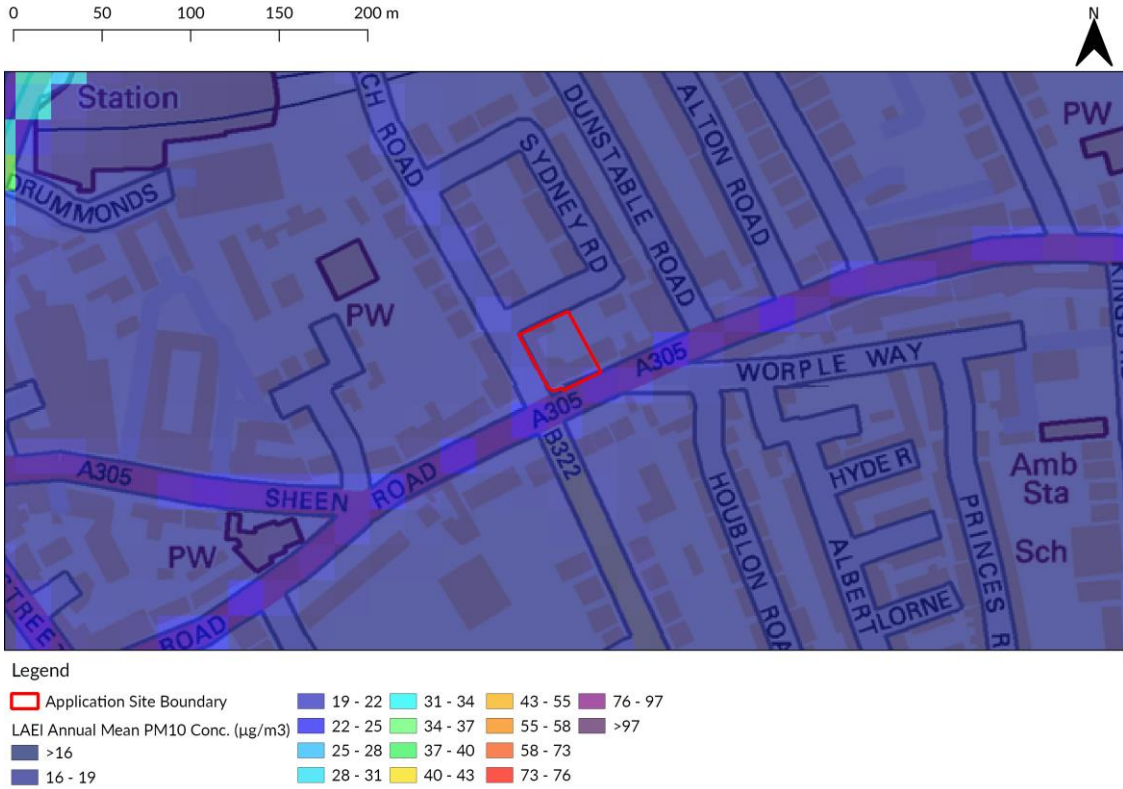


Figure 7: Modelled 2019 Annual Mean PM<sub>10</sub> Concentrations (GLA, 2019). Contains OS Data © Crown Copyright and Database rights 2022.

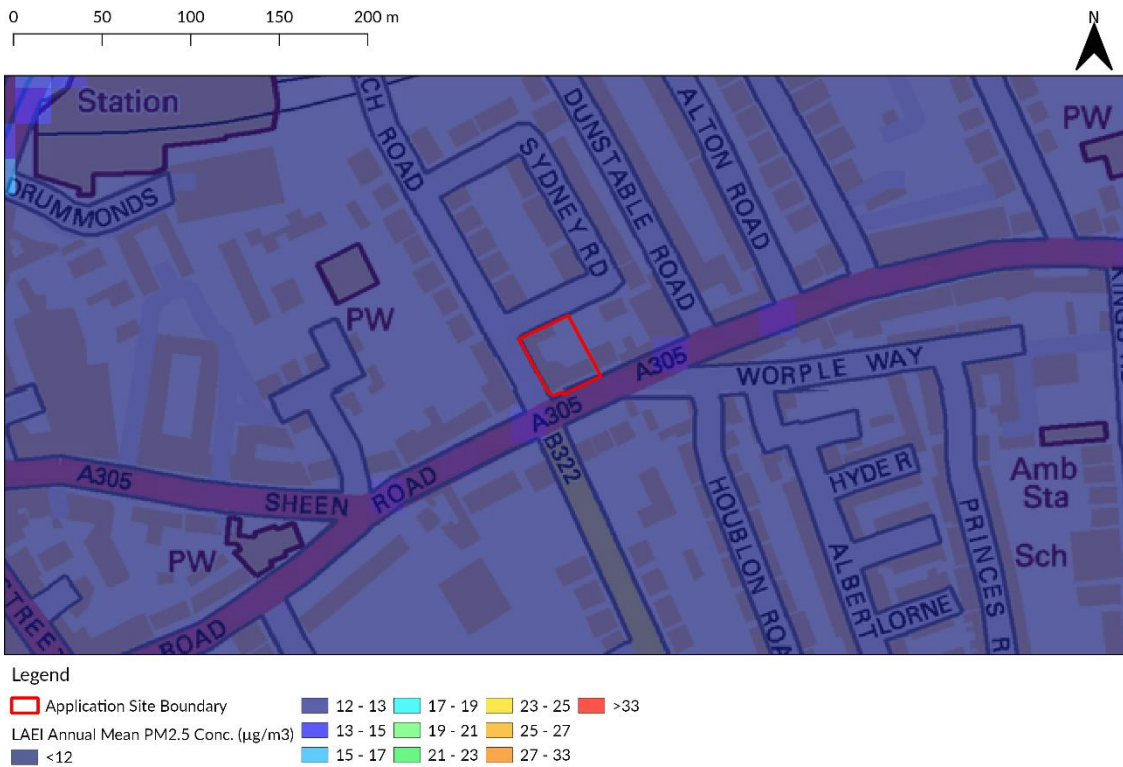


Figure 8: Modelled 2019 Annual Mean PM<sub>2.5</sub> Concentrations (GLA, 2019). Contains OS Data © Crown Copyright and Database rights 2022.

The worst-case concentrations of key pollutants have been taken from southern façade of the building, bounding Sheen Road (A305) in 2019 and are shown in Table 6 for the Application Site.

Table 6: Modelled 2019 annual mean concentrations of NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub>

Year	Pollutant Concentration - (µg/m <sup>3</sup> )		
	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
2019	37.8	20.4	11.9

Table 6 above shows that the 2019 LAEI modelled annual mean concentrations are below the annual mean AQOs. The NO<sub>2</sub> concentration is also below the WHO guideline for NO<sub>2</sub>. However, both the PM<sub>10</sub> and PM<sub>2.5</sub> modelled annual mean concentrations are in exceedance of the relevant WHO guidelines.

#### 4.7 Summary of Background Data.

The Application Site is located within Richmond AQMA and approximately 140 m to the southeast of an AQFA (Richmond Town Centre including Bridge Street).

Monitoring results from within LBRuT indicate that there have need exceedances of the AQOs and WHO guidelines for NO<sub>2</sub>, but not for PM<sub>10</sub> from 2016 onwards, except at HF5. PM<sub>2.5</sub> concentrations are not currently monitored in LBRuT.

No significant sources of air pollution from industrial/waste management sources have been identified within 2 km of the Application Site.

Defra concentrations are well below the relevant AQOs for all pollutants and also below the WHO guidelines for NO<sub>2</sub> and PM<sub>10</sub>, but not for PM<sub>2.5</sub>.

LAEI modelled annual mean concentrations are below the annual mean AQOs. However, both the PM<sub>10</sub> and PM<sub>2.5</sub> modelled concentrations are in exceedance of the relevant WHO guidelines.

## 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 50 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 Richmond Park, a site of special scientific interest (SSSI), located approximately 1 km to the south of the Application Site.

Therefore, an assessment of construction dust on ecological receptors can be screened out from this assessment but an assessment of construction dust at human receptors is required.

#### 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	Demolition activities are expected to be minimal, with the total demolition volume expected to be below 20,000 m <sup>3</sup> . As such, in line with IAQM guidance, the magnitude of dust emissions from demolition works will be small.
Earthworks	Small	The soil type is loamy <sup>30</sup> and earthworks activities are expected to be minimal, with the total area expected to be affected by earthworks below 2,500 m <sup>2</sup> . As such, in line with IAQM guidance, the magnitude of dust emissions from earthworks will be small.
Construction	Small	Construction activities are expected to be minimal, with the total construction volume expected to be below 25,000 m <sup>3</sup> . As such, in line with IAQM guidance, the magnitude of dust emissions from construction works will be small.
Trackout	Small	Trackout activities are expected to be minimal, and the number of construction phase vehicles will be below the IAQM/EPUK criterion. The unpaved road length is likely to be less than 50 m. As such, in line with IAQM guidance, the magnitude of dust emissions from trackout will 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<sub>10</sub>, 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.

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	<p>Within 20 m of the Application Site, there are between 1-10 residential dwellings which are classed as high sensitivity receptors and more than one commercial premise. Within 50 m of the Application site there are between 10-100 residential dwellings.</p> <p>Further commercial premises, nurseries, schools, and further residential dwellings within 350 m of the Application Site have also been considered.</p> <p>For trackout, the distances are measured from the side of the roads used by construction traffic. There are between 1-10 high sensitivity residential receptors within 20 m of the side of the roads, up to 50 m from the Application Site.</p>	Medium	Medium
Human Health	<p>Within 20 m of the Application Site, there are between 1-10 residential dwellings which are classed as high sensitivity receptors. However, the annual mean PM<sub>10</sub> concentrations at the closest automatic monitoring site to the Application Site was 15 µg/m<sup>3</sup> in 2019, as presented in Table 2. Additionally, the Defra predicted background concentration for PM<sub>10</sub> in the worst-case grid square in which the Application Site is located, is predicted to be 17 µg/m<sup>3</sup> in 2022 and 16.6 µg/m<sup>3</sup> in 2024.</p> <p>As the PM<sub>10</sub> concentrations are less than 24 µg/m<sup>3</sup>, the sensitivity of the area with respect to human health impacts is considered to be low.</p> <p>For trackout, the distances are measured from the side of the roads used by construction traffic. There are between 1-10 high sensitivity residential receptors within 20 m of the side of the roads, up to 50 m from the Application Site.</p>	Low	Low

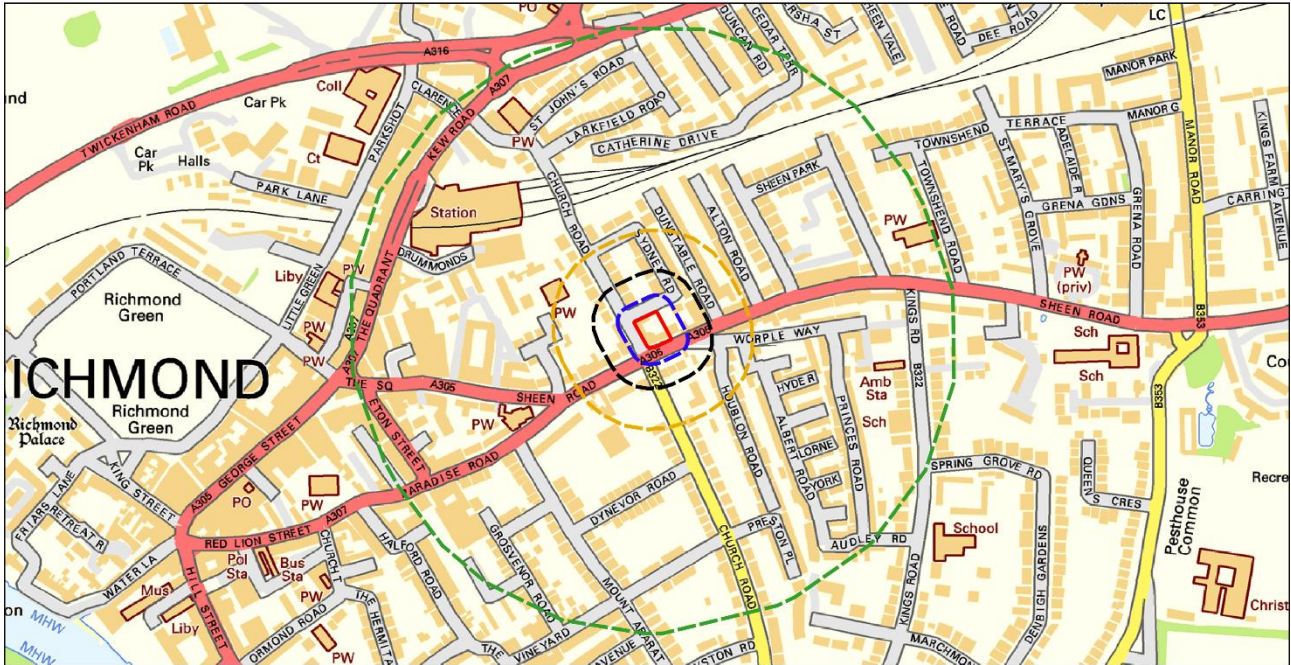
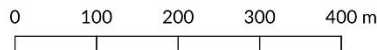
#### 5.1.4 Risk of Dust Impacts

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
Magnitude		Small	Small	Small	Small
Dust Soiling Impacts	Medium	Low Risk	Low Risk	Low Risk	Negligible
Human Health Impacts	Low	Negligible	Negligible	Negligible	Negligible





Legend

- Application Site Boundary
- 20m from Site
- 50m from Site
- 100m from Site
- 350m from Site

Figure 9: Distance band criteria from the Application Site boundary. Contains Ordnance Survey Data © Crown Copyright 2022.

**5.2 Construction Phase – Vehicular Pollutants.**

The Application Site is located within Richmond AQMA and therefore the lower screening criterion (i.e. 100 LDV and 25 HDV) would apply.

Information on traffic movements anticipated during construction works has been provided by Gardiner & Theobald within a Construction Management Plan<sup>31</sup>. Review of this document has shown that the peak number of vehicles anticipated during the construction phase is 17 HDVs per day and 5 LDVs per day. When converted to AADT, this will be below the EPUK and IAQM criterion. The duration of movements will also be short-term in nature and are not considered further within the context of this assessment. Therefore, in accordance with the criterion presented within EPUK and IAQM 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<sub>10</sub> and PM<sub>2.5</sub>), and NO<sub>x</sub>/NO<sub>2</sub>. 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. Within London the London Environment Strategy guidance<sup>12</sup> 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” as such emission from NRMM will be controlled at this Application Site.

However, IAQM guidance states that “Experience of assessing the exhaust emissions from on-site plant (also known as non-road mobile machinery or NRMM) and site traffic suggests that they are unlikely to make a significant impact on local air quality, and in the vast majority of cases they will not need to be quantitatively assessed.”

## 6. Operational Phase Assessment.

### 6.1 Road Traffic Emissions Screening Assessment.

The indicative criteria in the EPUK and IAQM guidance is a change of more than 100 AADT LDV trips and/or 25 AADT HDV trips per road link within an AQMA.

The Proposed Development will lead to a reduction in traffic related emissions. This is as a result of a decrease in trips associated with the Proposed Development in relation to its current former use as Richmond Inn and a reduction in the number of parking spaces provided on site. There is expected to be a net decrease of 171 trips associated with the Proposed Development, as advised by Vectos, the project's transport consultants. The impact of traffic emissions on local air quality is therefore considered insignificant and consequently a detailed assessment is not required.

In accordance with the EPUK and IAQM guidance, the impacts on air quality from operational phase traffic generation are considered to be not significant and have been screened out of the Air Quality Assessment.

### 6.2 Combustion Plant Screening Assessment.

The proposed energy strategy is all electric and will utilise a VRF electric heat pump for heating and cooling through FCUs. As no combustion sources are proposed during normal operation of the Proposed Development, 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.

### 6.3 Site Suitability.

This section presents a review of LBRuT monitoring data, Defra background concentrations, and LAEI modelled annual mean concentrations in the vicinity of the Application Site, for the purpose of identifying the suitability of the Application Site for use as a physiotherapy-led rehabilitation centre and identify any requirements for potential mitigation to be embedded into the Proposed Developments design.

As presented in Section 2 in line with LLAQM.TG(19)<sup>5</sup>, only the 1-hour mean AQO applies to the Proposed Development due to its proposed use as a physiotherapy-led rehabilitation centre. As such, this section considers the 1-hour mean NO<sub>2</sub> concentrations at the Application Site.

#### 6.3.1 Predicted 1-hour mean NO<sub>2</sub> Concentrations

A review of the annual mean NO<sub>2</sub> concentrations monitored at passive diffusion tube monitoring locations within 1 km of the Application Site, as well as a review of Defra background and LAEI modelled annual mean concentrations has been completed as part of the baseline review, with recent monitoring results, presented in Table 3.

The closest monitoring sites to the Application Site are the passive diffusion tube monitoring locations 41 and 44, both of which are located on Sheen Road/Paradise Road (A305), the same road as the Application Site. These passive diffusion tube monitoring locations are likely to represent worst-case NO<sub>2</sub> concentrations for the Application Site. 41 and 44 are kerbside monitors, whilst the majority of the Application Site is set back further from the main A-road. The AHU supplying external air to the building will be located on the roof. Pollutant concentrations decrease with distance from the pollutant source (in this case the A305). NO<sub>2</sub> concentrations will be lower at roof height than at ground level and this will therefore help to further improve the quality of intake air.

An annual mean concentration of 60 µg/m<sup>3</sup> or above is often used to indicate a possible exceedance of the 1-hour mean NO<sub>2</sub> AQO. The annual mean NO<sub>2</sub> concentrations at 41 and 44 have not been in exceedance of 60 µg/m<sup>3</sup> in any year between 2015 and 2019. As such, NO<sub>2</sub> concentrations at these passive diffusion tube monitoring locations and therefore at the Application Site, are likely to be below the 1-hour mean NO<sub>2</sub> AQO.

Furthermore, both the Defra background NO<sub>2</sub> concentrations for 2022 (the current year) and 2024 (the earliest anticipated opening year of the Proposed Development), and the LAEI modelled annual mean concentrations for

NO<sub>2</sub> for 2019, show that the predicted NO<sub>2</sub> concentrations in the locale of the Proposed Development are well below 60 µg/m<sup>3</sup>.

Therefore, NO<sub>2</sub> concentrations in the locale of the Proposed Development are considered to be below the 1-hour mean NO<sub>2</sub> AQO and the Application Site is considered suitable for use as a physiotherapy-led rehabilitation centre, without mitigation.

### 6.3.2 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 & IAQM 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 1-hour mean NO<sub>2</sub> AQO based upon a review of NO<sub>2</sub> monitoring data, Defra background concentrations, and LAEI modelled annual mean concentrations within the development locale;

As no exceedances of the considered AQO is 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’.

## 6.4 Air Quality Neutral Assessment

### 6.4.1 Buildings Emissions

The Proposed Development will be all-electric with no on-site combustion. Therefore, the total building emissions will be zero and under the buildings emissions benchmark. As there are no combustion processes under normal operation, the Proposed Development can be considered at least air quality neutral in relation to building emissions.

### 6.4.2 Transport Emissions

The input data for the calculation of the Total Benchmark Trip Rate is shown in Table 10.

Table 10: Calculation of Total Benchmark Trip Rate

Description		Value	Unit
A	Annual trip generation of the Proposed Development	16790	Trips per year
B	Benchmark Trip Rate for ‘Hotel’ Use- Outer London	6.9	Trips per year/m <sup>2</sup>
C	Floor Area for ‘Hotel’ Use	2580	m <sup>2</sup>
D = (B x C)	<b>Total Benchmark Trip Rate</b>	<b>17802</b>	<b>Trips per year</b>

The number of trips per year associated with the Proposed Development is 16790 trips/yr. The Total Benchmark Trip Rate for the Proposed Development is 17802 trips/yr. As such, the number of trips per year associated with the Proposed Development is less than the Total Benchmark Trip Rate and therefore the Proposed Development is considered air quality neutral with regard to transport emissions. As such, no mitigation is required.

## 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 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 LBRuT approve an Air Quality Dust Management Plan (AQDMP) prior to works commencing on site. Table 11 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), low risk measures have been applied as these represent the highest risk category determined in Table 9. This approach is consistent with the GLA guidance.

**Table 11: Mitigation Measures**

Issue	Mitigation Measure
Site Management	Display the name and contact details of person(s) accountable for air quality pollutant emissions and dust issues on the site boundary.
	Display the head or regional office contact information.
	Record and respond to all dust and air quality pollutant emissions complaints
	Make a complaints log available to the local authority when asked.
	Carry out regular site inspections to monitor compliance with air quality and dust control procedures, record inspection results, and make an inspection log available to the local authority when asked.
	Record any exceptional incidents that cause dust and air quality pollutant emissions, either on or off the site, and the action taken to resolve the situation is recorded in the log book.
	Increase the frequency of site inspections by those accountable for dust and air quality pollutant emissions issues when activities with a high potential to produce dust and emissions and dust are being carried out, and during prolonged dry or windy conditions.
Preparing and maintaining the site	Plan site layout: machinery and dust causing activities should be located away from receptors
	Erect solid screens or barriers around dust activities or the site boundary that are, at least, as high as any stockpiles on site.
	Fully enclosure 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 from site as soon as possible.
Operating vehicle/ machinery and	Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone
	Ensure all non-road mobile machinery (NRMM) comply with the standards set within this guidance.
	Ensure all vehicles switch off engines when stationary - no idling vehicles.

Issue	Mitigation Measure
	Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where possible.
	Impose and signpost a maximum-speed-limit of 10mph on surfaced haul routes 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 appropriate).
	Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).
Operations	Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.
	Ensure an adequate water supply on the site for effective dust/particulate matter mitigation (using recycled water where possible).
	Use enclosed chutes, conveyors and covered skips
	Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.
Waste management	Avoid bonfires and burning of waste materials.
	Reuse and recycle waste to reduce dust from waste materials.
Demolition	Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).
	Ensure water suppression is used during demolition operations.
	Avoid explosive blasting, using appropriate manual or mechanical alternatives.
	Bag and remove any biological debris or damp down such material before demolition.
Construction	Avoid scabbling (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.
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.
	Record all inspections of haul routes and any subsequent action in a site log book.
	Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).

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 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 Control of Dust and Emissions guidance, all NRMM would need to adhere to the emissions standards for NO<sub>2</sub> and PM<sub>10</sub> 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 Guidance. Therefore, mitigation measures such as a sustainable travel plan are not considered to be required.

#### **7.2.2 Baseline Site Suitability Review**

A review of LBRuT monitoring data, Defra background concentrations and LAEI modelled annual mean concentrations in the locale of the Application Site, indicates no likely exceedance of the 1-hour mean NO<sub>2</sub>.

As no exceedance of the considered AQO is predicted, this follows the 1<sup>st</sup> hierarchy principle of the IAQM guidance to 'prevent and avoid' exposure<sup>32</sup>. Therefore, no embedded mitigation into the Proposed Development design (in the form of filtration to the mechanical ventilation, for example) is required.

#### **7.2.3 Quality Neutral Assessment**

The Proposed Development is air quality neutral in regard to both building emissions and transport emissions in line with the LPG Air Quality Neutral Consultation Draft<sup>17</sup>. 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 physiotherapy-led rehabilitation centre, Richmond, TW9 1UG.

The findings of the assessment are as follows:

- The baseline assessment has shown that the Application Site is located within Richmond AQMA. Monitoring results from within LBRuT indicate that there have need exceedances of the AQOs and WHO guidelines for NO<sub>2</sub>, but not for PM<sub>10</sub> in recent years. PM<sub>2.5</sub> concentrations are not currently monitored in LBRuT. Defra concentrations are well below the relevant AQOs for all pollutants and also below the WHO guidelines for NO<sub>2</sub> and PM<sub>10</sub>, but not for PM<sub>2.5</sub>. LAEI modelled annual mean concentrations are below the annual mean AQOs. However, both the PM<sub>10</sub> and PM<sub>2.5</sub> modelled concentrations are in exceedance of the relevant WHO guidelines.
- 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 Proposed Development will lead to a reduction in traffic related emissions. This is as a result of a decrease in trips associated with the Proposed Development in relation to its current former use as Richmond Inn. This was advised by Vectos, the project’s transport consultants. The traffic generated has been screened against the criteria set out in the EPUK and IAQM planning guidance to determine the need for a detailed assessment. The trip generation showed that the potential impact of additional road traffic on local air quality is considered insignificant both independently and cumulatively, and a detailed assessment is not required;
- The proposed energy strategy is all electric and will utilise a VRF electric heat pump for heating and cooling through FCUs. As no combustion sources are proposed during normal operation of the Proposed Development, 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 emissions and transport emissions in line with the LPG Air Quality Neutral Consultation Draft. As such, no mitigation is required; and
- A baseline Site Suitability Assessment has been undertaken to assess the suitability of the Application Site for the proposed use. The 1-hour mean NO<sub>2</sub> AQO is unlikely to be exceeded at the Application Site. As such, the Application Site is considered suitable for its proposed use as a physiotherapy-led rehabilitation centre and no mitigation is 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 Richmond Local Plan.

## 9. Glossary of Terms.

AADT	Annual Average Daily Traffic
AHU	Air Handling Unit
AQAP	Air Quality Action Plan
AQDMP	Air Quality Dust Management Plan
AQFA	Air Quality Focus Area
AQMA	Air Quality Management Area
AQO	Air Quality Objective
AURN	Automatic Urban and Rural Network
BEB	Building Emissions Benchmark
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
LBRuT	London Borough of Richmond upon Thames
LES	London Environment Strategy
LLAQM.TG	London Local Air Quality Management Technical Guidance
LDV	Light Duty Vehicles ( $\leq$ 3.5 tonnes gross vehicle weight)
LPG	London Plan Guidance
$\mu\text{g}/\text{m}^3$	Micrograms per cubic metre
MAQS	Mayor's Air Quality Strategy
MVHR	Mechanical Ventilation with Heat Recovery
$\text{NO}_2$	Nitrogen dioxide
$\text{NO}_x$	Nitrogen oxides (taken to be $\text{NO}_2 + \text{NO}$ )
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
$\text{PM}_{10}$	Particulate matter with an aerodynamic diameter less than 10 micrometres
$\text{PM}_{2.5}$	Particulate matter with an aerodynamic diameter less than 2.5 micrometres
PPG	Planning Practice Guidance
SPD	Supplementary Planning Document
SPG	Supplementary Planning Guidance
SSSI	Site of Special Scientific Interest
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
WHO	World Health Organisation



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## Appendix 1 - EHO Consultation.

**From:** Carol Lee (Regulatory Services) <CarolM.Lee@merton.gov.uk>  
**Sent:** 29 April 2022 14:51  
**To:** Ellie Drage  
**Subject:** RE: Hoare Lea Air Quality Assessment

You don't often get email from carolm.lee@merton.gov.uk. [Learn why this is important](#)

Dear Ellie

Thank you for your email.

The below approach looks fine.

Neither 2020, nor 2021 are considered "normal" years for AQ due to changes in traffic and behaviour with COVID-19, so most consultants seem to be assessing using 2019 data, for worst case scenario, and then citing 2020 data.

This site lies on the A305, one of the main approach roads into Richmond town centre, where levels exceed UK limit values for NO<sub>2</sub>. It lies within the LBRUT AQMA and just outside Richmond town centre AQFA. Sites 26, 42, 17, 43, Rut2 are all close by. Non combustion for heating/cooling is very welcome. Emissions from transport would be of concern and a robust travel plan should be provided.

LBRUT's main roadside site is at Castlenau, sited on the main road to Hammersmith Bridge, which has been closed to all vehicles since 10<sup>th</sup> April 2019. Although it is technically a roadside site, in practice it has become more of a background site as the road is effectively a dead end. There are other roadside sites nearby in Wandsworth and Hammersmith which may be more appropriate to use.

Kind regards

Carol

Carol Lee

Principal Environmental Health Pollution Practitioner (Air Quality)

Regulatory Services Partnership

London Boroughs of Richmond upon Thames, Merton and Wandsworth

1<sup>st</sup> Floor Civic Centre, 44 York Street, Twickenham TW1 3BZ

Tel 07917 307 206

e-mail: [carol.lee@merton.gov.uk](mailto:carol.lee@merton.gov.uk)

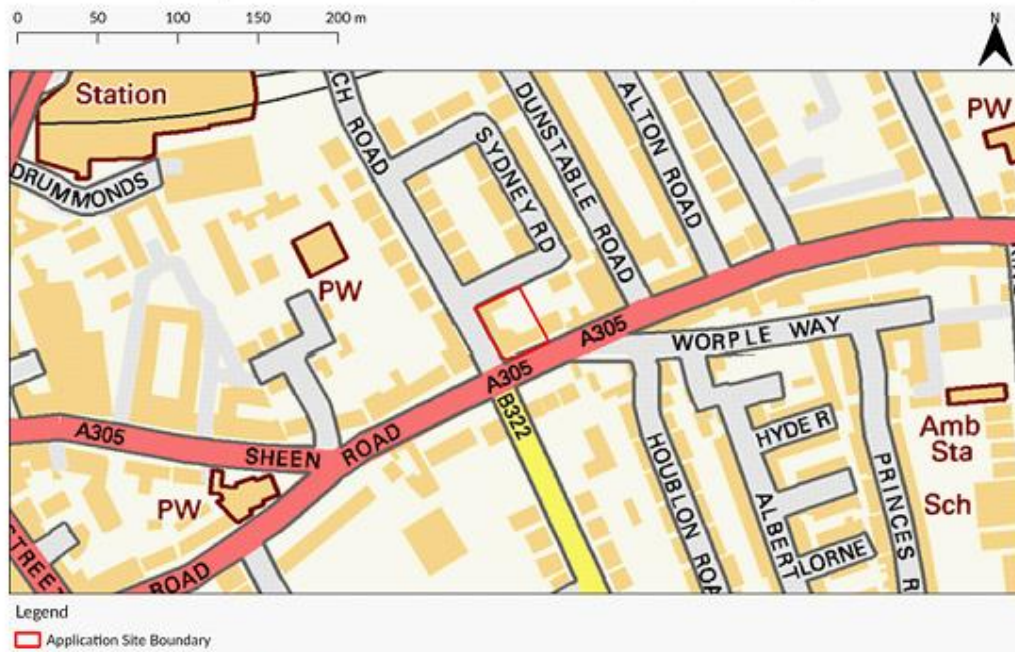


**From:** Ellie Drage  
**Sent:** 29 April 2022 14:06  
**To:** carol.lee@merton.gov.uk  
**Cc:** Kathryn Woolley  
**Subject:** Hoare Lea Air Quality Assessment

Dear Carol,

Hoare Lea have been instructed to undertake an Air Quality Assessment (AQA) to support the planning application for the proposed redevelopment of Richmond Inn hotel, 50-56 Sheen Road, Richmond TW9 1UG.

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):



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

- A baseline assessment will be undertaken using the most recent Annual Status Report and LAEI background maps from London Borough of Richmond upon Thames (LBRuT).
- Monitoring data for 2020 is not considered representative of normal conditions due to lockdowns imposed by the UK Government due to COVID-19, and as such will be included in the report for information only.
- DEFRA's background and the LAEI pollution maps will be used to establish background concentrations in the area.
- An assessment of the construction impacts on air quality and dust will be undertaken using the GLA methodology, in compliance with 'The Control of Dust and Emissions During Construction and Demolition'.
- We have had confirmation from the appointed transport consultants that the net change in traffic as a result of the Proposed Development will not exceed the indicative criteria set out in the EPUK/IAQM guidance. As such, the net change in traffic will not be greater than 100 AADT LDV and/or 25 AADT HDV. Therefore, it is not considered necessary to undertake a detailed assessment of road traffic impacts at existing receptors in the vicinity and a screening assessment will be undertaken to provide evidence of the traffic figures.
- A qualitative assessment of site suitability will be undertaken using LBRuT monitoring data, LAEI background maps, and Defra background maps to determine the suitability of the site for its proposed use.
- An air quality neutral assessment will be carried out in line with the criteria set out in the London Plan Guidance Air Quality Neutral Consultation Draft.
- Energy provision for the Proposed Development will be all-electric and will not involve any combustion processes. As such, there will be no air quality impacts.
- Any mitigation recommended as a result of the assessment will be noted.

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 on the number below.

Many thanks,

**Ellie Drage**  
Graduate Air Quality Consultant

DDI +44 20 3668 7256  
Tel +44 20 3668 7100  
Email [elliedrage@hoarelea.com](mailto:elliedrage@hoarelea.com)



## Appendix 2 - Professional Experience.

### **Chris Rush (Hoare Lea), BSc (Hons), MSc, PG Dip Acoustics, CEnv, MIOA, MIEMA, MIEEnvSc, MIAQM**

Chris is an Associate Director Air Quality Consultant with Hoare Lea. He is a Chartered Environmentalist, a Member of the Institute of Acoustics, a Full Member of the Institute of Environmental Management and Assessment, a Member of the Institution of Environmental Sciences and a Full Member of the Institute of Air Quality Management (IAQM).

He has a diverse portfolio of experience and has worked on a range of projects from initial site feasibility, through planning and development to construction and operation. Chris's expertise covers planning, noise and air quality, specifically in relation to residential developments, industrial fixed installations such as waste management centres and transportation environmental impact on developments including air traffic. Chris is involved in the testing and assessment of the impact of indoor air quality and how building design contributes to this. He also is a member of Chartered Institute of Building Services Engineers (CIBSE) Air Quality Working Group and a committee member of the IAQM.

### **Kathryn Woolley (Hoare Lea), BSc (Hons), AMIEEnvSc, MIAQM**

Kathryn is an Associate of the Air Quality team with Hoare Lea. She is an Associate Member of the Institution of Environmental Sciences and a Full Member of the Institute of Air Quality Management.

She has a diverse portfolio of experience and has worked on a range of projects from initial site feasibility, through planning and development to construction and operation. Kathryn's expertise covers planning, and air quality, specifically in relation to residential developments, industrial fixed installations such as district heating networks. Kathryn has completed over 50 EIA in the past 8 years throughout the UK and abroad including; St Johns Masterplan in Manchester (residential led), Leicester City Football club training facility north of Leicester (sports use), 1-5 Grosvenor Place, Westminster (mixed use residential, retail and hotel site), and Chestnut Avenue in Eastleigh (residential and community use).

### **Ellie Drage (Hoare Lea), MEarthSci, AMIEEnvSc, AMIAQM**

Ellie is a Graduate Air Quality Consultant with Hoare Lea. She graduated from the University of Oxford with an Earth Sciences degree focusing on Climate and Ocean Systems. Ellie's MEarthSci project involved reconstructing ocean circulation, climate, and the carbon cycle approximately 100 million years ago, to better understand Earth's past environment.

Ellie has worked on a range of projects across various sectors such as residential, industrial and office. She has undertaken outdoor air quality monitoring and has experience preparing air quality screening assessments for planning and indoor air quality plans for BREEAM. Ellie's interests lie in the mitigation of pollution and air quality control.



**CHRIS RUSH**

ASSOCIATE DIRECTOR

+44 161 672 7132

chrisrush@hoarelealea.co.uk

HOARELEA.COM

Western Transit Shed  
12-13 Stable Street  
London  
N1C 4AB  
England

