

Air Quality Assessment				
23 Ravenshaw Street, Camden				
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1 Introduction

1.1. Proposed Development

1.1.1 Air Quality Assessments Ltd (AQA) has been commissioned by Mr Chris Taylor to undertake an air quality assessment for a proposed residential development at 23 Ravenshaw Street, London, NW6 1NP. The proposed development will demolish an existing building and construct a new residential apartment block. The application site location is shown in **Figure 1**.



Figure 1: Application Site Location

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1.2. Scope of Assessment

- 1.2.1 This report describes the existing air quality conditions in proximity to the site and considers the effect of the development on local air quality and existing air quality on new receptors at the development. The main air pollutants of concern related to road traffic are nitrogen dioxide (NO₂) and fine particulate matter (PM₁₀ and PM_{2.5}). There is also a risk that emissions from diesel locomotives on an adjacent railway line may affect the proposed development.
- 1.2.1 There is the potential for construction activities to impact upon existing properties. The main pollutants of concern related to construction activities are dust and PM₁₀.
- 1.2.2 The assessment has been prepared taking into account all relevant local and national guidance and regulations.



- 1.2.3 The proposed development would remove all car parking spaces at the application site; therefore, in accordance with the London Plan Air Quality Neutral (AQN) Guidance, the development is AQN with regards transport emissions (GLA, 2023).
- 1.2.4 The proposed development is classed as a minor development. Individual gas boilers with NOx emissions rated at less than 40mg/kWh will be installed at the proposed dwellings; therefore, in accordance with the AQN simplified procedure for minor developments, the proposed development would meet the building emissions benchmark for building emissions.
- 1.2.5 The references and a glossary of common air quality terminology used in this assessment are shown in **Section 9** and **Section 10** respectively.



2 Air Quality Legislation and Policy

2.1. Air Quality Legislation

- 2.1.1 The Air Quality Standards Regulations 2010 (as amended) set legally binding limit values for concentrations of major air pollutants in outdoor air that impact public health, including NO₂, PM₁₀ and PM_{2.5} (The Stationary Office, 2010). 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. The limit values for PM₁₀ and NO₂ applied from 2005 and 2010 respectively, whereas the PM_{2.5} limit value applied from 2020.
- 2.1.2 Part IV of The Environment Act 1995, as amended by the Environment Act 2021, requires the UK Government to prepare a national Air Quality Strategy. A new Air Quality Strategy for England was published in April 2023 (Defra, 2023a). The Air Quality Strategy sets out the actions that Defra expects local authorities to take in support of long-term air quality goals, including new PM_{2.5} targets, and provides a framework to enable local authorities to make the best use of their powers and make improvements for their communities.
- 2.1.3 The strategy sets out air quality standards and objectives intended to protect human health and the environment. Standards are the concentrations of pollutants in the atmosphere, below which there is a minimum risk of health effects or ecosystem damage; they are set with regard to scientific and medical evidence. Objectives are the policy targets set by the Government, taking account of economic efficiency, practicability, technical feasibility and timescale, where the standards are expected to be achieved by a certain date. The Government has also published a Clean Air Strategy, which provides an overview of the actions that the government will take to improve air quality (Defra, 2019). The actions in the Clean Air Strategy focus on emissions from transport, the home, farming, and industry.
- 2.1.4 The Air Quality Strategy also describes the system of Local Air Quality Management (LAQM), which was introduced in Part IV of the Environment Act 1995. LAQM requires every local authority to carry out regular review and assessments of air quality in its area. Where an objective has not been, or is unlikely to be achieved, the local authority must declare an Air Quality Management Area (AQMA) and prepare an action plan which sets out appropriate measures to be introduced in pursuit of the objectives. PM_{2.5} is not included in the LAQM framework; however, the government expects all local authorities to effectively use their powers to reduce PM_{2.5} emissions from the sources which are within their control.
- 2.1.5 The objectives for NO₂ and PM₁₀, as prescribed by the Air Quality (England) Regulations 2000 and the Air Quality (England) (Amendment) Regulations 2002, are shown in **Table 1** (The Stationary Office, 2000; The Stationary Office, 2002). The objectives for NO₂ and PM₁₀ are the same as the limit values, but with differing compliance dates. The objectives for PM₁₀ and NO₂ were to have been achieved by 2004 and 2005 respectively and continue to apply in all future years thereafter.
- 2.1.6 The air quality limit value for PM_{2.5} is also shown in **Table 1**. The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 set out two legally



binding targets for PM_{2.5}, with interim targets for each set out in the Environmental Improvement Plan 2023 (The Stationery Office, 2023; Defra, 2023b). The PM_{2.5} targets are:

- 10µg/m³ annual mean concentration PM_{2.5} nationwide by 2040, with an interim target of 12µg/m³ by January 2028; and
- 35% reduction in average population exposure by 2040, with an interim target of a 22% reduction by January 2028, both compared to a 2018 baseline.

Pollutant	Concentration Measured As	Objective/Limit Value		
NO2	1-hour Mean	200 μg/m ³ not to be exceeded more than 18 times a year		
	Annual Mean	40 μg/m ³		
PM ₁₀	24-hour Mean	50 μg/m ³ not to be exceeded more than 35 times a year		
Annual Mean		40 μg/m ³		
PM _{2.5}	Annual Mean	20 μg/m³		

Table 1: The Objectives for NO₂ and PM₁₀ and the PM_{2.5} Limit Value

2.1.7 The objectives apply at locations where members of the public are likely to be regularly present and are likely to be exposed for a period of time appropriate to the averaging period of the objective. Examples of where the objectives should apply are provided in the London Local Air Quality Management Technical Guidance (Mayor of London, 2019). The annual mean NO₂ and PM₁₀ objectives should apply at the building façades of residential properties, schools, hospitals, care homes etc.; they should not apply at the building façades of places of work, hotels, gardens or kerbside sites. The 24-hour mean PM₁₀ objective should apply at all locations where the annual mean objective applies, as well as the gardens of residential properties and hotels. The 1-hour mean NO₂ objective should apply at all locations where the annual and 24-hour mean objectives apply, as well as at kerbside sites where the public have regular access, e.g., the pavements of busy shopping streets.

2.2. Planning Policy

National Policies

2.2.1 The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how these should be applied (Department for Levelling Up, Housing and Communities, 2023). It. It provides a framework within which locally prepared plans for development can be produced. At Paragraph 8c, the NPPF states that the purpose of the planning system is to contribute to the achievement of sustainable development and includes an overarching environmental objective:

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



2.2.2 With regard to environmental impacts from traffic, at Paragraph 104 the NPPF states that:

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

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

2.2.3 The NPPF also states at Paragraph 174 that:

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

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

2.2.4 The NPPF goes on to state at 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."

2.2.5 With specific reference to air quality, the NPPF states at Paragraph 186 that:

"Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. 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."

2.2.6 The NPPF also includes the following statement at 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."



2.2.7 The NPPF is supported by Air Quality national Planning Practice Guidance (nPPG) (Department for Levelling Up, Housing and Communities, 2019). The PPG states that:

"Defra carries out an annual national assessment of air quality using modelling and monitoring to determine compliance with relevant Limit Values. 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, or where the need for emissions reductions has been identified."

2.2.8 The PPG goes on to state that:

"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."

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

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

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

"Mitigation options will need to be locationally specific, will depend on the proposed development and need to be proportionate to the likely impact."

2.2.11 The PPG makes clear that:

"... dust can also be a planning concern, for example, because of the effect on local amenity."

Regional Policies

2.2.12 The London Plan sets out the spatial development strategy for London and presents a London-wide policy framework, including Policy SI1 Improving Air Quality, which states (GLA, 2021):

"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."

- 2.2.13 Guidance on the assessment of construction dust impacts is set out in the London Plan Supplementary Planning Guidance (SPG) on The Control of Dust and Emissions During Construction and Demolition (GLA, 2014).
- 2.2.14 Guidance on quantifying and assessing air quality performance against relevant AQN benchmarks is provided in the London Plan AQN Guidance (GLA, 2023).
- 2.2.15 The Mayor's London Environment Strategy sets out objectives, policies and proposals that will improve air quality in London, with the aim of reducing exposure of Londoners to harmful pollution, achieving compliance with the EU limit values as soon as possible and establishing and achieving tighter air quality targets (GLA, 2018).



Proposals include improving information about air quality, encouraging new developments to take into account local air quality, maintaining the LAEI and monitoring networks, promoting and prioritising sustainable transport modes, phasing out the use of fossil fuels with the aim of a zero emissions transport system, tackling unnecessary idling, and reducing emissions from engines and plant.

Local Policies

2.2.16 The Camden Local Plan includes Policy A1 Managing the Impact of Development, which states that (Camden Council, 2017):

"The Council will seek to protect the quality of life of occupiers and neighbours. We will grant permission for development unless this causes unacceptable harm to amenity.

We will:

a. seek to ensure that the amenity of communities, occupiers and neighbours is protected;

b. seek to ensure development contributes towards strong and successful communities by balancing the needs of development with the needs and characteristics of local areas and communities;

c. resist development that fails to adequately assess and address transport impacts affecting communities, occupiers, neighbours and the existing transport network; and

d. require mitigation measures where necessary.

The factors we will consider include:

- e. visual privacy, outlook;
- f. sunlight, daylight and overshadowing;
- g. artificial lighting levels;

h. transport impacts, including the use of Transport Assessments, Travel Plans and Delivery and Servicing Management Plans;

i. impacts of the construction phase, including the use of Construction Management Plans;

j. noise and vibration levels;

k. odour, fumes and dust;

I. microclimate;

m. contaminated land; and

n. impact upon water and wastewater infrastructure."

2.2.17 The Camden Local Plan also includes Policy CC4 Air Quality, which states that:

"The Council will ensure that the impact of development on air quality is mitigated and ensure that exposure to poor air quality is reduced in the borough.

The Council will take into account the impact of air quality when assessing development proposals, through the consideration of both the exposure of occupants



to air pollution and the effect of the development on air quality. Consideration must be taken to the actions identified in the Council's Air Quality Action Plan.

Air Quality Assessments (AQAs) are required where development is likely to expose residents to high levels of air pollution. Where the AQA shows that a development would cause harm to air quality, the Council will not grant planning permission unless measures are adopted to mitigate the impact. Similarly, developments that introduce sensitive receptors (i.e. housing, schools) in locations of poor air quality will not be acceptable unless designed to mitigate the impact.

Development that involves significant demolition, construction or earthworks will also be required to assess the risk of dust and emissions impacts in an AQA and include appropriate mitigation measures to be secured in a Construction Management Plan."

2.2.18 Camden Council has also published Supplementary Planning Documents CPG Air Quality and CPG Amenity which include additional information regarding what should be included in an air quality assessment (Camden Council, 2021a; Camden Council, 2021b).

Air Quality Action Plan

2.2.19 Camden Council has developed a combined Clean Air Strategy and Clean Air Action Plan for its AQMA (Camden Council, 2022). The Camden Clean Air Strategy 2019-2034 sets out the council's strategic objectives for realising the vision for a borough in which no person experiences poor health as a result of the air they breathe. The Camden Clean Air Action Plan 2023-2026 describes the actions that the council will take in order to help meet the air quality objectives.



3 Methodology

3.1. Existing Conditions

- 3.1.1 Information on existing air quality within the study area has been collated from the following sources:
 - The results of monitoring and the LAQM Air Quality Annual Status Reports undertaken by Camden Council (Camden Council, 2023); and
 - Background pollutant concentration maps published by Defra (Defra, 2023c). These cover the whole country on a 1 x 1 km grid.

3.2. Construction Impacts

- 3.2.1 A construction dust risk assessment has been undertaken following the guidance in the London Plan SPG on The Control of Dust and Emissions During Construction and Demolition (GLA, 2014), which utilises the methodology in the Institute of Air Quality Management (IAQM) Guidance on the Assessment of Dust from Demolition and Construction (IAQM, 2014).
- 3.2.2 The guidance divides activities on construction sites into four main types: demolition, earthworks, construction and trackout. The methodology is based on a sequence of steps. Step 1 screens the requirement for more detailed assessment; if there are no receptors within 50 m of the site boundary, or within 50 m of roads used by construction vehicles, then there is no need for further assessment. Step 2 assesses the risk of dust impacts from each of the four activities, considering the scale and magnitude of the works (Step 2A), and the sensitivity of the area (Step 2B). Site-specific mitigation for each of the four activities is then determined based on a dust risk category defined at Step 2C. Appendix A1 sets out the construction dust assessment methodology in more detail.
- 3.2.3 The London Plan SPG on The Control of Dust and Emissions During Construction and Demolition (GLA, 2014) is clear that the primary aim of the risk assessment is to identify site specific mitigation that, once adopted, will 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.

3.3. Road Traffic Impacts

- 3.3.1 Guidance for air quality and planning officers within local authorities, and developers and consultants involved in air quality assessments, has been published by Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM) in Land-Use Planning & Development Control: Planning for Air Quality (EPUK and IAQM, 2017). The guidance sets out criteria to help establish when an air quality assessment is likely to be considered necessary.
- 3.3.2 For impacts of existing air quality on new development, the requirement for an assessment should be based on professional judgement, taking into account:
 - the background and future baseline air quality and whether this will be likely to approach or exceed the values set by air quality objectives;



- the presence and location of Air Quality Management Areas as an indicator of local hotspots where the air quality objectives may be exceeded;
- the presence of a heavily trafficked road, with emissions that could give rise to sufficiently high concentrations of pollutants (in particular NO₂), that would cause unacceptably high exposure for users of the new development; and
- the presence of a source of odour and/or dust that may affect amenity for future occupants of the development.
- 3.3.3 For impacts of development on the local area, a two-stage approach is suggested, with the first stage intended to screen out small developments, and developments considered likely to have insignificant air quality effects. The full criteria are shown in **Appendix A2**.
- 3.3.4 A qualitative assessment of the air quality impacts associated with the development has been undertaken based on the scale of the development, the distance of the development from emissions sources and the existing air quality. The criteria in the EPUK/IAQM guidance and professional judgement have been used to screen the requirement for a full air quality assessment, with the professional experience of the consultant preparing this report set out in **Appendix A3**.

3.4. Railway Impacts

3.4.1 The site is located in close proximity to Midland Mainline railway line, which runs northwest to southeast approximately 19 m southwest of the application site boundary. Defra guidance outlines an approach to assess the potential for exceedances of the nitrogen dioxide objectives as a result of emissions from diesel and steam locomotives (Defra, 2022). The distance criterion for stationary locomotives is exposure within 15m, while that for moving locomotives is 30m. The application site boundary is within 30m of the railway; therefore, the risk of impacts from railway emissions have been considered.



4 Baseline Conditions

4.1. LAQM Review and Assessment

4.1.1 Camden Council has declared the entire borough an AQMA for exceedances of the annual mean NO₂ objective and the 24-hr mean PM₁₀ objective.

4.2. Local Air Quality Monitoring

- 4.2.1 Camden Council operates five automatic monitoring sites and an NO₂ diffusion tube monitoring network. Data from an automatic monitoring site located at Swiss Cottage and diffusion tube monitoring sites located within 500m of the application site are shown in **Table 2**, **Table 3**, **Table 4** and **Table 5** with the monitoring locations shown in **Figure 2**.
- 4.2.2 Measured annual mean NO₂ concentrations at monitoring sites located within 500m of the application site ranged from 19.2 to $36.2\mu g/m^3$ between 2021 and 2022 and the objective has been achieved. Exceedances of the objective have been measured at the Swiss Cottage automatic monitoring site; however, this site is located approximately 1.9km to the east of the application site adjacent to a heavily trafficked trunk road and the data would not be representative of air quality at the application site.
- 4.2.3 Diffusion tube monitoring site CAM38 is located on Ravenshaw Street immediately adjacent to the application site. Annual mean NO₂ concentrations at CAM38 ranged from 20.0 to $20.9\mu g/m^3$ between 2021 and 2022 and the objective has been achieved by a wide margin. The CAM38 monitoring site is located within 1m of the kerb, whereas the façade of the proposed development is set back approximately 5.5m from the kerb; therefore, annual mean NO₂ concentrations would likely be slightly lower at the development façade.
- 4.2.4 There has been an overall decreasing trend in annual mean NO₂ concentrations, and the maximum annual mean NO₂ concentration measured in 2022 was $37\mu g/m^3$, at Swiss Cottage.
- 4.2.5 An exceedance of the 1-hour mean NO₂ objective has been measured at the Swiss Cottage automatic monitoring site in 2017. Measurements across the UK have shown that there is a risk of exceedances of the 1-hour mean NO₂ objective where the annual mean concentration is above $60 \ \mu g/m^3$ (Mayor of London, 2019); therefore, it is highly unlikely that there have been any exceedances of the 1-hour mean objective at diffusion tubes located within 500m of the application site.
- 4.2.6 Measured PM₁₀ and PM_{2.5} concentrations have remained well below the objectives/limit values at the Swiss Cottage automatic monitoring site.
- 4.2.7 The lower concentrations measured in 2020 and 2021 were likely due to travel restrictions brought in to control the Covid-19 pandemic and may not be representative of usual air quality conditions; however, concentrations remained low in 2022 when there were no travel restrictions.



15		Site			Annual	Mean	(µg/m³)		
U	Location	₀	2016	2017	2018	2019	2020	2021	2022
		Au	itomati	c Monit	or	•	•		
CD1	Swiss Cottage	К	66	53	54	43	33	44	37
		[Diffusio	n Tubes	5				
CAM11	Minster Road (Mulberry House School)	R	-	-	-	-	-	24.4	23.6
CAM24	Kingsgate Lower School, Liddell Road	R	-	-	-	-	-	19.6	19.3
CAM25	Kingsgate Lower School, Iverson Road	R	-	-	-	-	-	24.2	24.6
CAM26	Kingsgate Lower School, Ariel Road	R	-	-	-	-	-	21.9	21.3
CAM36	Beckford School, Dornfell Street	R	-	-	-	-	-	21.2	19.8
CAM37	Beckford School, Sumatra Road	R	-	-	-	-	-	21.4	19.2
CAM38	Beckford School, Ravenshaw Street	R	-	-	-	-	-	20.9	20.0
CAM271	Kilburn High Road/Exeter Road	R	-	-	-	-	-	35.7	36.2
Objective						40			

Table 2: Measured Annual Mean NO₂ Concentrations ^a

a Exceedances are shown in bold.

b R = Roadside, K = Kerbside.

Table 3: Exceedance Statistics for the 1-hour Mean NO₂ Objective ^a

	Location	Site		Nur	nber of	Hours >	• 200 µg	/m³	
U	Location	Type ^b	2016	2017	2018	2019	2020	2021	2022
CD1	Swiss Cottage	K	37	1	2	1	0	2	0
Objective						18			

a Exceedances are shown in bold.

b K = Kerbside.



Table 4: Summary of PM₁₀ Monitoring Data

ID	Location	Site Type ^a	2016	2017	2018	2019	2020	2021	2022
Annual Mean (μg/m ³)									
CD1	Swiss Cottage	К	21	20	21	19	16	16	21
	Objective					40			
	Number of Days > 50 μg/m ³								
CD1	Swiss Cottage	К	7	8	4	8	3	0	0
	Objective					35			

a K = Kerbside.

Table 5: Measured Annual Mean PM_{2.5} Concentrations ^a

ID	Location	Site			Annual	Mean	(µg/m³)		
U	LOCATION	Type ^a	2016	2017	2018	2019	2020	2021	2022
CD1	Swiss Cottage	К	15	16	11	11	10	9	12
Limit Value						20			

a K = Kerbside.

4.3. Background Concentrations

4.3.1 Estimated background concentrations at the application site are shown in **Table 6**. The background concentrations have been derived from data in the national maps published by Defra. The background concentrations are all below the objectives.

Table 6: Estimated Annual Mean Background Concentrations in 2023 (µg/m³)

OS grid (x,y)	NO ₂	PM10	PM _{2.5}
524500,185500	20.4	16.7	11.0
Objective/Limit Value	40	40	20

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Figure 2: Air Quality Monitoring Sites

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5 Air Quality Assessment

5.1. Construction Phase

5.1.1 Without mitigation, there is a risk that the construction phase of the development will lead to dust soiling and elevated concentrations of PM₁₀. These impacts may occur during demolition, earthworks and construction, as well as from track-out of dust onto the public highway, as vehicles leave the construction site.

Screening

5.1.2 There are human receptors within 50 m of the application site to the north, east and south and receptors within 50 m of the route used by construction vehicles on the public highway, up to 500 m from the site entrance. Therefore, further assessment of the construction phase impacts is necessary. There are no sensitive ecological receptors within 50 m of the site boundary; therefore, the impacts on ecology will not be considered further.

Risk of Dust Impacts

Potential Dust Emission Magnitude

- 5.1.3 The existing building at the application site will be demolished to make way for the proposed development. The existing building has a volume significantly less than 20,000m³ and would be completed within a maximum of four weeks; therefore, with regard to **Table A1** in **Appendix A1**, the dust emission magnitude for demolition is considered to be small.
- 5.1.4 Earthworks may be required during excavation of the basement. The application site has a total area of around 480m²; therefore, with regard to **Table A1** in **Appendix A1**, the dust emission magnitude for earthworks is considered to be small.
- 5.1.5 The total volume of new construction will be less than 25,000m³; therefore, with regard to **Table A1** in **Appendix A1**, the dust emission magnitude for construction is considered to be small.
- 5.1.6 Less than 10 heavy-duty vehicles (HDV) will leave the site daily; therefore, with regard to **Table A1** in **Appendix A1**, the dust emission magnitude for trackout is considered to be small.
- 5.1.7 A summary of the likely dust emission magnitudes is shown in **Table 7**.

Table 7: Likely Dust Emission Magnitudes

Source	Dust Emission Magnitude
Demolition	Small
Earthworks	Small
Construction	Small
Trackout	Small



Sensitivity of the Area

5.1.8 The sensitivity of the area depends on the specific sensitivities of local receptors, the proximity and number of receptors, local PM₁₀ background concentrations and other site-specific factors, e.g., natural screening by trees.

Sensitivity of the Area to Dust Soiling

- 5.1.9 Local residential properties would be considered to be 'high' sensitivity receptors to dust soiling (see **Table A2** in **Appendix A1**). There would be between 10-100 residential properties within 20m of the application site boundary and with reference to **Table A5** in **Appendix A1**, the area is considered to be of high sensitivity to dust soiling from construction.
- 5.1.10 There may be between 10-100 residential properties within 20m of the road up to 50m from the site access along which material could be tracked; therefore, with reference to **Table A5** in **Appendix A1**, the area is considered to be of high sensitivity to dust soiling from trackout.

Sensitivity of the Area to the Health Effects of PM₁₀

- 5.1.11 Residential properties are considered to be 'high' sensitivity receptors to the health effects of PM₁₀ (see **Table A3** in **Appendix A1**).
- 5.1.12 Given that local PM_{10} sensitive receptors are located away from significant road traffic emissions sources, annual mean PM_{10} concentrations at sensitive receptors within 20m of the construction works that may be affected by PM_{10} during construction will be significantly lower than those measured in recent years at the Swiss Cottage automatic monitoring site, i.e., less than $21\mu g/m^3$. With reference to **Table A6** in **Appendix A1**, the area is thus described to be of low sensitivity to the health effects of PM_{10} from construction and from trackout.
- 5.1.13 A summary of the sensitivity of the area to the effects of the construction works is shown in **Table 8**.

Potential Effect	Sensitivity of the Area			
	On-site Works	Trackout		
Dust Soiling	High	High		
Health	Low	Low		

Table 8: Summary of the Area Sensitivity

Risk of Impact and Significance

5.1.14 The dust emission magnitudes in Table 7 have been combined with the area sensitivities in Table 8 and a risk category has been assigned to each construction activity using the matrix in Table A8 in Appendix A1. The resultant risk categories, shown in Table 9, have then been used to determine the appropriate level of mitigation necessary for a residual effect that is likely to be 'not significant'.



Table 9: Summary of the Risk of Impacts Without Mitigation

Construction Activity	Dust Soiling	Health
Demolition	Medium	Negligible
Earthworks	Low	Negligible
Construction	Low	Negligible
Trackout	Low	Negligible

5.2. Operational Phase

Impact of the Development

5.2.1 The proposed development will not provide any new car parking spaces and will not significantly increase traffic on local roads. Any change in traffic would be small and significantly less than the 100 annual average daily light vehicle movements in the EPUK/IAQM screening criteria shown in **Appendix A2** that would require an assessment of the impacts on local receptors inside an AQMA. Therefore, detailed assessment of the road traffic impacts of the development on the surrounding area should not be required.

Impact on the Development

Road Traffic Emissions

- 5.2.2 The results from diffusion tube monitoring site CAM38, located immediately adjacent to the application site, indicate that annual mean NO₂ concentrations close to the kerb ranged from 20.0 to $20.9\mu g/m^3$ between 2021 and 2022. Therefore, annual mean NO₂ concentrations would be well below the objective at the development façade.
- 5.2.3 PM concentrations at the proposed development would be lower than those measured at the Swiss Cottage automatic monitoring site and the objectives/limit values for PM₁₀ and PM_{2.5} would also be achieved.
- 5.2.4 The annual mean air quality objectives/limit values would be achieved at the application site; therefore, there would be no exposure to pollutant concentrations above the air quality objectives at the proposed development.

Rail Emissions

- 5.2.5 Measured on a map, the application site boundary and the proposed building façade are approximately 19m and 25m respectively from the closest railway line. The railway line is located at the bottom of an embankment, and thus the distance of the building façade from the emissions source is actually greater than 25m and is likely to be close to the 30m distance criterion in the Defra guidance (Defra, 2022).
- 5.2.6 The Defra guidance also presents a list of railway lines with a high usage of diesel locomotives that should be considered by local authorities when undertaking review and assessments under their LAQM obligations. The Midland Mainline is not included and thus is likely to have a relatively low volume of diesel locomotive movements.



5.2.7 Given the distance of the development façade from the rail emissions source and the low measured pollutant concentrations, it is considered that emissions from the railway line would have a negligible effect on air quality at the proposed development.



6 Mitigation

6.1. Construction Phase

6.1.1 The application site has been identified as a low-risk site overall due to dust soiling and a negligible risk site to health during the construction phase, as set out in **Table 9**. The dust risk category has been used, along with the professional judgement of the consultant, to determine the appropriate level of mitigation at the site. The mitigation measures, taken from the London Plan SPG on The Control of Dust and Emissions During Construction and Demolition (GLA, 2014), are described in **Appendix A4**.

6.2. Operational Phase

- 6.2.1 The screening assessment has shown that there will be no exposure to pollutant concentrations above the air quality objectives at the proposed development.
- 6.2.2 Mitigation measures to reduce pollutant emissions from road traffic are principally being delivered in the longer term by the introduction of more stringent emissions standards, largely via European legislation. It is not considered necessary to propose further mitigation measures for this scheme.



7 Residual Impacts

7.1. Construction Phase

- 7.1.1 The London Plan SPG is clear that, with appropriate mitigation in place, the residual effect will normally be 'not significant'. With the implementation of the mitigation measures set out in **Appendix A4**, the residual effects are judged to be *insignificant*.
- 7.1.2 During adverse weather conditions, or where there is an interruption to the water supply, there may be occasional, short-term dust annoyance; however, the likely scale and duration of these effects would not change the conclusion that the residual effects are *insignificant*.

7.2. Operational Phase

7.2.1 The residual impacts will be the same as those identified in **Section 5.2**.



8 Conclusions

- 8.1.1 The air quality impacts associated with the construction and operation of the proposed residential development at 23 Ravenshaw Street, London, NW6 1NP have been assessed.
- 8.1.2 The construction phase will have the potential to create dust. It will therefore be necessary to implement mitigation measures to minimise dust emission. With these measures in place, it is expected that any residual effects will not be significant.
- 8.1.3 The increase in traffic on local roads due to the development is less than the IAQM/EPUK criteria indicating that detailed air quality assessment would be necessary. Therefore, the proposed development is considered to have an insignificant effect on local air quality.
- 8.1.4 Residents at the proposed development would not be subject to exposure to pollutant concentrations above the air quality objectives. Therefore, the impact of local air quality on the proposed development is considered to be insignificant.
- 8.1.5 The proposed development is air quality neutral with regard to building and transport emissions.
- 8.1.6 There should be no constraints to the development, with regard to air quality, as the proposed development is consistent with the relevant parts of:
 - The NPPF and Air Quality nPPG;
 - The London Plan and relevant SPGs; and
 - Policies A1 and CC4 of the Camden Local Plan.



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10 Glossary

AADT	Annual Average Daily Traffic
AQMA	Air Quality Management Area
AURN	Automatic Urban and Rural Network
Defra	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
EPUK	Environmental Protection UK
Exceedance	A period of time when the concentration of a pollutant is greater than the appropriate air quality objective. This applies to specified locations with relevant exposure
IAQM	Institute of Air Quality Management
LAQM	Local Air Quality Management
µg/m³	Microgrammes per cubic metre
NO	Nitric oxide
NO ₂	Nitrogen dioxide
NOx	Nitrogen oxides (taken to be NO ₂ + NO)
NPPF	National Planning Policy Framework
Objectives	A nationally defined set of health-based concentrations for nine pollutants, seven of which are incorporated in Regulations, setting out the extent to which the standards should be achieved by a defined date. There are also vegetation-based objectives for sulphur dioxide and nitrogen oxides
PM ₁₀	Small airborne particles, more specifically particulate matter less than 10 micrometres in aerodynamic diameter
PM _{2.5}	Small airborne particles less than 2.5 micrometres in aerodynamic diameter
Standards	A nationally defined set of concentrations for nine pollutants below which health effects do not occur or are minimal



11 Appendices

A1	Construction Dust Assessment Methodology
A2	Criteria Used to Establish when an Air Quality Assessment is Likely to be Necessary34
A3	Professional Experience
A4	Construction Mitigation



A1 Construction Dust Assessment Methodology

- A1.1.1 The London Plan SPG on the Control of Dust and Emissions During Construction and Demolition (GLA, 2014) divides activities on construction sites into four types to reflect their different potential impacts:
 - demolition;
 - earthworks;
 - construction; and
 - trackout.
- A1.1.2 A series of steps then consider the potential impact due to:
 - annoyance due to dust soiling;
 - the risk of health effects due to increased exposure to PM₁₀; and
 - harm to ecological receptors.

A1.2. Step 1: Screen the Need for a Detailed Assessment

- A2.1.1 An assessment is required where there is a human receptor within 50 m of the site boundary, and/or within 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance(s), or where there is an ecological receptor within 50 m of the site boundary, and/or within 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance(s).
- A2.1.2 Where the need for a more detailed assessment is screened out, it can be concluded that the level of risk is negligible, and any effects will be not significant.

A1.3. Step 2: Assess the Risk of Dust Impacts

- A3.1.1 A site is allocated to a risk category based on two factors:
 - the scale and nature of the works, which determines the potential dust emissions magnitude (Step 2A); and
 - the sensitivity of the area to dust impacts (Step 2B).
- A3.1.2 These two factors are combined at Step 2C to determine the risk of dust impacts from each type of construction activity, with no mitigation applied.

Step 2A: Potential Dust Emissions Magnitude

A3.1.3 The dust emission magnitude is classified as small, medium or large. Examples of how the potential dust emission magnitude for each activity can be defined are shown in **Table A1**.



Class	Example
	Demolition
Large	Total building volume >50,000 m ³ , potentially dusty construction material (e.g. concrete), on site crushing and screening, demolition activities >20 m above ground level.
Medium	Total building volume 20,000 m ³ – 50,000 m ³ , potentially dusty construction material, demolition activities 10-20 m above ground level.
Small	Total building volume <20,000 m ³ , construction material with low potential for dust release (e.g. metal cladding or timber), demolition activities <10 m above ground, demolition during wetter months.
	Earthworks
Large	Total site area >10,000 m ² , potentially dusty soil type (e.g. clay, which will be prone to suspension when dry to due small particle size), >10 heavy earth moving vehicles active at any one time, formation of bunds >8 m in height, total material moved >100,000 tonnes.
Medium	Total site area 2,500 m ² – 10,000 m ² , moderately dusty soil type (e.g. silt), 5-10 heavy earth moving vehicles active at any one time, formation of bunds 4 m – 8 m in height, total material moved 20,000 tonnes – 100,000 tonnes.
Small	Total site area <2,500 m ² , soil type with large grain size (e.g. sand), <5 heavy earth moving vehicles active at any one time, formation of bunds <4 m in height, total material moved <20,000 tonnes, earthworks during wetter months.
	Construction
Large	Total building volume >100,000 m ³ , piling, on site concrete batching; sandblasting.
Medium	Total building volume 25,000 m ³ – 100,000 m ³ , potentially dusty construction material (e.g. concrete), on site concrete batching.
Small	Total building volume <25,000 m ³ , construction material with low potential for dust release (e.g. metal cladding or timber).
	Trackout ^a
Large	>50 HDV (>3.5t) outward movements in any one day, potentially dusty surface material (e.g. high clay content), unpaved road length >100 m.
Medium	10-50 HDV (>3.5t) outward movements in any one day, moderately dusty surface material (e.g. high clay content), unpaved road length 50 m – 100 m.
Small	<10 HDV (>3.5t) outward movements in any one day, surface material with low potential for dust release, unpaved road length <50 m.

Table A1: Examples of How the Dust Emission Magnitude can be Defined

a These numbers are for vehicles that leave the site after moving over unpaved ground.



Step 2B: Define the Sensitivity of the Area

- A3.1.4 The sensitivity of the area takes account of:
 - the specific sensitivities of receptors in the area;
 - the proximity and number of those receptors;
 - in the case of PM₁₀, the local background concentrations; and
 - site-specific factors, such as whether there are natural shelters, such as trees, to reduce the risk of wind-blown dust.
- A3.1.5 The specific sensitivities of different types of receptor to dust soiling and PM₁₀ are shown **Table A2**, **Table A3** and **Table A4**. Professional judgement should be used to identify where on the spectrum of sensitivity a receptor lies, taking account of specific circumstances, i.e. the first occupants of residential units on a phased development may be expected to be less sensitive to dust soiling.
- A3.1.6 The sensitivity of the area is then determined from the specific sensitivities of the receptors using the matrices set out in **Table A5**, **Table A6** and **Table A7**.
- A3.1.7 Professional judgement should be used to determine the final sensitivity of the area, taking account of:
 - any history of dust generating activities in the area:
 - the likelihood of concurrent dust generating activity on nearby sites;
 - any pre-existing screening between source and receptors;
 - any conclusions drawn from analysing local meteorological data which accurately represents the area; and if relevant, the season during which the works will take place;
 - any conclusions drawn from local topography;
 - duration of the potential impact, as a receptor may become more sensitive over time; and
 - any other known specific receptor sensitivities.

Step 2C: Define the Risk of Impacts

A3.1.8 The dust emission magnitude determined at Step 2A is combined with the sensitivity of the area determined at Step 2B to determine the risk of impacts with no mitigation applied. The level of risk for each activity is determined using the matrix in **Table A8**.

A1.4. Determine Site Specific Mitigation

A1.4.1 The dust risk category determined at Step 2C has been used, along with the professional judgement of the consultant, to determine the appropriate level of mitigation at the site. The highly recommended and desirable mitigation measures



set out in the London Plan SPG form the basis of the mitigation set out in **Appendix A4**.

- A1.4.2 The mitigation measures will inform an Air Quality and Dust Management Plan (AQDMP), which will be submitted to the local authority for approval prior to works commencing on-site.
- A1.4.3 The London Plan SPG is clear that the primary aim of the risk assessment is to identify site specific mitigation that, once adopted, will ensure that there will be no significant effect.

Class	Principles	Examples
High	Users can reasonably expect enjoyment of a high level of amenity; or the appearance, aesthetics or value of their property would be diminished by soiling; and the people or property would reasonably be expected a to be present continuously, or at least regularly for extended periods, as part of the normal pattern of use of the land.	Dwellings, museum and other culturally important collections, medium and long term car parks and car showrooms.
Medium	Users would expect to enjoy a reasonable level of amenity, but would not reasonably expect to enjoy the same level of amenity as in their home; or the appearance, aesthetics or value of their property could be diminished by soiling; or the people or property wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land.	Parks and places of work.
Low	The enjoyment of amenity would not reasonably be expected; or property would not reasonably be expected to be diminished in appearance, aesthetics or value by soiling; or there is transient exposure, where the people or property would reasonably be expected to be present only for limited periods of time as part of the normal pattern of use of the land.	Playing fields, farmland (unless commercially- sensitive horticultural), footpaths, short term car parks and roads.

Table A2: Sensitivities of People to Dust Soiling



Table A3: Sensitivities of People to PM₁₀

Class	Principles	Examples
High	Locations where members of the public may be exposed for eight hours or more in a day.	Residential properties, hospitals, schools and residential care homes.
Medium	Locations where the people exposed are workers, and where individuals may be exposed for eight hours or more in a day.	Office and shop workers, but will generally not include workers occupationally exposed to PM ₁₀
Low	Locations where human exposure is transient.	Public footpaths, playing fields, parks and shopping streets.

Table A4: Sensitivities of Receptors to Ecological Effects

Class	Principles	Examples
High	Locations with an international or national designation and the designated features may be affected by dust soiling; or locations where there is a community of a particularly dust sensitive species.	Special Areas of Conservation (SAC) with dust sensitive features.
Medium	Locations where there is a particularly important plant species, where its dust sensitivity is uncertain or unknown; or locations with a national designation where the features may be affected by dust deposition.	Sites of Special Scientific Interest (SSSI) with dust sensitive features.
Low	Locations with a local designation where the features may be affected by dust deposition.	Local Nature Reserves with dust sensitive features.



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

Table A6: Sensitivity of the Area to Human Health Effects 1

Receptor	Annual Mean PM ₁₀	Number of	Distance from the Source (m)				
Sensitivity		Receptors	<20	<50	<100	<200	<350
High		>100	High	High	High	Medium	Low
	>32 µg/m³	10-100	High	High	Medium	Low	Low
		1-10	High	Medium	Low	Low	Low
		>100	High	High	Medium	Low	Low
	28-32 ug/m ³	10-100	High	Medium	Low	Low	Low
	~o/ ···	1-10	High	Medium	Low	Low	Low
		>100	High	Medium	Low	Low	Low
	24-28 ug/m ³	10-100	High	Medium	Low	Low	Low
	~o/ ···	1-10	Medium	Low	Low	Low	Low
	<24 µg/m ³	>100	Medium	Low	Low	Low	Low
		10-100	Low	Low	Low	Low	Low
		1-10	Low	Low	Low	Low	Low
Medium	-	>10	High	Medium	Low	Low	Low
	-	1-10	Medium	Low	Low	Low	Low
Low	-	>1	Low	Low	Low	Low	Low

¹ For demolition, earthworks and construction, the distances are measured from the dust source, or the application site boundary. For trackout, the distances are measured from the side of the roads used by construction traffic. Without site-specific mitigation, trackout may occur from roads up to 500 m from large sites, 200 m from medium sites and 50 m from small sites, as measured from the site exit. The impact declines with distance from the site, and it is only necessary to consider trackout impacts up to 50 m from the edge or the road.



Table A7: Sensitivity of the Area to Ecological Effects 1

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

Table A8: Defining the Risk of Dust Impacts

Sensitivity of	Dust Emission Magnitude			
the Area	Large	Medium	Small	
	De	emolition		
High	High Risk	Medium Risk	Medium Risk	
Medium	High Risk	Medium Risk	Low Risk	
Low	Medium Risk	Low Risk	Negligible	
	Ea	rthworks		
High	High Risk	Medium Risk	Low Risk	
Medium	Medium Risk	Medium Risk	Low Risk	
Low	Low Risk	Low Risk	Negligible	
	Сог	nstruction		
High	High Risk	Medium Risk	Low Risk	
Medium	Medium Risk	Medium Risk	Low Risk	
Low	Low Risk	Low Risk	Negligible	
Trackout				
High	High Risk	Medium Risk	Low Risk	
Medium	Medium Risk	Low Risk	Negligible	
Low	Low Risk	Low Risk	Negligible	



A2 Criteria Used to Establish when an Air Quality Assessment is Likely to be Necessary

A2.1.1 Criteria to Proceed to Stage 2.

A. If any of the following apply:

- 10 or more residential units or a site area of more than 0.5ha;
- more than 1,000 m² of floor space for all other uses or a site area greater than 1ha

B. Coupled with any of the following:

- the development has more than 10 parking spaces
- the development will have a centralised energy facility or other centralised combustion process

Note: Consideration should still be given to the potential impacts of neighbouring sources on the site, even if an assessment of impacts of the development on the surrounding area is screened out.

A2.1.2	The Stage 2	criteria are	shown i	n Table A9 .
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Table A9: Indicative Criteria for Requiring an Air Quality Assessment

The development will:	Indicative Criteria to Proceed to an Air Quality Assessment	
 Cause a significant change in Light Duty Vehicle (LDV) traffic flows on local roads with relevant receptors. (LDV = cars and small vans <3.5t gross vehicle weight) 	A change of LDV flows of: - more than 100 AADT within or adjacent to an AQMA; - more than 500 AADT elsewhere.	
 Cause a significant change in Heavy Duty Vehicle (HDV) flows on local roads with relevant receptors. (HDV = goods vehicles + buses >3.5t gross vehicle weight) 	A change of HDV flows of: - more than 25 AADT within or adjacent to an AQMA; - more than 100 AADT elsewhere.	
3. Realign roads, i.e. changing the proximity of receptors to traffic lanes.	Where the change is 5m or more and the road is within an AQMA.	
4. Introduce a new junction or remove an existing junction near to relevant receptors.	Applies to junctions that cause traffic to significantly change vehicle accelerate/decelerate, e.g. traffic lights, or roundabouts.	
5. Introduce or change a bus station.	 Where bus flows will change by: more than 25 AADT within or adjacent to an AQMA; more than 100 AADT elsewhere. 	



The development will:	Indicative Criteria to Proceed to an Air Quality Assessment
6. Have an underground car park with extraction system.	The ventilation extract for the car park will be within 20 m of a relevant receptor; coupled with the car park having more than 100 movements per day (total in and out).
7. Have one or more substantial combustion processes	 Where the combustion unit is: any centralised plant using bio fuel; any combustion plant with single or combined thermal input>300kW; a standby emergency generator associated with a centralised energy centre (if likely to be tested/used >18 hours a year).
8. Have a combustion process of any size	Where the pollutants are exhausted from a vent or stack in a location and at a height that may give rise to impacts at receptors through insufficient dispersion. This criterion is intended to address those situations where a new development may be close to other buildings that could be residential and/or which could adversely affect the plume's dispersion by way of their size and/or height.



A3 Professional Experience

Bob Thomas, BSc (Hons) PgDip MSc MIEnvSc MIAQM CSci

Bob Thomas is a Director at AQA, with over twenty years working in the sciences and sixteen years' experience in the field of air quality management and assessment. He has carried out air quality assessments for a wide range of developments, including residential, commercial, industrial, minerals and waste developments. He has been responsible for air quality projects that include ambient air quality monitoring of nitrogen dioxide, dust and PM₁₀, the assessment of nuisance odours and dust, and the preparation of Review and Assessment reports for local authorities. He has extensive dispersion modelling experience for road traffic, energy centre and industrial sources, and has completed many stand-alone reports and chapters for clients to provide expert air quality services and advice, including local authorities, planners, developers, architects and process operators, and has provided expert witness services at public inquiry. He is a Chartered Scientist, a Member of the Institute of Air Quality Management and a Member of the Institution of Environmental Sciences.

A full CV for Bob Thomas is available at <u>http://aqassessments.co.uk/about</u>



A4 Construction Mitigation

A4.1.1 The following is a set of measures that should be implemented during construction.

A4.2. 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;
- 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; and
- 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 in the log book.

A4.3. Preparing and Maintaining the Site

- Plan the 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 enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period;
- avoid site runoff of water or mud;
- keep site fencing, barriers and scaffolding clean using wet methods; and
- remove materials from site as soon as possible.

A4.4. Operating Vehicle/Machinery and Sustainable Travel

- Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone;
- ensure all non-road mobile machinery (NRMM) comply with the standards set within the London Plan SPG on The Control of Dust and Emissions During Construction and Demolition;
- ensure all vehicles switch off their engines when stationary no idling vehicles;
- avoid the use of diesel- or petrol-powered generators and use mains electricity or battery-powered equipment where possible; and
- implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).



A4.5. 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; and
- minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.

A4.6. Waste Management

- Reuse and recycle waste to reduce dust from waste materials; and
- no bonfires and burning of waste materials.

A4.7. Measures Specific to 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; and
- bag and remove any biological debris or damp down such material before demolition.

A4.8. Measures Specific to Construction

- Avoid scabbling (roughening of concrete surfaces) if possible; and
- 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.

A4.9. Measures Specific to Trackout

- Avoid dry sweeping of large areas;
- ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport; and
- implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).