Air Quality Assessment

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JAMESTOWN ROAD

Air Quality CONSULTANTS | PART OF Logika Group

Report

33-35 Jamestown and 211 Arlington Road, Camden

Air Quality Assessment

For 4C Jamestown Road Ltd

19 September 2024

Air Quality CONSULTANTS | PART OF Logika Group

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1 Introduction

1.1 This Air Quality Assessment has been prepared by Air Quality Consultants Ltd on behalf of 4C-Jamestown Road Ltd in support of an application for full planning permission for the:

Demolition of existing buildings and structures to facilitate redevelopment comprising a Purpose Built Student Accommodation (Sui Generis) block over the basement, ground, plus six storeys and seventh-floor plant room with flexible commercial (Class E) on the ground floor and a residential (Class C3) block over the ground plus five storeys, each block has two private courtyards with hard and soft landscaping, cycle parking, and associated works.

1.2 It should be read alongside the full suite of reports that have been prepared and submitted, particularly the Design and Access Statement, prepared by Morris + Company and the Planning Statement, prepared by DP9. The Proposed Development is at 33-35 Jamestown Road and 211 Arlington Road, in Camden

1.3 The proposed development lies within the London Borough of Camden (LBC). The site is located within an Air Quality Management Area (AQMA) declared for exceedances of the annual mean nitrogen dioxide (NO_2) and 24-hour mean particulate matter (PM_{10}) objectives. It is also located adjacent to one of the Greater London Authority's (GLA's) air quality Focus Areas, '*Camden High Street from Mornington Cresent to Chalk Farm and Camden Road*'; these are locations with high levels of human exposure where the annual mean limit value for nitrogen dioxide is exceeded.

1.4 The location and setting of the proposed development are shown in Figure 1, along with the nearby Focus Area and monitoring sites.

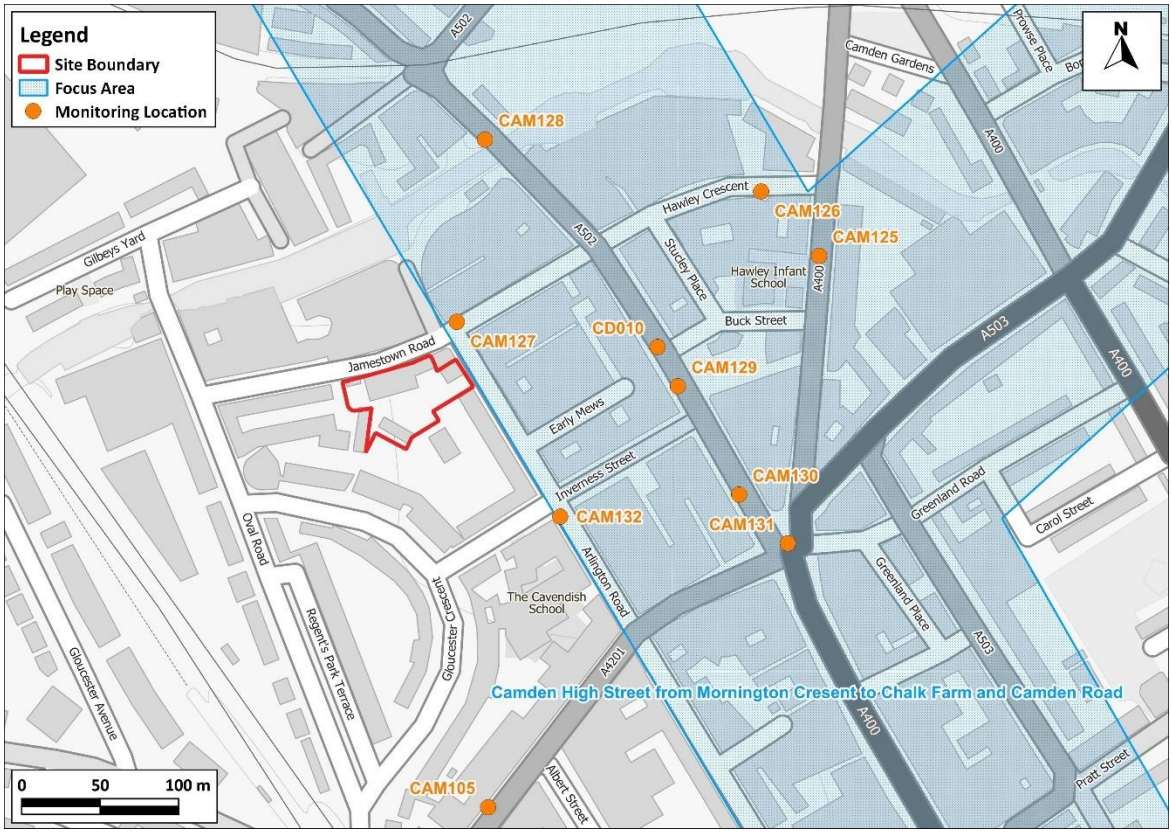

Figure 1: Proposed Development Setting in the Context of Air Quality

1.5 Air quality needs to be considered to ensure that the development does not generate any adverse impacts off site and to ensure that new residents/users are not exposed to exceedences of the air quality objectives. The proposed development is likely to lead to a reduction in vehicle flows on local roads. The energy strategy for the proposed development is for all energy supply to be electric; there will be no centralised combustion plant and thus there will be no significant point sources of emissions within the proposed development. The proposed development will however include an emergency diesel generator, the testing from which could lead to increases in emissions which therefore requires consideration.

1.6 The Greater London Authority's (GLA's) London Plan (GLA, 2021) requires new developments to be air quality neutral. The air quality neutrality of the proposed development has been assessed following the methodology provided in the latest GLA's London Plan Guidance (Air Quality Neutral) (GLA, 2023a).

1.7 The GLA has also released Supplementary Planning Guidance on the Control of Dust and Emissions from Construction and Demolition (GLA, 2014). The SPG outlines a risk assessment approach for construction dust assessment and helps determine the mitigation measures that will need to be applied. A construction dust assessment has been undertaken and the appropriate mitigation has been set out.

1.8 This report has been prepared taking into account all relevant local and national guidance and regulations, and follows a methodology agreed with LBC.

Consultation

1.9 The assessment follows a methodology agreed with LBC via an email correspondence between Ben Spode (Air Quality Officer at LBC) and Lucy Hodgins (Air Quality Consultants) on the 7th of August 2024. Specifically, the following key points were discussed and agreed:

- traffic generated by the proposed development will be below published screening criteria and dispersion modelling is not deemed necessary;
- a basic assessment of the air quality conditions for future residents is appropriate, due to the new homes being located well away from any significant air pollution sources and published baseline data identifying air quality to be good;
- a construction dust risk assessment and an Air Quality Neutral assessment should be provided; and
- an assessment of the emissions from the testing of any proposed emergency generator, based on the sizing, flue location and testing frequency should be provided.

2 Policy Context

2.1 All European legislation referred to in this report is written into UK law and remains in place. The following Policy, Legislation and Guidance has been followed when preparing this document. For details of each, please see Appendix A2

- Air Quality Strategy 2007
- Air Quality Strategy 2023
- Clean Air Strategy 2019
- Environment Act 2021
- Environmental Improvement Plan 2023
- National Planning Policy
- London-Specific Policies
    - i) The London Plan
    - ii) London Environment Strategy
    - iii) Mayor's Transport Strategy
    - iv) GLA SPG: The Control of Dust and Emissions During Construction and Demolition
    - v) GLA LPG: Air Quality Neutral
    - vi) Air Quality Focus Areas
- Local Transport Plan
- Local Policies
    - i) London Borough of Camden Local Plan 2017
        - Policy CC4
        - Policy T2
        - Policy A1; and
        - Policy D1
    - ii) Draft Regulation 18 Local Plan
        - Policy A3
    - iii) Air Quality Camden Planning Guidance
- Air Quality Action Plans
    - i) National Air Quality Plan
    - ii) Local Air Quality Action Plan

3 Pollutants of Concern

UK Criteria

3.1 The main air pollutants of concern are nitrogen dioxide (NO_2) and fine particulate matter (PM_{10} and $PM_{2.5}$). These are the pollutants most related to road traffic emissions and known to have adverse health impacts. UK-wide objectives for nitrogen dioxide and PM_{10} were to have been achieved by 2005 and 2004 respectively and continue to apply in all future years thereafter.

3.2 The objectives apply at locations where members of the public are likely to be regularly present and are likely to be exposed over the averaging period of the objective. The GLA explains where these objectives will apply in London (GLA, 2019). The annual mean objectives for nitrogen dioxide and PM_{10} are considered to apply at the façades of residential properties, schools, hospitals and care homes etc., the gardens of residential properties, school playgrounds and the grounds of hospitals and care homes. The 24-hour mean objective for PM_{10} is considered to apply at the same locations as the annual mean objective, as well as at hotels. The 1-hour mean objective for nitrogen dioxide applies wherever members of the public might regularly spend 1-hour or more, including outdoor eating locations and pavements of busy shopping streets.

3.3 For $PM_{2.5}$, the objective set by Defra for local authorities is to work toward reducing concentrations without setting any specific numerical value. In the absence of a numerical objective, it is convention to assess local air quality impacts against the limit value[1], originally set at 25 µg/m^3 and currently set at 20 µg/m^3.

3.4 The GLA has set a target to achieve an annual mean $PM_{2.5}$ concentration of 10 µg/m^3 by 2030. This target was derived from an air quality guideline set by WHO in 2005. In 2021, WHO updated its guidelines, but the London Environment Strategy (GLA, 2018a) considers the 2005 guideline of 10 µg/m^3. While there is no explicit requirement to assess against the GLA target of 10 µg/m^3, it has nevertheless been included within this assessment.

3.5 The relevant air quality criteria for this assessment are provided in Table 1.

Table 1: Air Quality Criteria for Nitrogen Dioxide, PM_{10} and $PM_{2.5}$ and PM_{10} and $PM_{2.5}$

Pollutant	Time Period	Value
Nitrogen Dioxide	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/m^3 [a]
	Annual Mean	10 µg/m^3 by 2030

[1] EU Directive 2008/50/EC sets limit values for NO_2, PM_{10} and $PM_{2.5}$, and is implemented in UK law through the Air Quality Standards Regulations (2010). The limit values for NO_2 and PM_{10} are the same numerical concentrations as the UK objectives, but achievement of the limit values is a national obligation rather than a local one and concentrations are reported to the nearest whole number. In the UK, only monitoring and modelling carried out by UK Central Government meets the specification required to assess compliance with the limit values.

[a] There is no numerical $PM_{2.5}$ objective for local authorities (see Paragraph 3.3). Convention is to assess against the UK limit value which is currently 20 µg/m^3.

Camden Criteria

3.6 LBC has produced a supplementary planning document to support Policy CC4[2] of its Local Plan. The Air Quality Camden Planning Guidance (CPG) (London Borough of Camden, 2021b) and Clean Air Strategy and Clean Air Action Plan (CAAP) (London Borough of Camden, 2022) commit to meeting the WHO guideline limits for NO_2, PM_{10} and $PM_{2.5}$ (discussed further in Section A2). However, the two documents quote different WHO limits; the CPG refers to the previous (2005) WHO limits to be met in 2030, while the CAAP refers to the current (2021) WHO limits to be met in 2034.

3.7 The commitment to meet the new WHO guidelines in the CAAP is described within the context of the Council's local air quality management; the CAAP states that "*We will not consider that we have achieved the WHO guideline objectives until every monitoring location at which the pollutants are measured records annual mean concentrations which meet the relevant standards*". The purpose of the CAAP is to help fulfil their requirements under the LAQM regime, rather than development control. The CAAP does not reference the WHO guidelines for planning, nor does the CAAP include any measures with respect to updating the Air Quality CPG to account for the latest WHO guidelines.

3.8 For the purpose of this assessment, the WHO guidelines outlined in the Air Quality CPG have been used as these relate to planning and are the guidelines quoted in the Council's Air Quality Proforma to be submitted to accompany planning applications (London Borough of Camden, 2023). These guidelines are presented in Table 2 below. The target years for achievement as outlined in the Camdem CAAP have also been provided.

Table 2: Camden Air Quality CPG Criteria for NO_2, PM_{10}, and $PM_{2.5}$

Pollutant	Guideline Target (as an annal mean)	Target achievement year
NO_2	38 µg/m^3 [a]	- [b]
PM_{10}	20 µg/m^3	2026
$PM_{2.5}$	10 µg/m^3	2030

[a] While the WHO guideline is 40 µg/m^3, 38 µg/m^3 has been used in accordance with the Air Quality CPG which states that "*consideration must be paid to uncertainty in NO_2 data, therefore 38µg/m^3 (the 40µg/m^3 WHO limit less 5%) shall be taken as the limit for this pollutant*."

[b] No achievement target timeframe for NO_2 as a target of 38 µg/m^3 should have already been met.

[2] The policy is outlined in further detail in Appendix 1)a)i)(1)(a)(i)A2

4 Assessment Approach

4.1 The scope of the air quality assessment considers the following elements:

i. the existing air quality surrounding the Proposed Development;

ii. the impact of dust and air quality emissions during the demolition an construction phase on existing air quality;

iii. the impact of emissions from the scheme on existing air quality. This considers any changes to vehicles flows as a result of the scheme, as well as the proposed emergency generator;

iv. the impact of existing air quality on future residents and users of the Proposed Development, considering whether the site is suitable for the proposed uses; and

v. an Air Quality Neutral Assessment.

The approach to the assessment is outlined in the following sections.

Existing Conditions

4.2 Existing sources of emissions and baseline air quality conditions within the study area have been defined using the following approaches:

i. industrial sources that may affect the area have been identified using Defra's Pollutant Release and Transfer Register (Defra, 2024);

ii. information on existing air quality has been obtained by collating the results of monitoring carried out by the LBC; and

iii. information on existing air quality has also been obtained through examination of the London Atmospheric Emissions Inventory (LAEI) database produced by the GLA (2023b). These predicted concentrations cover the whole of the GLA area at 20 m grid resolution.

Construction Impacts

4.3 The construction dust assessment considers the potential for impacts within 250 m of the site boundary, or within 50 m of roads used by construction vehicles. The assessment methodology follows the GLA's SPG on the Control of Dust and Emissions During Construction and Demolition (GLA, 2014), which is based on that provided by IAQM (2024). The assessment approach determines the risk of dust impacts and the appropriate level of mitigation required to ensure that there should be no significant effects.

Impacts of the Proposed Development

Road Traffic

4.4 The assessment considers the change in traffic flows as a result of the Proposed Development. The approach utilises the Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM)[3] screening criteria (Moorcroft and Barrowcliffe et al, 2017). The criteria for inside an AQMA are a change in traffic flows of more than 100 Light Duty Vehicles (LDVs) as an Annual Average Daily Traffic (AADT) flow, or more than 25 Heavy Duty Vehicles (HDVs) as an AADT flow. Where traffic flows

[3] The IAQM is the professional body for air quality practitioners in the UK.

are below the criteria (or the number of vehicle movements reduce) the impacts on air quality can be considered insignificant.

Generator

4.5 The impact of emissions generated by the routine testing and maintenance of the proposed generator on concentrations has been assessed qualitatively, taking account of the anticipated number of hours of operation.

Impacts on Future Residents of the Proposed Development

4.6 The impacts of nitrogen dioxide, PM_{10} and $PM_{2.5}$ concentrations on the development have been assessed qualitatively. The assessment considers air quality conditions within the site taking account of local air quality monitoring data, proximity to local roads and the predicted LAEI concentrations.

4.7 Consideration has also been given to the impacts of emissions generated by the routine testing and maintenance of the proposed generator on concentrations for future residents.

4.8 There is no official guidance in the UK in relation to development control on how to assess the significance of air quality impacts. The overall significance of the air quality impacts is determined based on comparison between the likely concentrations at the development and the air quality objectives. Where concentrations remain below the objectives, it can be concluded that the overall effect will be 'not significant'. The experience of the consultants preparing the report is set out in Appendix A5. Appendix A3 explains the approach in more detail.

'Air Quality Neutral'

4.9 The GLA's London Plan Guidance (Air Quality Neutral) (GLA, 2023a) sets out guidance on how an 'air quality neutral' assessment should be undertaken. It also provides a methodology for calculating an offsetting payment if a development is not 'air quality neutral' and it is not possible to identify or agree appropriate and adequate mitigation.

4.10 The guidance provides a simplified assessment approach for developments that are 'car free' and does not include any centralised combustion plant for the routine provision of energy. This simplified approach has been followed in this report.

5 Baseline Conditions

Relevant Features

5.1 The proposed development is located approximately 200 m to the northwest of the Camden Town tube station. The application site is bounded by Jamestown Road to the north, Arlington Road to the east and residential properties to the west and south. It currently consists of a vacant depot/ office and a temporary public car park.

5.2 The proposed development is located within an AQMA and adjacent to an air quality Focus Area, as highlighted in Figure 1.

Industrial Sources

5.3 No significant industrial or waste management sources have been identified that are likely to affect the proposed development, in terms of air quality.

Local Air Quality Monitoring

5.4 LBC operates five automatic monitoring stations within its area, with the 'CD010' roadside monitoring station being the closest station to the proposed development, located approximately 120 m to the east. The Council also operates a number of nitrogen dioxide monitoring sites using diffusion tubes prepared and analysed by Gradko International (using the 50% TEA in acetone method), with eight diffusion tube monitoring sites located within 200 m of the application site.

5.5 Annual mean results for the years 2019 to 2023 are summarised in Table 3. Exceedances of the objectives are shown in bold. The monitoring locations are shown in Figure 2. The monitoring data have been taken from LBC's 2023 Air Quality Annual Status Report (London Borough of Camden, 2024a).

Table 3: Summary of Annual Mean NO_2 Monitoring (2019-2023) (µg/m^3)

Site ID	Site Type	Location	2019	2020	2021	2022	2023
CD010	Automatic - Roadside	Camden High Street	-	-	30.0	29.0	28.0
CAM105	Roadside	Pratt-Delancey 16 – Parkway	**42.0**	35.9	34.0	31.0	30.6
CAM125	Roadside	Kentish Town Road	**45.0**	33.8	27.8	28.0	26.1
CAM126	Roadside	Hawley Crescent	38.9	32.3	25.7	26.4	22.1
CAM127	Roadside	Jamestown Road	38.7	29.9	25.8	22.6	21.1
CAM128	Roadside	Camden High Street (Bridge)	**41.5**	33.1	26.3	27.2	25.5
CAM129	Roadside	Camden High Street (Camden News)	38.8	30.5	29.7	27.8	26.2
CAM130	Roadside	Camden High Street (American Candy)	**47.7**	37.8	31.4	30.2	30.5

Site ID	Site Type	Location	2019	2020	2021	2022	2023
CAM131	Roadside	Brittania Junction	**53.9**	**40.7**	37.0	36.9	36.5
CAM132	Roadside	Cavendish School (Arlington Road)	34.0	26.9	22.7	23.3	20.6
Objective/Criteria			**40/38** [b]				

[a] Exceedances of the objectives are shown in bold.
[b] 38 µg/m³ is the CPG Criteria.

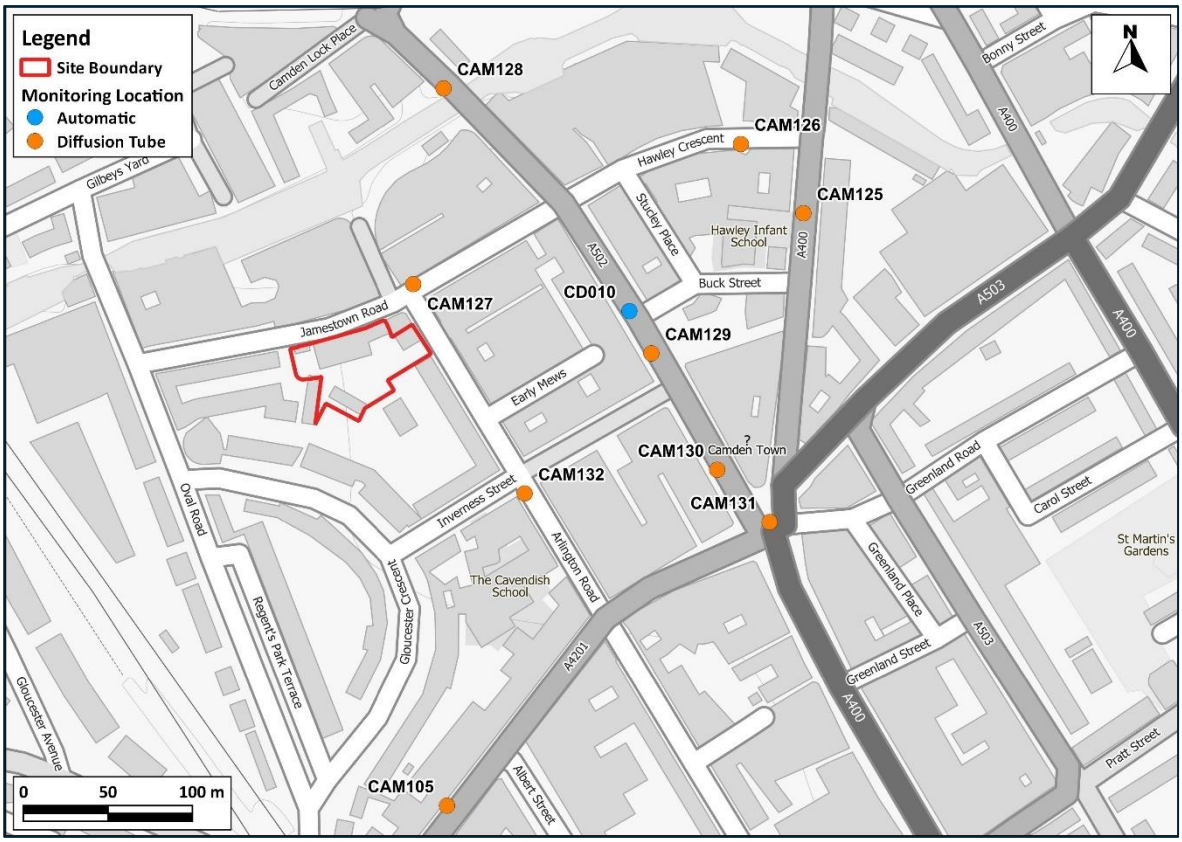

Figure 2: Monitoring Locations and the Application Site Boundary

Additional data sourced from third parties, including public sector information licensed under the Open Government Licence v3.0.

5.6 As shown in Table 3, exceedances of the annual mean nitrogen dioxide objective were measured at the 'CAM105', 'CAM125', 'CAM128' and 'CAM130' in 2019 only, and at the 'CAM131' in 2019 and 2020. All monitoring sites measured concentrations below the air quality objective in 2023, as well as below the CPG criteria. Furthermore, no exceedance of the 1-hour mean NO_2 objective was measured at the 'CD010' automatic monitoring station (in each of the years 2021 to 2023, zero hours were recorded with concentrations above 200 µg/m³ (London Borough of Camden, 2024a)), and annual mean concentrations were less than 60 µg/m³ at all nearby diffusion tube sites, indicating that it is unlikely that an exceedance of the 1-hour mean would occur at these locations.

5.7 The 'KGX' automatic monitoring station, located within 1.3 km of the proposed development, is the closest station which measures PM_{10} and $PM_{2.5}$ concentrations. Annual mean results for the years 2019 to 2023 are summarised in Table 4, while results relating to the daily mean objective are summarised

in Table 5, and its location is shown in Figure 3. Measured PM_{10} concentrations were well below the relevant objectives and CPG criteria; $PM_{2.5}$ concentrations were well below the objective and the GLA $PM_{2.5}$ target / CPG criteria was met in 2023.

Table 4: Summary of Annual Mean PM_{10} and $PM_{2.5}$ Monitoring (2019-2023) (µg/m³)

Site ID	Site Type	Location	2019	2020	2021	2022	2023
PM_{10}							
KGX	Urban Background / Industrial	Coopers Lane	15	13	13	15	14
Objective/CPG Criteria			**40/20 [a]**				
$PM_{2.5}$							
KGX	Urban Background / Industrial	Coopers Lane	-	-	-	10	8
Objective/GLA target / CPG Criteria			**20/10 [b]**				

[a] 20 µg/m³ is the CPG criteria.
[b] The 20 µg/m³ $PM_{2.5}$ objective, which was to be met by 2020, is not in Regulations and there is no requirement for local authorities to meet it. 10 µg/m³ is the GLA target and CPG criteria for annual mean $PM_{2.5}$; again, there is no requirement for local authorities to meet this.

Table 5: Number of Days With PM_{10} Concentrations Above 50 µg/m³

Site ID	Site Type	Location	2019	2020	2021	2022	2023
KGX	Urban Background / Industrial	Coopers Lane	5	1	0	5	1
Objective			**35**				

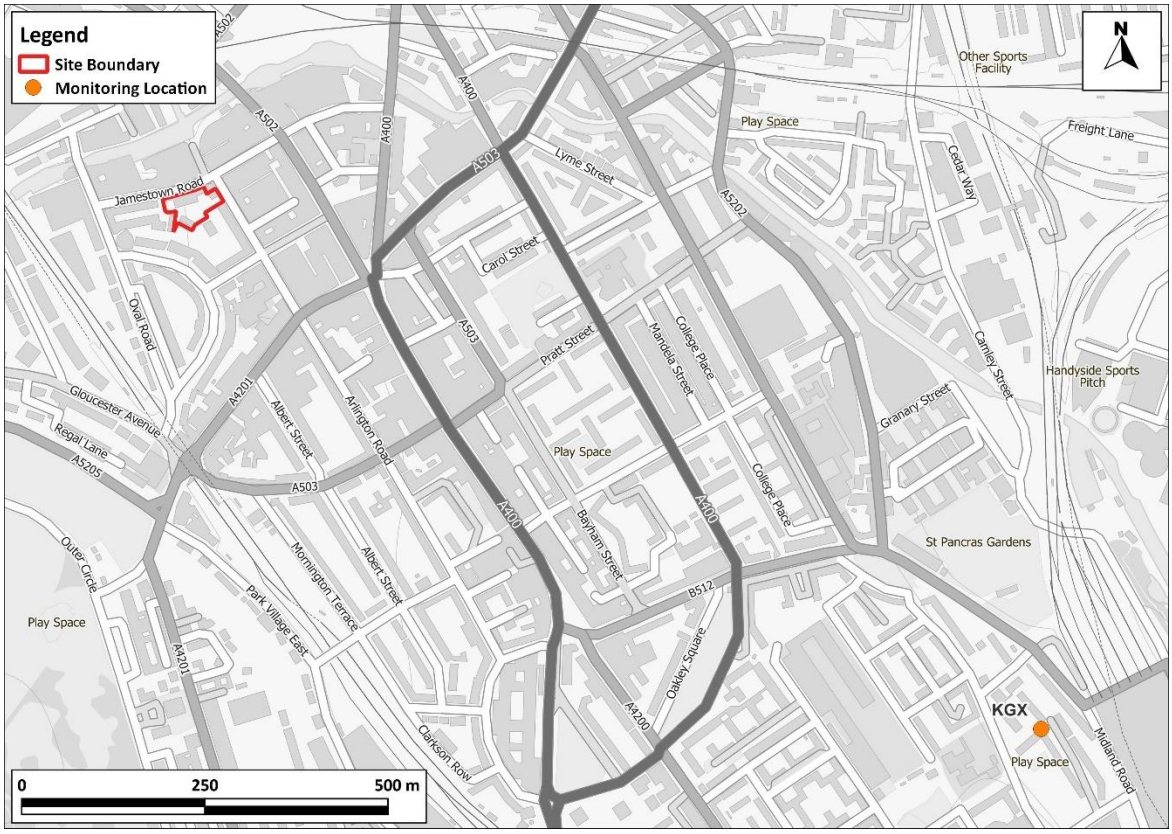

Figure 3: KGX Monitoring Location and the Application Site Boundary

Additional data sourced from third parties, including public sector information licensed under the Open Government Licence v3.0.

LAEI Mapped Concentrations

5.8 Modelled annual mean NO_2 concentrations presented in the LAEI database (GLA, 2023b), in the near vicinity of the proposed development are presented in Figure 4. The maximum modelled annual mean NO_2 concentration in 2025 within the proposed development site boundary (located in the northwest corner of the site) is 25.2 µg/m^3, which is well below the annual mean objective, as well as the CPG criteria.

5.9 The maximum modelled 2025 annual mean PM_{10} and $PM_{2.5}$ concentrations, within the site boundary, are 17.4 µg/m^3 and 10.6 µg/m^3 respectively, and are well below the respective objectives, as well as being below the PM_{10} CPG criteria, but marginally above the GLA $PM_{2.5}$ target / CPG criteria. The GLA $PM_{2.5}$ target / CPG criteria is, however, met by 2030, with the maximum predicted concentration being 9.7 µg/m^3 within the site boundary.

Figure 4: LAEI modelled 2025 NO_2 Concentrations

Additional data sourced from third parties, including public sector information licensed under the Open Government Licence v3.0.

6 Construction Phase Assessment

Construction Traffic

6.1 Regal London, who have prepared the Construction Logistics Plan (CLP), have confirmed that there will be seven Heavy Goods Vehicles (HGVs) in the peak year of construction works, which is well below the 25 AADT screening criterion recommended by EPUK/IAQM guidance (Moorcroft and Barrowcliffe et al, 2017). It is, therefore, not considered necessary to assess the impacts of traffic emissions during the construction phase and it can be concluded that the proposed development will not have a significant impact on local roadside air quality as a result of construction traffic emissions.

On-Site Exhaust Emissions

6.2 The IAQM guidance (IAQM, 2024) states:

"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. For site plant and on-site traffic, consideration should be given to the number of plant/vehicles and their operating hours and locations to assess whether a significant effect is likely to occur".

6.3 The number of NRMM able to operate at any one time on the Site will be limited by the small size of the site. In line with the GLA's Control of Dust and Emissions During Construction and Demolition SPG, and as describe in Appendix A4, NRMM are expected to comply with emissions standards. Additionally, there will be no idling when vehicles are not in use, and machinery will be located away from sensitive receptors as far as possible. It is judged that there is no risk of significant effects at existing receptors as a result of on-site machinery emissions.

Construction Dust and Particulate Matter Emissions

6.4 The construction works will give rise to a risk of dust impacts during demolition, earthworks and construction, as well as from trackout of dust and dirt by vehicles onto the public highway. Step 1 of the assessment procedure is to screen the need for a risk assessment. There are receptors within the distances set out in the guidance (see Appendix A3), thus a detailed assessment is required. The following section sets out Step 2 of the assessment procedure.

Potential Dust Emission Magnitude

Demolition

6.5 There will be a requirement to demolish the existing buildings with an approximate total volume of 7,000 m^3 and an approximate duration of 18 weeks. A mobile crusher may be used on site before removal of the material; if used the crushing plant may require a valid Environmental Permitting Regulations permit. Based on the example definitions set out in Table A3-1in Appendix A1, the dust emission class for demolition is considered to be *medium*.

Earthworks

6.6 The characteristics of the soil at the site have been defined using the British Geological Survey's UK Soil Observatory website (British Geological Survey, 2024), as set out in Table 6. Overall, it is considered that, when dry, this soil has the potential to be moderately dusty.

Table 6: Summary of Soil Characteristics

Category	Record
Soil Layer Thickness	Deep
Soil Parent Material Grain Size	Argillaceous [a]
European Soil Bureau Description	Prequaternary Marine / Estuarine Sand and Silt
Soil Group	Medium to Light (Silty) to Heavy
Soil Texture	Clayey Loam [b] to Silty Loam

[a] grain size < 0.06 mm.
[b] a loam is composed mostly of sand and silt.

6.7 The site covers approximately 2,700 m^2 and a section of this will be subject to earthworks, involving removal of the foundations of the demolished buildings and lowering of the existing basement by approximately 1 m. Dust will arise mainly from the handling of dusty materials (such as dry soil). Based on the example definitions set out in in Appendix A1, the dust emission class for earthworks is considered to be *small*.

Construction

6.8 The proposed development involves the construction of the two buildings to house the student accommodation units and affordable homes, with an approximate building volume of 33,000 m^3. Dust will arise from the handling and storage of dusty materials and piling. Based on the example definitions set out in Appendix A3, the dust emission class for construction is considered to be *medium*.

Trackout

6.9 Regal London have confirmed that the maximum number of heavy vehicles accessing the site on the peak day of construction works, which may track out dust and dirt, will be less than 20 outward heavy vehicle movements. Based on the example definitions set out in Table A3-1 in Appendix A3, the dust emission class for trackout is considered to be *small*.

6.10 Table 7 summarises the dust emission magnitude for the proposed development.

Table 7: Summary of Dust Emission Magnitude

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

Sensitivity of the Area

6.11 This assessment step combines the sensitivity of individual receptors to dust effects with the number of receptors in the area and their proximity to the site. It also considers additional site-specific factors such as topography and screening, and in the case of sensitivity to human health effects, baseline PM_{10} concentrations.

6.12 The IAQM guidance, upon which the GLA's guidance is based, explains that residential properties are 'high' sensitivity receptors to dust soiling and human health effects, while places of work are a 'medium' sensitivity receptor (Table A3-2 in Appendix A3). There are approximately 15 residential properties and three places of work within 20 m of the site (see Figure 5).

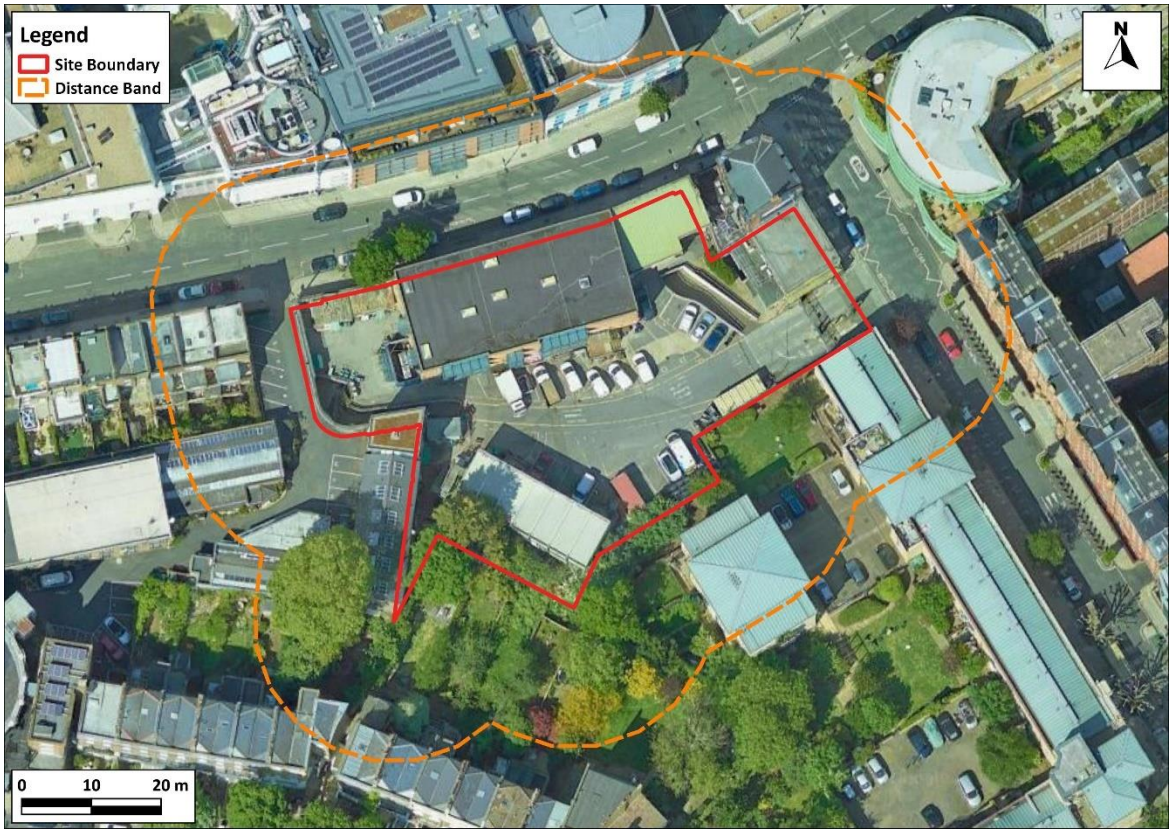

Figure 5: 20 m Distance Band around Application Site Boundary

Imagery ©2024 Airbus, Maxar Technologies.

6.13 The IAQM guidance (IAQM, 2024) explains that there is a risk of material being tracked 250 m from the site exit. Since it is not known which roads construction vehicles will use, it has been assumed that all possible routes could be affected. There are more than 100 residential properties and a number of places of work within 20 m of the roads along which material could be tracked (see Figure 6).

Figure 6: 20 m Distance Band around Roads Used by Construction Traffic Within 250 m of the Site Exit

Imagery ©2024 Airbus, Maxar Technologies.

Sensitivity of the Area to Effects from Dust Soiling

6.14 Using the information set out in Paragraph 6.12 and Figure 5 alongside the matrix set out in Table A3-3 in Appendix A3, the area surrounding the onsite works is of 'high' sensitivity to dust soiling. Using the information set out in Paragraph 6.13 and Figure 6 alongside the same matrix, the area is also of 'high' sensitivity to dust soiling due to trackout.

Sensitivity of the Area to any Human Health Effects

6.15 The matrix in Table A3-4 in Appendix A3 requires information on the baseline annual mean PM_{10} concentration in the area. Predictions from the LAEI database indicate that, in 2025, the highest PM_{10} concentrations within the areas that may be affected by site activities or trackout (the areas shown in Figure 5 and Figure 6) occur alongside the A502, however, concentrations remain below 24 µg/m^3.

6.16 Using the information set out in Paragraphs 6.12 and Figure 5 alongside the matrix in Table A3-4 in Appendix A3, the area surrounding the onsite works is of 'low' sensitivity to human health effects. Using the information set out in Paragraph 6.13 and Figure 6 alongside the same matrix, the area surrounding roads along which material may be tracked from the site is of 'medium' sensitivity.

Sensitivity of the Area to any Ecological Effects

6.17 The guidance only considers designated ecological sites within 50 m to have the potential to be impacted by the construction works. There are no designated ecological sites within 50 m of the site boundary or those roads along which material may be tracked, thus ecological impacts will not be considered further.

Summary of the Area Sensitivity

6.18 Table 8 summarises the sensitivity of the area around the proposed construction works.

Table 8: Summary of the Area Sensitivity

Effects Associated With:	Sensitivity of the Surrounding Area	
	On-site Works	Trackout
Dust Soiling	High Sensitivity	High Sensitivity
Human Health	Low Sensitivity	Medium Sensitivity

Risk and Significance

6.19 The dust emission magnitudes in Table 7 have been combined with the sensitivities of the area in Table 8 using the matrix in Table A3-6 in Appendix A3, in order to assign a risk category to each activity. The resulting risk categories for the four construction activities, without mitigation, are set out in Table 9. These risk categories have been used to determine the appropriate level of mitigation as set out in Section 9 (step 3 of the assessment procedure).

Table 9: Summary of Risk of Impacts Without Mitigation

Source	Dust Soiling	Human Health
Demolition	Medium Risk	Low Risk
Earthworks	Low Risk	Negligible
Construction	Medium Risk	Low Risk
Trackout	Low Risk	Low Risk

6.20 The IAQM guidance does not provide a method for assessing the significance of effects before mitigation and advises that pre-mitigation significance should not be determined. With appropriate mitigation in place, the IAQM guidance is clear that the residual effect will normally be 'not significant' (IAQM, 2024).

7 Operational Phase Assessment

Impacts at Existing Receptors

7.1 Iceni, the appointed transport consultant for the scheme, have confirmed that the proposed development will be 'car-free' and will provide no on-site parking. The Proposed Development will generate trips associated with servicing and deliveries; however, the number of movements will significantly reduce compared to existing traffic generated by the site. The number of movements will therefore be well below the screening threshold of 100 LDVs and 25 HDVs recommended for use inside of an AQMA in the EPUK/IAQM guidance (Moorcroft and Barrowcliffe et al, 2017) (see Appendix A1). As such, it is judged that the relevant screening thresholds will not be exceeded and there is no requirement for a detailed assessment of road traffic impacts at existing receptors.

7.2 A diesel generator is proposed for the provision of backup, secondary power. The generator will only operate routinely during testing and maintenance. The generator will be approximately 250kW/ 315kVA, and the flue will be taken to the roof of the building, approximately 26 m above ground, where dispersion conditions are optimal, and higher than all surrounding buildings.

7.3 The testing regime will comprise a monthly test, for up to 30 minutes, as well as a three-hour run every six months; the generator emissions will therefore affect up to 16 hours per annum. Therefore, the generators will not operate frequently enough to cause an exceedance of the hourly mean objective (which allows 18 hours above the objective before there is an exceedance) or the 24-hour objective for PM_{10} (which allows no more than 35 days). These tests are also likely to occur under a variety of meteorological conditions (and wind directions), meaning that it is unlikely that any periods of elevated concentrations would occur at the same location each time the generators are run. Given the low number of annual operating hours and the relatively small size of the generator, the NOx emission rate of the generators is expected to be well below 5 mg/sec when the emissions generated during testing are averaged over a year. Therefore, in accordance with the EPUK/IAQM screening criteria, the effect on local air quality of emissions associated with the proposed emergency generator testing is considered insignificant.

7.4 It can be concluded that the proposed development will not have a significant impact on local air quality.

Impacts of Existing Sources on Future Residents of the Development

7.5 Measured NO_2 concentrations at all nearby monitoring sites were below the annual mean objective and CPG criteria in 2023 (Table 3). Roadside diffusion tube 'CAM127', located along Jamestown Road, approximately 25 m to the east of the proposed development, measured a NO_2 concentration of 21.1 µg/m^3 in 2023; given its comparable location, it is considered to be the most representative of existing air quality conditions at the proposed development.

7.6 'CAM127' is located within 0.5 m of the kerb of Jamestown Road; closer than the nearest proposed development façade which is setback by 3.7 m. Retail / commercial land uses are proposed at ground floor level closest to Jamestown Road, with residential units at ground floor level facing Arlington Road. Residential exposure within the buildings fronting Jamestown Road is located on the first floor and above. Defra states that in its LAQM TG22 guidance (Defra, 2022) that "*concentrations fall-off rapidly on moving away from the source*", such that it is expected concentrations at the development façade will be lower than those measured at 'CAM127'.

7.7 With regards to PM_{10} and $PM_{2.5}$ concentrations, and as previously discussed in Paragraph 5.7 , there have been no measured exceedances of the relevant PM_{10} and $PM_{2.5}$ objectives in recent years

(London Borough of Camden, 2024a) at KGX, the nearest monitoring site representative of the proposed development, 1.3 km from the site. The measured concentrations in 2023 are 14.0 µg/m^3 and 8.0 µg/m^3, respectively. As such, it is reasonable to conclude that PM_{10} and $PM_{2.5}$ concentrations at the proposed development will also be below the respective objectives and CPG Criteria.

7.8 Pollutant concentrations are expected to continue to reduce in future years due to improvements in emissions standards, increased uptake of low emissions vehicles and the implementation of local and national measures and therefore concentrations are likely to be lower in the development opening year of 2028.

7.9 This is supported by predicted concentrations taken from the LAEI database; as discussed in Paragraphs 5.8 and 5.9, predicted concentrations of NO_2 in 2025 are well below the annual mean objective, as well as the CPG criteria. Predicted PM_{10} and $PM_{2.5}$ concentrations in 2025 are well below the respective objectives, as well as being below the PM_{10} CPG criteria. The predicted 2025 $PM_{2.5}$ concentration is marginally above the GLA $PM_{2.5}$ target / CPG criteria, however, this is met by 2030.

7.10 Taking the above into account, is it judged that future residents of the proposed development will experience acceptable air quality.

8 'Air Quality Neutral'

8.1 The purpose of the London Plan's requirement that development proposals be 'air quality neutral' is to prevent the gradual deterioration of air quality throughout Greater London. The 'air quality neutrality' of a proposed development, as assessed in this section, does not directly indicate the potential of the proposed development to have significant impacts on human health (this has been assessed separately in the previous section). The air quality neutral assessment has been undertaken using the latest GLA's London Plan Guidance (Air Quality Neutral) (GLA, 2023a).

Building Emissions

8.2 The proposed development does not include any combustion plant for the routine provision of electricity, heating or hot water and will thus have no direct building emissions. Paragraph 2.2.1 of the guidance states that developments which "*do not include new combustion plant such as gas-fired boilers*" are "*assumed to be Air Quality Neutral*". It will include a diesel generator, however the GLA's Air Quality Neutral guidance states that "*backup plant installed for emergency and life safety power supply, such as diesel generators, may be excluded from the calculation of predicted building emissions*".

8.3 The proposed development is, therefore, better than air quality neutral in terms of building emissions.

Road Transport Emissions

8.4 The proposed development is classified as a 'major' development, but also as 'car-free'. Paragraph 4.1.2 of the GLA's Air Quality Neutral guidance states "*where major development meet the definition of 'car-free', they can be assumed to meet the TEB*".

8.5 The proposed development is thus air quality neutral in terms of transport emissions.

Summary

8.6 The proposed development therefore complies with the requirement that all new developments in London should be at least air quality neutral.

9 Mitigation

Good Design and Best Practice

9.1 The EPUK/IAQM guidance advises that good design and best practice measures should be considered whether or not more specific mitigation is required.

9.2 The EPUK/IAQM guidance predates the recent publication by Defra of long-term air quality targets for $PM_{2.5}$. While it is not appropriate to determine individual planning applications based on whether future $PM_{2.5}$ concentrations in an area will be above or below the concentration target, it is nevertheless appropriate that new development contributes to meeting the national targets by ensuring that air quality is taken into account in development design.

9.3 The Proposed Development incorporates the following good design and best practice measures, which have been accounted for in the assessment as far as is possible:

- setting back of the development buildings from Jamestown Road and Arlington Road;
- scheme design such that the most sensitive uses (residential) are the furthest from source of pollution (roads), for example the ground floor facing Jamestown Road is commercial, with residential occupation only on the first floor and above;
- provision of a detailed Travel Plan setting out measures to encourage sustainable means of transport (public, cycling and walking), as well as a Delivery and Servicing Plan (DSP);
- provision of pedestrian and cycle access to the new development, including secure cycle parking at ground floor and basement level;
- use of ASHPs for the provision of heat and hot water, to avoid the need for on-site combustion; and
- routing the emergency generator's flue to the roof of the building, exhausting vertically and unimpeded, at a location with good dispersion conditions.

Recommended Mitigation

Construction Impacts

9.4 Measures to mitigate dust emissions will be required during the construction phase of the development in order to minimise effects upon nearby sensitive receptors.

9.5 The site has been identified as a *Medium* Risk site during demolition and construction and as a *Low* Risk during earthworks and trackout, as set out in Table 9. The GLA's SPG on *The Control of Dust and Emissions During Construction and Demolition* (GLA, 2014) describes measures that should be employed, as appropriate, to reduce the impacts, along with guidance on what monitoring should be undertaken during the construction phase. This reflects best practice experience and has been used, together with the professional experience of the consultant who has undertaken the dust impact assessment and the findings of the assessment, to draw up a set of measures that should be incorporated into the specification for the works. These measures are described in Appendix A4.

9.6 The mitigation measures should be written into a dust management plan (DMP). The DMP may be integrated into a Code of Construction Practice or the Construction Environmental Management Plan and may require monitoring. The GLA's guidance suggests that, for a Medium Risk site, automatic monitoring of particulate matter (as PM_{10}) will be required. It also states that, on certain

sites, it may be appropriate to determine the existing (baseline) pollution levels before work begins. However, the guidance is clear that the Local Authority should advise as to the appropriate air quality monitoring procedure and timescale on a case-by-case basis.

9.7 Where mitigation measures rely on water, it is expected that only sufficient water will be applied to damp down the material. There should not be any excess to potentially contaminate local watercourses.

Operational Impacts

9.8 The assessment has demonstrated that the overall air quality effect of the proposed development will be 'not significant'. It is, therefore, not considered appropriate to propose further mitigation measures for this development.

10 Conclusions

10.1 The assessment has considered the impacts of the proposed development on local air quality in terms of dust and particulate matter emissions during construction and emissions from road traffic and emergency generator by the completed and occupied development. It has also identified the air quality conditions that future residents will experience.

Construction Impacts

10.2 The construction works have the potential to create dust. During construction it will therefore be necessary to apply a package of mitigation measures to minimise dust emissions. Appropriate measures have been recommended and, with these measures in place, it is expected that any residual effects will be 'not significant'.

Operational Impacts

10.3 Air quality conditions for future residents of the proposed development have been shown to be acceptable, with concentrations well below the air quality objectives throughout the site. Concentrations will also meet the CPG criteria.

10.4 The traffic generated by the proposed development will be below industry screening thresholds and the emissions from the testing of the emergency generator will be very infrequent. The proposed development will have a negligible impact on air quality conditions at all existing receptors.

Mitigation

10.5 Measures to reduce emissions from the development include secure cycle storage and an all-electric energy strategy. The development will have no adverse effects on local air quality and does not introduce new exposure within an area of poor air quality, thus no additional mitigation has been proposed for the operational impacts.

Significance

10.6 The overall operational air quality effects of the proposed development are judged to be 'not significant'. This conclusion is based on the emissions sources all being below screening criteria, while concentrations for future residents of the proposed development will be below the relevant objectives and criteria.

Air Quality Neutral

10.7 As the development is car free and does not include any on-site combustion plant for the routine provision of energy, the proposed development complies with the requirement that all new developments in London should be at least air quality neutral.

Policy Implications

10.8 Taking into account these conclusions, it is judged that the proposed development is consistent with Paragraph 191 of the NPPF, being appropriate for its location both in terms of its effects on the local air quality environment and the air quality conditions for future residents. It is also consistent with Paragraph 192, as it will not affect compliance with relevant limit values or national objectives. Reword as necessary.

10.9 The proposed development is also consistent with Policy CC4 of LBC's Local Plan, as the development does not increase exposure to poor air quality, and with Policy T2 as it will be 'car-free'.

10.10 The proposed development is also compliant with Policy SI 1 of the London Plan in the following ways:

- it will not lead to further deterioration of existing poor air quality;
- it will not create unacceptable risk of high levels of exposure to poor air;
- the proposed development has been designed to minimise emissions and exposure, rather than post-design mitigation; and
- it is better than air quality neutral.

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12 Glossary

AADT	Annual Average Daily Traffic
AQAL	Air Quality Assessment Level
AQC	Air Quality Consultants
AQMA	Air Quality Management Area
BEB	Building Emissions Benchmark
CAZ	Clean Air Zone
Defra	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
DMP	Dust Management Plan
EPUK	Environmental Protection UK
EU	European Union
EV	Electric Vehicle
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
Focus Area	Location that not only exceeds the annual mean limit value for NO_2 but also has a high level of human exposure
GLA	Greater London Authority
HDV	Heavy Duty Vehicles (> 3.5 tonnes)
IAQM	Institute of Air Quality Management
LAEI	London Atmospheric Emissions Inventory
LAQM	Local Air Quality Management
LBC	London Borough of Camden
LDF	Local Development Framework
LDV	Light Duty Vehicles (<3.5 tonnes)
LEZ	Low Emission Zone
µg/m^3	Microgrammes per cubic metre
NO_2	Nitrogen dioxide
NPPF	National Planning Policy Framework
NRMM	Non-road Mobile Machinery

OEP	Office for Environmental Protection
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
OLEV	Office for Low Emission Vehicles
PHV	Private Hire Vehicle
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
PPG	Planning Practice Guidance
SPG	Supplementary Planning Guidance
SPD	Supplementary Planning Document
Standards	A nationally defined set of concentrations for nine pollutants below which health effects do not occur or are minimal
TEA	Triethanolamine – used to absorb nitrogen dioxide
TEB	Transport Emissions Benchmark
TfL	Transport for London
ULEZ	Ultra Low Emission Zone
WHO	World Health Organisation

13 Appendices

A1 EPUK & IAQM Planning for Air Quality Guidance

A1.1 The guidance issued by EPUK and IAQM (Moorcroft and Barrowcliffe et al, 2017) is comprehensive in its explanation of the place of air quality in the planning regime. Key sections of the guidance not already mentioned above are set out below.

Air Quality as a Material Consideration

"Any air quality issue that relates to land use and its development is capable of being a material planning consideration. The weight, however, given to air quality in making a planning application decision, in addition to the policies in the local plan, will depend on such factors as:

- the severity of the impacts on air quality;
- the air quality in the area surrounding the proposed development;
- the likely use of the development, i.e. the length of time people are likely to be exposed at that location; and
- the positive benefits provided through other material considerations".

Recommended Best Practice

A1.2 The guidance goes into detail on how all development proposals can and should adopt good design principles that reduce emissions and contribute to better air quality management. It states:

"The basic concept is that good practice to reduce emissions and exposure is incorporated into all developments at the outset, at a scale commensurate with the emissions".

A1.3 The guidance sets out a number of good practice principles that should be applied to all developments that:

- include 10 or more dwellings;
- where the number of dwellings is not known, residential development is carried out on a site of more than 0.5 ha;
- provide more than 1,000 m^2 of commercial floorspace;
- are carried out on land of 1 ha or more.

A1.4 The good practice principles are that:

- New developments should not contravene the Council's Air Quality Action Plan, or render any of the measures unworkable;
- Wherever possible, new developments should not create a new "street canyon", as this inhibits pollution dispersion;
- Delivering sustainable development should be the key theme of any application;
- New development should be designed to minimise public exposure to pollution sources, e.g. by locating habitable rooms away from busy roads;

- The provision of at least 1 Electric Vehicle (EV) "rapid charge" point per 10 residential dwellings and/or 1000 m^2 of commercial floorspace. Where on-site parking is provided for residential dwellings, EV charging points for each parking space should be made available;
- Where development generates significant additional traffic, provision of a detailed travel plan (with provision to measure its implementation and effect) which sets out measures to encourage sustainable means of transport (public, cycling and walking) via subsidised or free-ticketing, improved links to bus stops, improved infrastructure and layouts to improve accessibility and safety;
- All gas-fired boilers to meet a minimum standard of <40 mgNOx/kWh;
- Where emissions are likely to impact on an AQMA, all gas-fired CHP plant to meet a minimum emissions standard of:

    iii) Spark ignition engine: 250 mgNOx/Nm^3;

    iv) Compression ignition engine: 400 mgNOx/Nm^3;

    v) Gas turbine: 50 mgNOx/Nm^3.

A1.5 A presumption should be to use natural gas-fired installations. Where biomass is proposed within an urban area it is to meet minimum emissions standards of 275 mgNOx/Nm^3 and 25 mgPM/Nm^3.

A1.6 The guidance also outlines that offsetting emissions might be used as a mitigation measure for a proposed development. However, it states that:

"It is important that obligations to include offsetting are proportional to the nature and scale of development proposed and the level of concern about air quality; such offsetting can be based on a quantification of the emissions associated with the development. These emissions can be assigned a value, based on the "damage cost approach" used by Defra, and then applied as an indicator of the level of offsetting required, or as a financial obligation on the developer. Unless some form of benchmarking is applied, it is impractical to include building emissions in this approach, but if the boiler and CHP emissions are consistent with the standards as described above then this is not essential".

A1.7 The guidance offers a widely used approach for quantifying costs associated with pollutant emissions from transport. It also outlines the following typical measures that may be considered to offset emissions, stating that measures to offset emissions may also be applied as post assessment mitigation:

- Support and promotion of car clubs;
- Contributions to low emission vehicle refuelling infrastructure;
- Provision of incentives for the uptake of low emission vehicles;
- Financial support to low emission public transport options; and
- Improvements to cycling and walking infrastructures.

Screening

Impacts of the Local Area on the Development

"There may be a requirement to carry out an air quality assessment for the impacts of the local area's emissions on the proposed development itself, to assess the exposure that residents or users might experience. This will need to be a matter of judgement and should take 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 nitrogen dioxide), 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".

Impacts of the Development on the Local Area

A1.8 The guidance sets out two stages of screening criteria that can be used to identify whether a detailed air quality assessment is required, in terms of the impact of the development on the local area. The first stage is that you should proceed to the second stage if any of the following apply:

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

A1.9 Coupled with any of the following:

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

A1.10 If the above do not apply then the development can be screened out as not requiring a detailed air quality assessment of the impact of the development on the local area. If they do apply then you proceed to stage 2, which sets out indicative criteria for requiring an air quality assessment. The stage 2 criteria relating to vehicle emissions are set out below:

- the development will lead to a change in LDV flows of more than 100 AADT within or adjacent to an AQMA or more than 500 AADT elsewhere;
- the development will lead to a change in HDV flows of more than 25 AADT within or adjacent to an AQMA or more than 100 AADT elsewhere;
- the development will lead to a realigning of 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;
- the development will introduce a new junction or remove an existing junction near to relevant receptors, and the junction will cause traffic to significantly change vehicle acceleration/deceleration, e.g. traffic lights or roundabouts;

- the development will introduce or change a bus station where bus flows will change by more than 25 AADT within or adjacent to an AQMA or more than 100 AADT elsewhere; and
- the development will have an underground car park with more than 100 movements per day (total in and out) with an extraction system that exhausts within 20 m of a relevant receptor.

A1.11 The criteria are more stringent where the traffic impacts may arise on roads where concentrations are close to the objective. The presence of an AQMA is taken to indicate the possibility of being close to the objective, but where whole authority AQMAs are present and it is known that the affected roads have concentrations below 90% of the objective, the less stringent criteria are likely to be more appropriate.

A1.12 On combustion processes (including standby emergency generators and shipping) where there is a risk of impacts at relevant receptors, the guidance states that:

"Typically, any combustion plant where the single or combined NOx emission rate is less than 5 mg/sec is unlikely to give rise to impacts, provided that the emissions are released from a vent or stack in a location and at a height that provides adequate dispersion. As a guide, the 5 mg/s criterion equates to a 450 kW ultra-low NOx gas boiler or a 30kW CHP unit operating at <95mg/Nm^3.

In situations where the emissions are released close to buildings with relevant receptors, or where the dispersion of the plume may be adversely affected by the size and/or height of adjacent buildings (including situations where the stack height is lower than the receptor) then consideration will need to be given to potential impacts at much lower emission rates.

Conversely, where existing nitrogen dioxide concentrations are low, and where the dispersion conditions are favourable, a much higher emission rate may be acceptable".

A1.13 Should none of the above apply then the development can be screened out as not requiring a detailed air quality assessment of the impact of the development on the local area, provided that professional judgement is applied; the guidance importantly states the following:

"The criteria provided are precautionary and should be treated as indicative. They are intended to function as a sensitive 'trigger' for initiating an assessment in cases where there is a possibility of significant effects arising on local air quality. This possibility will, self-evidently, not be realised in many cases. The criteria should not be applied rigidly; in some instances, it may be appropriate to amend them on the basis of professional judgement, bearing in mind that the objective is to identify situations where there is a possibility of a significant effect on local air quality".

A1.14 Even if a development cannot be screened out, the guidance is clear that a detailed assessment is not necessarily required:

"The use of a Simple Assessment may be appropriate, where it will clearly suffice for the purposes of reaching a conclusion on the significance of effects on local air quality. The principle underlying this guidance is that any assessment should provide enough evidence that will lead to a sound conclusion on the presence, or otherwise, of a significant effect on local air quality. A Simple Assessment will be appropriate, if it can provide this evidence. Similarly, it may be possible to conduct a quantitative assessment that does not require the use of a dispersion model run on a computer".

A1.15 The guidance also outlines what the content of the air quality assessment should include, and this has been adhered to in the production of this report.

Assessment of Significance

A1.16 There is no official guidance in the UK in relation to development control on how to describe the nature of air quality impacts, nor how to assess their significance. The approach within the EPUK/IAQM guidance has, therefore, been used in this assessment. This approach involves a two stage process:

- a qualitative or quantitative description of the impacts on local air quality arising from the development; and
- a judgement on the overall significance of the effects of any impacts.

A1.17 The guidance recommends that the assessment of significance should be based on professional judgement, with the overall air quality impact of the development described as either 'significant' or 'not significant'. In drawing this conclusion, the following factors should be taken into account:

- the existing and future air quality in the absence of the development;
- the extent of current and future population exposure to the impacts;
- the influence and validity of any assumptions adopted when undertaking the prediction of impacts;
- the potential for cumulative impacts and, in such circumstances, several impacts that are described as '*slight*' individually could, taken together, be regarded as having a significant effect for the purposes of air quality management in an area, especially where it is proving difficult to reduce concentrations of a pollutant. Conversely, a '*moderate*' or '*substantial*' impact may not have a significant effect if it is confined to a very small area and where it is not obviously the cause of harm to human health; and
- the judgement on significance relates to the consequences of the impacts; will they have an effect on human health that could be considered as significant? In the majority of cases, the impacts from an individual development will be insufficiently large to result in measurable changes in health outcomes that could be regarded as significant by health care professionals.

A1.18 The guidance is clear that other factors may be relevant in individual cases. It also states that the effect on the residents of any new development where the air quality is such that an air quality objective is not met will be judged as significant. For people working at new developments in this situation, the same will not be true as occupational exposure standards are different, although any assessment may wish to draw attention to the undesirability of the exposure.

A1.19 A judgement of the significance should be made by a competent professional who is suitably qualified. A summary of the professional experience of the staff contributing to this assessment is provided in Appendix A5.

A2 Policy

Air Quality Strategy 2007

A2.1 The Air Quality Strategy (Defra, 2007) published by the Department for Environment, Food, and Rural Affairs (Defra) and Devolved Administrations, provides the policy framework for air quality management and assessment in the UK. It provides air quality standards and objectives for key air pollutants, which are designed to protect human health and the environment. It also sets out how the different sectors: industry, transport and local government, can contribute to achieving the air quality objectives.

Air Quality Strategy 2023

A2.2 The Air Quality Strategy: Framework for Local Authority Delivery 2023 (Defra, 2023a) sets out the strategic air quality framework for local authorities and other Air Quality Partners in England. It sets out their powers and responsibilities, and actions the government expects them to take. It does not replace other air quality guidance documents relevant to local authorities.

Clean Air Strategy 2019

A2.3 The Clean Air Strategy (Defra, 2019) sets out a wide range of actions by which the UK Government, in partnership with the Governments of Scotland, Wales and Northern Ireland, will seek to reduce pollutant emissions and improve air quality. Actions are targeted at four main sources of emissions: Transport, Domestic, Farming and Industry. At this stage, there is no straightforward way to take account of the expected future benefits to air quality within this assessment.

Emissions from Road Transport: Road to Zero Strategy

A2.4 The Office for Low Emission Vehicles (OLEV) and Department for Transport (DfT) published a Policy Paper (DfT, 2018) in July 2018 outlining how the government will support the transition to zero tailpipe emission road transport and reduce tailpipe emissions from conventional vehicles during the transition. This paper affirms the Government's pledge to end the sale of new conventional petrol and diesel cars and vans by 2040, and states that the Government expects the majority of new cars and vans sold to be 100% zero tailpipe emission and all new cars and vans to have significant zero tailpipe emission capability by this year, and that by 2050 almost every car and van should have zero tailpipe emissions. It states that the Government wants to see at least 50%, and as many as 70%, of new car sales, and up to 40% of new van sales, being ultra-low emission by 2030.

A2.5 The paper sets out a number of measures by which Government will support this transition but is clear that Government expects this transition to be industry and consumer led. The Government has recently announced that 80% of new cars and 70% of new vans sold in Great Britain must be zero emission by 2030, increasing to 100% by 2035. If these ambitions are realised then road traffic-related NOx emissions can be expected to reduce significantly over the coming decades.

Environment Act 2021

A2.6 The UK's new legal framework for protection of the natural environment, the Environment Act (2021)) passed into UK law in November 2021. The Act gives the Government the power to set long-term, legally binding environmental targets. It also establishes an Office for Environmental Protection (OEP), responsible for holding the government to account and ensuring compliance with these targets.

A2.7 The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 (SI 2023 No. 96) sets two new targets for future concentrations of $PM_{2.5}$. These targets are described in Paragraph **Error! Reference source not found.**.

Environmental Improvement Plan 2023

A2.8 Defra published its 25 Year Environment Plan in 2018 (Defra, 2018a). The Environment Act (2021) requires Defra to review this Plan at least every five years. The Environmental Improvement Plan 2023 (Defra, 2023b) is the first revision. This outlines the progress made since 2018 and adds detail to the goals defined in the 2018 Plan, including that of achieving clean air.

A2.9 The Environmental Improvement Plan 2023 sets out the new air quality targets which have been set for concentrations of $PM_{2.5}$. These targets, which are described in more detail in Paragraph **Error! Reference source not found.**, include the long-term targets in the Statutory Instrument described in Paragraph A2.7, and interim targets to be achieved by 2028.

A2.10 The 2023 Plan outlines the role of local authorities in helping it meet both its targets and existing commitments. It also outlines the respective roles of industry, agricultural sectors, and the Department for Transport in providing the coordinated action required to meet both its new, and pre-existing targets and commitments.

Planning Policy

National Policies

A2.11 The National Planning Policy Framework (NPPF) (2023) sets out planning policy for England. It states that the purpose of the planning system is to contribute to the achievement of sustainable development, and that the planning system has three overarching objectives, one of which (Paragraph 8c) is an environmental objective:

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

A2.12 To prevent unacceptable risks from air pollution, Paragraph 180 of the NPPF states that:

"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 quality".

A2.13 Paragraph 191 states:

"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".

A2.14 More specifically on air quality, Paragraph 192 makes clear 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.".

A2.15 The NPPF is supported by Planning Practice Guidance (PPG) (Ministry of Housing, Communities & Local Government, 2019), which includes guiding principles on how planning can take account of the impacts of new development on air quality.

A2.16 The PPG sets out the information that may be required in an air quality assessment, making clear 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".

London-Specific Policies

The London Plan

A2.17 The London Plan (GLA, 2021) sets out an integrated economic, environmental, transport and social framework for the development of London over the next 20-25 years. The key policy relating to air quality is Policy SI 1 on Improving air quality, Part B1 of which sets out three key requirements for developments:

"Development proposals should not:

lead to further deterioration of existing poor air quality

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

create unacceptable risk of high levels of exposure to poor air quality".

A2.18 The Policy then details how developments should meet these requirements, stating:

"In order to meet the requirements in Part 1, as a minimum:

development proposals must be at least Air Quality Neutral

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

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

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".

A2.19 Regarding construction and demolition impacts, Part D of Policy SI 1 of the London Plan states:

"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".

A2.20 Part E of Policy SI 1 states the following regarding mitigation and offsetting of emissions:

"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".

London Environment Strategy

A2.21 The London Environment Strategy was published in May 2018 (GLA, 2018a). The strategy considers air quality in Chapter 4; the Mayor's main objective is to create a "zero emission London by 2050". Policy 4.2.1 aims to "reduce emissions from London's road transport network by phasing out fossil fuelled vehicles, prioritising action on diesel, and enabling Londoners to switch to more sustainable forms of transport". The strategy sets a target to achieve, by 2030, the guideline value for $PM_{2.5}$ which was set by the World Health Organisation (WHO) in 2005. An implementation plan for the strategy has also been published which sets out what the Mayor will do between 2018 and 2023 to help achieve the ambitions in the strategy.

Mayor's Transport Strategy

A2.22 The Mayor's Transport Strategy (GLA, 2018b) sets out the Mayor's policies and proposals to reshape transport in London over the next two decades. The Strategy focuses on reducing car dependency and increasing active sustainable travel, with the aim of improving air quality and creating healthier streets. It notes that development proposals should "*be designed so that walking and cycling are the most appealing choices for getting around locally*".

GLA SPG: The Control of Dust and Emissions During Construction and Demolition

A2.23 The GLA's SPG on The Control of Dust and Emissions During Construction and Demolition (GLA, 2014) outlines a risk assessment based approach to considering the potential for dust generation from a construction site, and sets out what mitigation measures should be implemented to minimise the risk of construction dust impacts, dependent on the outcomes of the risk assessment. This guidance is largely based on the Institute of Air Quality Management's (IAQM's) guidance (IAQM, 2024), and it states that "the latest version of the IAQM Guidance should be used".

GLA LPG: Air Quality Neutral

A2.24 The GLA's Air Quality Neutral LPG outlines the assessment approach for determining whether a development is Air Quality Neutral (GLA, 2023a). The guidance sets out benchmarks for the maximum allowable emissions of NOx and particulate matter based on the size and use class of the proposed development. To determine whether the development is Air Quality Neutral, the building and transport emissions from the proposed development are compared to these benchmarks.

Air Quality Focus Areas

A2.25 The GLA has identified 160 air quality Focus Areas in London. These are locations that not only exceed the annual mean limit value for nitrogen dioxide, but also have high levels of human exposure. They do not represent an exhaustive list of London's air quality hotspot locations, but locations where the GLA believes the problem to be most acute. They are also areas where the GLA considers there to be the most potential for air quality improvements and are, therefore, where the GLA and Transport for London (TfL) will focus actions to improve air quality. The proposed development is located adjacent to the '*Camden High Street from Mornington Crescent to Chalk Farm and Camden Road*' air quality Focus Areas.

Local Transport Plan

A2.26 The CPG on Transport (London Borough of Camden, 2021a) sets out guidance on Delivery and Servicing Plans (DSPs) in relation to Policies A1, A4, CC4, and T4 of the LBC Local Plan, for development proposals which are likely to have an impact on the local noise and vibration, air quality, congestion and road safety. This guidance describes the aim of a DSP as being *"to minimise motorised freight movements, mitigating against the negative impacts of freight movements in general, in particular those of motorised freight traffic."*

A2.27 The CPG on Transport also references requirements for all new residential developments to be car free, and requirements on developers to ensure that there is adequate bike storage provision on site, and in some cases to make financial contributions towards cycle hire schemes if required by the Council.

Local Policies

A2.28 The LBC Local Plan (London Borough of Camden, 2017), was adopted in 2017. The Plan sets out the Borough's planning policies, covering the period from 2016-2031. Policy CC4, on Air Quality, 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, 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."

A2.29 In support of Policy CC4, the Local Plan also includes Policy T2 which requires that *"all new developments in the borough be car free"*.

A2.30 Policy A1 on Managing the Impact of Development states that: *"The Council will seek to protect the quality of life of occupiers and neighbours"* and will *"seek to ensure that the amenity of communities, occupiers and neighbours is protected…and require mitigation measures where necessary. Factors that we will consider include…impacts of the construction phase, including the use of Construction Management Plans…odours, fumes and dust."*

A2.31 Policy D1 on Design has implication to air quality as well:

"The Council will seek to secure high quality design in development. The Council will require that development […]

c. is sustainable in design and construction, incorporating best practice in resource management and climate change mitigation and adaptation […]

h. promotes health;

The Council will resist development of poor design that fails to take the opportunities available for improving the character and quality of an area and the way it functions…"

A2.32 The plan elaborates that "*architecture and urban design can affect human health through the quality and design of buildings and spaces, access to open space and nature, air quality, noise, opportunity for active transport such as walking and cycling, crime reduction social cohesion.*"

A2.33 LBC has also recently commenced consultation on a new Draft Local Plan (Regulation 18) (London Borough of Camden, 2024b). Policy A3 (Air Quality) outlines a number of requirements for new developments including for all developments to be at least air quality neutral, to use design solutions to reduce exposure to existing poor air quality and to consider emergency backup power for development sites early in the design process.

A2.34 To support the current Camden Local Plan, the Borough has published a CPG document (London Borough of Camden, 2021b), specifically pertaining to air quality, which forms a Supplementary Planning Document (SPD). The CPG states that:

"*All developments are to protect future occupants from exposure to poor air quality; and*

All developments are to limit their impact on local air quality and be at least air quality neutral."

A2.35 The CPG describes air quality in the borough and measures to minimise emissions. The CPG references the 2005 WHO guidelines for NO_2, PM_{10}, and $PM_{2.5}$ of 40 µg/m^3, 20 µg/m^3 and 10 µg/m^3 respectively which Camden aims to achieve by 2030. The CPG also states that "*for the determination of planning applications and appraisal of Construction Management Plans, consideration must be paid to uncertainty in NO_2 data, therefore 38 µg/m^3 (the 40 µg/m^3 WHO limit less 5%) shall be taken as the limit for this pollutant.*"

Air Quality Action Plans

National Air Quality Plan

A2.36 Defra has produced an Air Quality Plan to tackle roadside nitrogen dioxide concentrations in the UK (Defra, 2017); a supplement to the 2017 Plan (Defra, 2018b) was published in October 2018 and sets out the steps Government is taking in relation to a further 33 local authorities where shorter-term exceedances of the limit value were identified. This assessment has principally been carried out in relation to the air quality objectives, rather than the limit values that are the focus of the Air Quality Plan.

Local Air Quality Action Plan

A2.37 LBC's combined Clean Air Strategy and Clean Air Action Plan (London Borough of Camden, 2022) sets out the strategic objectives for improving air quality in the Borough between 2019 and 2034 and the actions that will be undertaken between 2023 and 2026 to support the strategic objectives.

A2.38 One of the Clean Air Strategy's key commitments is "*achieving the most stringent evidence-based air quality targets available, in as short a timeframe as possible. Currently these are the World Health Organization's (WHO) air quality guidelines, published in 2021*" of 10 µg/m^3 for NO_2 by 2034, 15 µg/m^3 for PM_{10} by 2030 and 5 µg/m^3 for $PM_{2.5}$ by 2034. These are more stringent than those published in the Air Quality CPG (see Paragraph A2.35), which are based on the 2005 WHO guidelines and which are recommended for use "*for the determination of planning applications and appraisal of Construction Management Plans*" (London Borough of Camden, 2021a).

A2.39 The CAAP contains 36 'Clean Air Outcomes' to help improve air quality and protect health in Camden. The Plan sets out seven themes, around which a number of actions have been developed in order to improve local air quality:

- reducing construction emissions;
- reducing building emissions;
- reducing transport emissions;
- supporting communities and schools;
- indirect emissions and lobbying;
- public health and awareness; and
- indoor air quality and occupational exposure.

A2.40 It also states '*We will explore all available opportunities to reduce and prevent the installation and operation of any further diesel backup generators in Camden, instead requiring or mandating the use of cleaner alternatives such as electric battery storage systems, additional mains power connections. Where non-fossil fuel power systems are not viable, we will enforce the use of the cleanest and most efficient generators available, avoidance of over-sized generators, with the minimum possible number of hours of routine testing, and with a requirement to avoid testing at times of forecast or current high levels of air pollution*."

A3 Construction Dust Assessment Procedure

A3.1 The criteria developed by IAQM (2024), upon which the GLA's guidance is based, divide the activities on construction sites into four types to reflect their different potential impacts. These are:

- demolition;
- earthworks;
- construction; and
- trackout.

A3.2 The assessment procedure includes the four steps summarised below:

STEP 1: Screen the Need for a Detailed Assessment

A3.3 An assessment is required where there is a human receptor within 250 m of the boundary of the site and/or within 50 m of the route(s) used by construction vehicles on the public highway, up to 250 m from the site entrance(s), or where there is an ecological receptor within 50 m of the boundary of the site and/or within 50 m of the route(s) used by construction vehicles on the public highway, up to 250 m from the site entrance(s).

A3.4 Where the need for a more detailed assessment is screened out, it can be concluded that the level of risk is *negligible* and that any effects will be 'not significant'. No mitigation measures beyond those required by legislation will be required.

STEP 2: Assess the Risk of Dust Impacts

A3.5 A site is allocated to a risk category based on two factors:

- the scale and nature of the works, which determines the potential dust emission magnitude (Step 2A); and
- the sensitivity of the area to dust effects (Step 2B).

A3.6 These two factors are combined in Step 2C, which is to determine the risk of dust impacts with no mitigation applied. The risk categories assigned to the site may be different for each of the four potential sources of dust (demolition, earthworks, construction and trackout).

Step 2A – Define the Potential Dust Emission Magnitude

A3.7 Dust emission magnitude is defined as either 'Small', 'Medium', or 'Large'. The IAQM guidance explains that this classification should be based on professional judgement but provides the examples in Table A3-1.

Table A3-1: Examples of How the Dust Emission Magnitude Class May be Defined

Class	Examples
Demolition	
Large	Total building volume >75,000 m^3, potentially dusty construction material (e.g. concrete), on site crushing and screening, demolition activities >12 m above ground level

Class	Examples
Medium	Total building volume 12,000 m^3 – 75,000 m^3, potentially dusty construction material, demolition activities 6-12 m above ground level
Small	Total building volume <12,000 m^3, construction material with low potential for dust release (e.g. metal cladding or timber), demolition activities <6 m above ground, demolition during wetter months
Earthworks	
Large	Total site area >110,000 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 >6 m in height.
Medium	Total site area 18,000 m^2 – 110,000 m^2, moderately dusty soil type (e.g. silt), 5-10 heavy earth moving vehicles active at any one time, formation of bunds 3 m – 6 m in height.
Small	Total site area <18,000 m^2, soil type with large grain size (e.g. sand), <5 heavy earth moving vehicles active at any one time, formation of bunds <3 m in height.
Construction	
Large	Total building volume >75,000 m^3, on site concrete batching; sandblasting
Medium	Total building volume 12,000 m^3 – 75,000 m^3, potentially dusty construction material (e.g. concrete), on site concrete batching
Small	Total building volume <12,000 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	20-50 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	<20 HDV (>3.5t) outward movements in any one day, surface material with low potential for dust release, unpaved road length <50 m

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

Step 2B – Define the Sensitivity of the Area

A3.8 The sensitivity of the area is defined taking account of a number of factors:

- the specific sensitivities of receptors in the area;
- the proximity and number of those receptors;
- in the case of PM_{10}, the local background concentration; and
- site-specific factors, such as whether there are natural shelters to reduce the risk of wind-blown dust.

A3.9 The first requirement is to determine the specific sensitivities of local receptors. The IAQM guidance recommends that this should be based on professional judgment, taking account of the principles in Table A3-2. These receptor sensitivities are then used in the matrices set out in Table A3-3, Table A3-4

and Table A3-5 to determine the sensitivity of the area. Finally, the sensitivity of the area is considered in relation to any other site-specific factors, such as the presence of natural shelters etc., and any required adjustments to the defined sensitivities are made.

Step 2C – Define the Risk of Impacts

A3.10 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 IAQM guidance provides the matrix in Table A3-6 as a method of assigning the level of risk for each activity.

STEP 3: Determine Site-specific Mitigation Requirements

A3.11 The IAQM guidance provides a suite of recommended and desirable mitigation measures which are organised according to whether the outcome of Step 2 indicates a low, medium, or high risk. The list provided in the IAQM guidance has been used as the basis for the requirements set out in Appendix A4.

STEP 4: Determine Significant Effects

A3.12 The IAQM guidance does not provide a method for assessing the significance of effects before mitigation and advises that pre-mitigation significance should not be determined. With appropriate mitigation in place, the IAQM guidance is clear that the residual effect will normally be 'not significant'.

A3.13 The IAQM guidance recognises that, even with a rigorous dust management plan in place, it is not possible to guarantee that the dust mitigation measures will be effective all of the time, for instance under adverse weather conditions. The local community may therefore experience occasional, short-term dust annoyance. The scale of this would not normally be considered sufficient to change the conclusion that the effects will be 'not significant'.

Table A3-2: Principles to be Used When Defining Receptor Sensitivities

Class	Principles	Examples
Sensitivities of People to Dust Soiling Effects		
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 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 there is property that 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
Sensitivities of People to the Health Effects of PM_{10}		
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.	may include 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
Sensitivities of Receptors to Ecological Effects		
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 with dust sensitive features

Class	Principles	Examples
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 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

Table A3-3: Sensitivity of the Area to Dust Soiling Effects on People and Property [4]

Receptor Sensitivity	Number of Receptors	Distance from the Source (m)			
		<20	<50	<100	<250
High	>100	High	High	Medium	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

Table A3-4: Sensitivity of the Area to Human Health Effects [4]

Receptor Sensitivity	Annual Mean PM_{10}	Number of Receptors	Distance from the Source (m)			
			<20	<50	<100	<250
High	>32 µg/m^3	>100	High	High	High	Medium
		10-100	High	High	Medium	Low
		1-10	High	Medium	Low	Low
	28-32 µg/m^3	>100	High	High	Medium	Low
		10-100	High	Medium	Low	Low
		1-10	High	Medium	Low	Low
	24-28 µg/m^3	>100	High	Medium	Low	Low
		10-100	High	Medium	Low	Low
		1-10	Medium	Low	Low	Low
	<24 µg/m^3	>100	Medium	Low	Low	Low
		10-100	Low	Low	Low	Low
		1-10	Low	Low	Low	Low

[4] For demolition, earthworks and construction, distances are taken either from the dust source or from the boundary of the site. For trackout, distances are measured from the sides of roads used by construction traffic. Without mitigation, trackout may occur from roads up to 250, 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 of the road.

Receptor Sensitivity	Annual Mean PM_{10}	Number of Receptors	Distance from the Source (m)			
			<20	<50	<100	<250
Medium	>32 µg/m³	>10	High	Medium	Low	Low
		1-10	Medium	Low	Low	Low
	28-32 µg/m³	>10	Medium	Low	Low	Low
		1-10	Low	Low	Low	Low
	24-28 µg/m³	>10	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
	<24 µg/m³	>10	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Low	-	>1	Low	Low	Low	Low

Table A3-5: Sensitivity of the Area to Ecological Effects [4]

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

Table A3-6: Defining the Risk of Dust Impacts

Sensitivity of the Area	Dust Emission Magnitude		
	Large	Medium	Small
Demolition			
High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Low	Medium Risk	Low Risk	Negligible
Earthworks			
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible
Construction			
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Sensitivity of the Area	Dust Emission Magnitude		
	Large	Medium	Small
Trackout			
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

A4 Construction Mitigation

A4.1 Table A4-1 presents a set of best-practice measures from the GLA guidance (GLA, 2014) that should be incorporated into the specification for the works. These measures should be written into a Dust Management Plan. Some of the measures may only be necessary during specific phases of work, or during activities with a high potential to produce dust, and the list should be refined and expanded upon in liaison with the construction contractor when producing the Dust Management Plan.

Table A4-1: Best-Practice Mitigation Measures Recommended for the Works

Measure	Desirable	Highly Recommended
Site Management		
Develop and implement a stakeholder communications plan that includes community engagement before work commences on site		✓
Develop a Dust Management Plan (DMP)		✓
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 are being carried out and during prolonged dry or windy conditions		✓
Record any exceptional incidents that cause dust and air quality pollutant emissions, either on or off the site, and ensure that the action taken to resolve the situation is recorded in the log book		✓
Preparing and Maintaining the Site		
Plan the site layout so that machinery and dust-causing activities are located away from receptors, as far as is possible		✓
Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site		✓

Measure	Desirable	Highly Recommended
Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period		✓
Install green walls, screens or other green infrastructure to minimise the impact of dust and pollution	✓	
Avoid site runoff of water or mud		✓
Keep site fencing, barriers and scaffolding clean using wet methods		✓
Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below		✓
Cover, seed, or fence stockpiles to prevent wind whipping		✓
Carry out regular dust soiling checks of buildings within 100 m of site boundary and provide cleaning if necessary	✓	
Put in place real-time dust and air quality pollutant monitors across the site and ensure they are checked regularly		✓
Agree monitoring locations with the Local Authority		✓
Where possible, commence baseline monitoring at least three months before work begins		✓
Operating Vehicle/Machinery and Sustainable Travel		
Ensure all on-road vehicles comply with the requirements of the London LEZ (and ULEZ)		✓
Ensure all Non-road Mobile Machinery (NRMM) comply with London's NRMM emission standards. Currently, NRMM used on any site within Greater London are required to meet Stage IIIB of EU Directive 97/68/EC (The European Parliament and the Council of the European Union, 1997) and its subsequent amendments as a minimum, while NRMM used on any site within the Central Activity Zone, Canary Wharf or one of London's Opportunity Areas are required to meet Stage IV of the Directive as a minimum. The proposed development is not within an area where this stricter requirement applies. From January 2025, NRMM used anywhere in London will be required to meet stage IV, while from January 2030 the stage V standard will apply. From January 2040 only zero emission machinery will be allowed.		✓
Ensure all vehicles switch off engines when stationary – no idling vehicles		✓
Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery-powered equipment where practicable		✓
Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials		✓

Measure	Desirable	Highly Recommended
Implement a Travel Plan that supports and encourages sustainable staff travel (public transport, cycling, walking, and car-sharing)		✓
Operations		
Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems		✓
Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate		✓
Use enclosed chutes, conveyors and covered skips		✓
Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate		✓
Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods		✓
Waste Management		
Reuse and recycle waste to reduce dust from waste materials		✓
Avoid bonfires and burning of waste materials		✓
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		✓
Bag and remove any biological debris or damp down such material before demolition		✓
Measures Specific to 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		✓
Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable	✓	

Measure	Desirable	Highly Recommended
emission control systems to prevent escape of material and overfilling during delivery		
For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust	✓	
Measures Specific to Trackout		
Regularly use a water-assisted dust sweeper on the access and local roads, as necessary, to remove any material tracked out of the site	✓	
Avoid dry sweeping of large areas	✓	
Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport	✓	

A5 Professional Experience

Dr Denise Evans, BSc (Hons) PhD MIEnvSc MIAQM

Dr Evans is a Technical Director with AQC, with more than 24 years' relevant experience. She has prepared air quality review and assessment reports for local authorities and has appraised local authority air quality assessments on behalf of the UK governments and provided support to the Review and Assessment helpdesk. She has extensive modelling experience, completing air quality and odour assessments to support applications for a variety of development sectors including residential, mixed use, urban regeneration, energy, commercial, industrial, and road schemes, assessing the effects of a range of pollutants against relevant standards for human and ecological receptors. Denise has acted as an Expert Witness and is a Member of the Institute of Air Quality Management.

Lucy Hodgins, BSc (Hons) CSci MIEnvSc MIAQM

Lucy is a Principal Consultant with AQC with fourteen years' experience in the field of air quality. She has extensive experience in the assessment of air quality impacts for a range of industrial, commercial and residential projects, using qualitative and quantitative methods to assess road traffic and point source emissions utilising a variety of models, including ADMS-Roads, Breeze Roads, ADMS-5 and Breeze Aermod. She has prepared assessments for energy from waste, anaerobic digestion and waste biomass facilities for a range of air pollutants, along with nuisance dust and odour assessments. Lucy has also been involved in air quality management and assessment work for local authorities, including air quality modelling for Clean Air Zones as well as microsimulation modelling for junction improvement schemes. She has also undertaken numerous operational dust assessments for mineral and waste facilities, as well as assessments of construction dust emissions. She is a Chartered Scientist and a Member of the Institute of Air Quality Management and the Institution of Environmental Sciences.

George Chousos, BSc MSc AMIEnvSc AMIAQM

Mr Chousos is a Consultant with AQC, having joined in May 2019. Prior to joining AQC, he completed an MSc in Air Pollution Management and Control at the University of Birmingham, specialising in air pollution control technologies and management, and data processing using R. He also holds a degree in Environmental Geoscience from the University of Cardiff, where he undertook a year in industry working in the field of photo-catalytic technology. Since joining AQC, George has been gaining experience in undertaking air quality assessments, both qualitatively and using atmospheric dispersion modelling, to accompany planning and permitting applications. Projects have ranged in scale, from small scale residential development to Environmental Impact Assessments (EIAs). The assessments have considered the effects on both human health and ecological habitats. George also has experience completing construction dust risk assessments, Air Quality Neutral assessments, Local Authority Annual Status Reports (ASRs), as well as odour assessments.

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