



# PRIESTS BRIDGE, EAST SHEEN RICHMOND

## AIR QUALITY ASSESSMENT REQUIREMENTS

PROJECT NUMBER: P1591

DOCUMENT REF: P1591-AQA

Revision	Date	Details	Authored	Checked
R1	30.01.2019	Issued for information	TO	JF
R2	18.07.2022	Issued for information	WP 'Site Overview' Revision	

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## EXECUTIVE SUMMARY

QuinnRoss Consultants Ltd was commissioned by Wimshurst Pelleriti Ltd to provide an outline performance scope for an Air Quality Assessment to be provided, in support of a planning application for a proposed mixed use residential and commercial development at Priests Bridge, East Sheen, Richmond.

The proposals comprise the redevelopment of the site as detailed in the introduction below.

It is anticipated that an Air Quality Assessment will be required to quantify pollution levels across the site, consider its suitability for the proposed end-use and assess potential impacts as a result of the development. An Air Quality Assessment will therefore be required to determine baseline conditions, consider location suitability for the proposed end-use and provide consideration of potential effects as a result of the proposals.

Potential construction phase air quality impacts from fugitive dust emissions were assessed as a result of demolition earthworks, construction and track-out activities. It is considered that the use of good practice control measures would provide suitable mitigation for a development of this size and nature and reduce potential impacts to an acceptable level.

Dispersion modelling will be undertaken in order to quantify pollutant concentrations at the site and to assess the potential for future users to be exposed to poor air quality. This is to form the basis for the mitigation techniques required to protect future users from elevated concentrations.

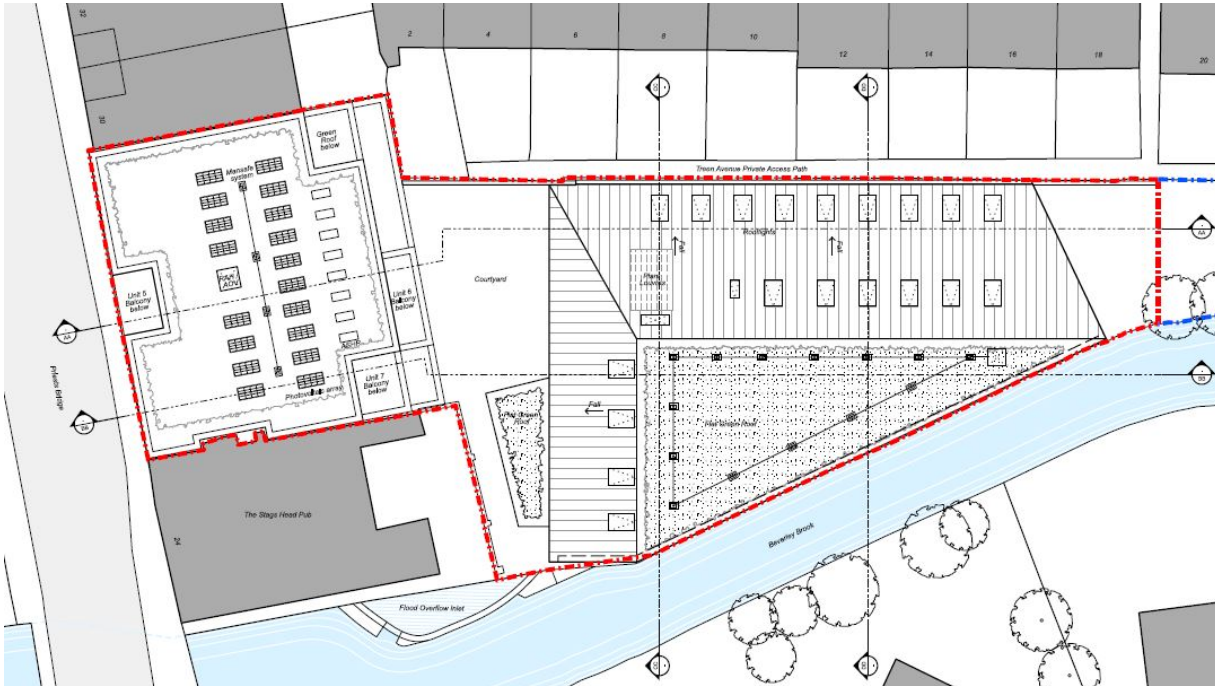
The London Plan states that new developments must be considered Air Quality Neutral. Pollutant emissions associated with traffic generated by the development were compared to relevant benchmarks. This indicates that transport emissions from the proposals are below the benchmarks and as such, no further action will be required to tackle excess development emissions.

Based on the assessment and its expected results, the site is low risk to not be considered suitable for the proposed end use subject to the inclusion of relevant mitigation measures.

## SITE OVERVIEW

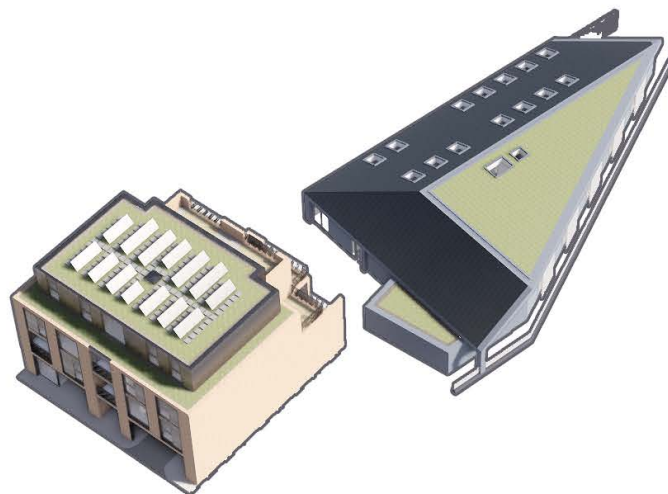
Quinn Ross Consultants was commissioned by Wimshurst Pelleriti to develop an outline scope for the noise quality assessment for the proposed Priests Bridge development that would demonstrate how it will provide any air quality mitigation techniques in order to comply with regulations as set by national and local policy.

The site is located on 26-28 Priests Bridge, East Sheen, in the London Borough of Richmond. See site image below:



*Figure 3: Site plan of site*

The new development is expected to comprise 9 residential units, mainly one and two-bedroom apartments at 3 storeys. There will also be 649 m<sup>2</sup> of commercial space, in the form of a 94m<sup>2</sup> unit in the front building and a separate larger unit at the rear consisting of a 555 m<sup>2</sup> unit all fitted out to a shell & core level.



*Figure 4: Architect's model image of scheme*

## LEGISLATION AND POLICY

### European Legislation

European Union (EU) air quality legislation is provided within Directive 2008/50/EC, which came into force on 11<sup>th</sup> June 2008. This Directive consolidated previous legislation which was designed to deal with specific pollutants in a consistent manner and provided new air quality objectives for particulate matter with an aerodynamic diameter of less than 2.5µm (PM<sub>2.5</sub>). The consolidated Directives include:

- Directive 99/30/EC - the First Air Quality "Daughter" Directive - sets ambient Air Quality Limit Values (AQLVs) for NO<sub>2</sub>, oxides of nitrogen (NO<sub>x</sub>), sulphur dioxide, lead and PM<sub>10</sub>;
- Directive 2000/69/EC - the Second Air Quality "Daughter" Directive - sets ambient AQLVs for benzene and carbon monoxide; and
- Directive 2002/3/EC - the Third Air Quality "Daughter" Directive - seeks to establish long-term objectives, target values, an alert threshold and an information threshold for concentrations of ozone in ambient air.

The fourth daughter Directive was not included within the consolidation and is described as:

- Directive 2004/107/EC - sets health-based limits on polycyclic aromatic hydrocarbons, cadmium, arsenic, nickel and mercury, for which there is a requirement to reduce exposure to as low as reasonably achievable.

### UK Legislation

The Air Quality Standards (Amendment) Regulations (2016) came into force on 31st December 2016. These Regulations amend the Air Quality Standards Regulations 2010 and transpose the EU Directive 2008/50/EC into UK law. AQLVs were published in these regulations for 7 pollutants, as well as Target Values for an additional 6 pollutants.

Part IV of the Environment Act (1995) requires UK government to produce a national Air Quality Strategy (AQS) which contains standards, objectives and measures for improving ambient air quality. The most recent AQS was produced by the Department for Environment, Food and Rural Affairs (DEFRA) and published in July 2007<sup>1</sup>. The AQS sets out AQOs that are maximum ambient pollutant concentrations that are not to be exceeded either without exception or with a permitted number of exceedances over a specified timescale. These are generally in line with the AQLVs, although the requirements for compliance vary slightly.

Table 1 below presents the AQO's for pollutants considered within this assessment.

Pollutant	Air Quality Objective	
	Concentration (µg/m <sup>3</sup> )	Averaging Period
NO <sub>2</sub>	40	Annual mean
	200	1-hour mean; not to be exceeded more than 18 times a year
PM <sub>10</sub>	40	Annual mean
	50	24-hour mean; not to be exceeded more than 35 times a year
PM <sub>2.5</sub>	25	Annual mean

**Table 1: AQO's considered**

Table 2 below summarises the advice provided in DEFRA guidance LAQM (TG16)<sup>2</sup> on where the AQOs for pollutants considered to apply for the main report.

Averaging Period	Objectives Should Apply At	Objectives Should Not Apply At
Annual mean	All locations where members of the public might be regularly exposed Building façades of residential properties, schools, hospitals, care homes etc	Building façades of offices or other places of work where members of the public do not have regular access Hotels, unless people live there as their permanent residence Gardens of residential properties Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term
24-hour mean	All locations where the annual mean objective would apply, together with hotels. Gardens of residential properties	Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term
1-hour mean	All locations where the annual mean and 24-hour mean objectives apply. Kerbside sites (for example, pavements of busy shopping streets) Those parts of car parks, bus stations and railway stations etc which are not fully enclosed, where members of the public might reasonably be expected to spend one hour or more Any outdoor locations where members of the public might reasonably be expected to spend one hour or longer	Kerbside sites where the public would not be expected to have regular access

**Table 2: DEFRA guidance advice**

<sup>2</sup> Local Air Quality Management Technical Guidance 2016 LAQM (TG16), DEFRA, 2016.

## Local Air Quality Management

Under Section 82 of the Environment Act (1995) (Part IV) Local Authorities (LAs) are required to periodically review and assess air quality within their area of administration under the system of Local Air Quality Management (LAQM). This review and assessment of air quality involves considering present and likely future air quality against the AQOs. If it is predicted that levels at sensitive locations where members of the public are regularly present for the relevant averaging period are likely to be exceeded, the LA is required to declare an AQMA. For each AQMA the LA is required to produce an Air Quality Action Plan (AQAP), the objective of which is to reduce pollutant concentrations in pursuit of the AQOs.

## Dust

The main requirements with respect to dust control from industrial or trade premises not regulated under the Environmental Permitting (England and Wales) Regulations (2018) are those provided in Section 79 of Part III of the Environmental Protection Act (1990). The Act defines nuisance as:

- *"any dust, steam, smell or other effluvia arising on industrial, trade or business premises and being prejudicial to health or a nuisance."*

Enforcement of the Act, in regard to nuisance, is currently under the administration of the local Environmental Health Department, whose officers are deemed to provide an independent evaluation of nuisance. If the LA is satisfied that a statutory nuisance exists, or is likely to occur or happen again, it must serve an Abatement Notice under Part III of the Environmental Protection Act (1990). Enforcement can insist that there be no dust beyond the boundary of the works. The only defence is to show that the process to which the nuisance has been attributed and its operation are being controlled according to best practice measures.

## **National Planning Policy**

### **National Planning Policy Framework**

The National Planning Policy Framework (NPPF) was published on 24<sup>th</sup> July 2018 and sets out the Government's core policies and principles with respect to land use planning, including air quality. The document includes the following considerations which are relevant to this assessment:

*Preventing both new and existing development from contributing to or 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.*

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

The implications of the NPPF and the draft NPPF have been considered throughout this assessment.

### **National Planning Practice Guidance**

The National Planning Practice Guidance (NPPG) web-based resource was launched by the Department for Communities and Local Government on 6th March 2014 to support the NPPF and make it more accessible. The relevant air quality sections are highlighted below:

- Paragraph 001 states that: "Defra carries out an annual national assessment of air quality using modelling and monitoring to determine compliance with EU Limit Values" and "It is important that the potential impact of new development on air quality is taken into account, where the national assessment indicates that relevant limits have been exceeded or are near the limit". The role of Local Authorities under LAQM are stated and that Air Quality Action Plans should "identify measures that will be introduced in pursuit of the objectives"
- Paragraph 005 states that "Whether or not 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 generate air quality impact in an area where air quality is known to be poor. They could also arise where the

development is likely to adversely impact upon the implementation of air quality strategies and action plans and/or, in particular, lead to a breach of EU legislation"

- Paragraph 007 states that "Assessments should be proportional to the nature and scale of development proposed and the level of concern about air quality". In terms of mitigation, it states that "Mitigation options where necessary will be location specific, will depend on the proposed development and should be proportionate to the likely impact"
- Paragraph 009 shows a flow chart highlighting how the assessment of air quality impacts should fit into the development management process. It makes it clear that air quality impact risks, AQLVs and AQOs should be considered in the decision-making process.

These are to be reviewed and the relevant guidance considered as necessary throughout the undertaking of the detailed assessment.

## **METHODOLOGY**

The proposed development has the potential to cause air quality impacts during the construction and operational phases in addition to exposing future site users to elevated pollution levels. These issues are to be assessed in accordance with the following methodology.

### **Construction Phase Assessment**

There is the potential for fugitive dust emissions to occur as a result of construction phase activities. These have been assessed in accordance with the methodology outlined within the Institute of Air Quality Management (IAQM) document 'Guidance on the Assessment of Dust from Demolition and Construction'<sup>14</sup>.

Activities on the proposed construction site have been divided into four types to reflect their different potential impacts. These are:

- Demolition Earthworks
- Construction
- Trackout

The potential for dust emissions was assessed for each activity that is likely to take place and considered three separate dust effects:

- Annoyance due to dust soiling
- Harm to ecological receptors
- The risk of health effects due to a significant increase in exposure to PM.

### **Operational Phase Assessment**

#### **Future Exposure**

The proposed development includes sensitive land uses and is located within an AQMA and in close proximity to the local highway network. As such, the proposals have the potential to introduce new receptors into an area of existing poor air quality. Detailed dispersion modelling was therefore undertaken to quantify NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> concentrations across the site and determine suitability for the proposed end-use.



The results of the dispersion modelling assessment were compared against the Air Pollution Exposure Criteria (APEC) contained within the London Councils Air Quality and Planning Guidance<sup>5</sup> from the London Air Pollution Planning and the Local Environment (APPLE) working group.

### **Air Quality Neutral**

An assessment is to be undertaken to compare benchmark emissions with the proposed site use emissions in accordance with the methodology outlined within the Greater London Authority (GLA) 'Air Quality Neutral Planning Support GLA 80371'.