Planning Statement
Air Quality Assessment
61 Redington Road

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Document prepared for
Mr and Mrs Burns

Date of issue
02/05/2023

Issue no.
2

Our reference
6937 - 61 Redington Road - Air Quality Assessment-2305-02nv

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Overview

Eight Versa has been commissioned to carry out an Air Quality Assessment (AQA) for the proposed development at 61 Redington Road, Hampstead, London, NW3 7RP, in the London Borough of Camden. The proposal seeks to amalgamate the three existing residential units into one family dwelling and a one-bedroom flat at lower ground level and consist of the refurbishment and extension of the existing four-storey building with associated works.

The unmitigated risk to local sensitive receptors from emissions of dust and pollution from construction is deemed to be low. However, the risk will be mitigated further through the measures set out in the Air Quality & Dust Management Plan (AQDMP), which will be implemented through the contractor's Construction Environmental Management Plan. With the mitigation measures in place, the residual effects arising from the construction phase of the proposed development would be deemed 'not significant'.

The entire borough was declared as an Air Quality Management Area (AQMA) in 2002 for exceedances of the National Air Quality Objectives (NAQOs) for nitrogen dioxide (NO_2) and 24-hour mean exceedance for particulate matter (PM_{10}). Even though the NAQOs for PM_{10} and $PM_{2.5}$ are currently being met, it remains a pollutant of concern. The site is not located in a NO_2 Focus Area and is not considered as a hotspot of poor Air Quality in Camden.

A review of the latest monitoring data for NO_2 at the closest locations to the development indicates that the NAQO at the closest monitoring station has been consistently achieving between the latest reporting years of 2018-2021. NAQOs at two monitoring sites were consistently achieved for reporting years 2018-2021, where applicable. Additionally, the annual exceedances of the NO_2 hourly mean concentration of 200 $\mu g/m^3$ was not provided, as no automatic monitoring sites have been identified close to the proposed development. The LAEI 2019 modelled mean annual NO_2 concentrations were estimated at approximately 29.1 $\mu g/m^3$ at the site, achieving the NAQO but exceeding the WHO guideline.

Nearby monitored mean annual PM_{10} concentrations and 24-hourly PM_{10} concentrations achieved the NAQOs. The LAEI 2019 modelled mean annual concentrations of PM_{10} at the site were estimated at approximately 16.3 $\mu g/m^3$, achieving the NAQO but exceeding the WHO guidelines.

No nearby monitored mean annual $PM_{2.5}$ concentrations were recorded. The LAEI 2019 modelled mean annual concentrations of $PM_{2.5}$ are estimated as approximately 10.8 $\mu g/m^3$, achieving the NAQO but exceeding the WHO guideline.

Since the development is not located in a NO_2 Focus Area, atmospheric dispersion modelling was not carried out. Therefore, residents having access to amenity spaces will not be exposed to high level of pollution.

For developments within London, the AQA methodology includes the requirement to undertake an assessment against the Air Quality Neutral (AQN) guidance. The scheme has been assessed for both the impacts of transport and building operation against the AQN guidance and it meets the requirements for AQN.

Even though further mitigation measures to reduce exposure of future occupants to pollutants are not explicitly required, the design mitigation hierarchy has been applied nonetheless, to maximise air quality for occupants, where feasible. Measures include provision of low carbon energy technologies and urban greening.

Introduction
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Project Overview

Eight Versa has been commissioned to carry out an Air Quality Assessment (AQA) for the proposed development at 61 Redington Road, London, NW3 7RP, in the London Borough of Camden. The proposal seeks to amalgamate the three existing residential units into one family dwelling and a one-bedroom flat at lower ground level and consist of the refurbishment and extension of the existing four-storey building with associated works.

The London Borough of Camden has declared an Air Quality Management Area (AQMA) for the whole Borough due to continued exceedances against National Air Quality Objectives (NAQOs) for the annual mean NO_2 and 24-hour mean exceedance for PM_{10}. Additionally, the north-east façade faces Redington Road. Due to the proposed nature of the development, including substantial refurbishments where occupants will be exposed to poor air quality, an AQA has been undertaken to accompany the planning application.

Scope of Assessment

An AQA has been undertaken in accordance with relevant planning policy and best-practice guidance at national, regional and local levels. The AQA includes:

- Establishment of nearby sensitive receptors to air pollution.
- Assessment of air quality and dust impacts during the construction phase.
- Establishment and review of existing air quality.
- Evaluation of outline proposals against the Air Quality Neutral (AQN) benchmarks.
- Assessment of air quality impacts expected during the operation of the new development.
- Assessment of the mitigation strategy to limit the exposure of building users and nearby receptors, to air pollution.

Key policy and guidance documents considered in the AQA are outlined in Table 1.

Table 1: National, regional and local policies and guidance.

National	National Planning Policy Framework (Ministry of Housing, Communities & Local Government, 2021)
	The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (Department for Environment, Food & Rural Affairs, Defra), 2007
	Land-Use Planning & Development Control: Planning for Air Quality (Environmental Protection UK (EPUK), Institute of Air Quality Management (IAQM), 2017)
	Clean Air Strategy (Department for Environment, Food & Rural Affairs, Defra), 2019
	Air Quality Plan for Nitrogen dioxide (NO_2) in UK (Defra, 2017)
	Guidance on the Assessment of Dust from Demolition and Construction (IAQM, 2014)
	Local Air Quality Management: Technical guidance LAQM.TG (16) (Department for Environment, Food & Rural Affairs, Defra), 2018
Regional	The London Plan 2021 (Mayor of London, 2021)
	Sustainable Design and Construction: Supplementary Planning guidance (Mayor of London, 2014)
	The Control of Dust and Emissions during Construction and Demolition: Supplementary Planning Guidance (Mayor of London, 2014)
	Clearing the Air - The Mayor's Air Quality Strategy (Mayor of London, 2010)
	Air Quality and Planning Guidance (London Councils, 2007)
Local	Camden Local Plan 2017 (London Borough of Camden, 2017)
	Camden Planning Guidance – Air Quality (London Borough of Camden, 2021)
	Draft Camden Clean Air Action Plan 2022-2026 (London Borough of Camden, 2022)
	Camden Clean Air Strategy 2019-2034 (London Borough of Camden, 2019)
	Clean Air Action Plan 2019-2022 (London Borough of Camden, 2018)

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National Legislation and Policy

The Air Quality Standards Regulations 2010 implements the requirements of EU Directive 2008/50/EC into UK legislation. Defra, on behalf of the UK Government, has produced a series of plans for the UK to meet the EU targets in the shortest possible time, the latest being the UK plan for tackling roadside NO_2 concentrations in July 2017 (NO_2 being identified as the primary pollutant for which the EU limit values are exceeded). An overview document has been produced, together with detailed plans for 37 zones where the objectives for NO_2 were not met in 2015.

The plan for the Greater London area sets out a range of measures to reduce NO_2 concentrations and indicates that with these measures, London will be compliant by 2025.

Table 2 sets out the ambient air quality standards for a range of key pollutants requiring specific objectives for ambient concentrations for pollutants UK and WHO limit values, respectively to be achieved and maintained.

Table 2: UK and WHO limit values for key pollutants.[1]

Pollutants	UK Concentrations	WHO Concentrations	Measured as	Date to be achieved by (UK only)
Nitrogen dioxide (NO_2)	200 µg/m^3 not to be exceeded more than 18 times per year	25 µg/m^3	24-hour mean	31 December 2005
	40 µg/m^3	10 µg/m^3	Annual mean	31 December 2005

Table 2: UK and WHO limit values for key pollutants (continued).

Pollutants	UK Concentrations	WHO Concentrations	Measured as	Date to be achieved by (UK only)
Particles (PM_{10})	50 µg/m^3 not to be exceeded more than 35 times per year	45 µg/m^3	24-hour mean	31 December 2004
	40 µg/m^3	15 µg/m^3	Annual mean	31 December 2004
Particles ($PM_{2.5}$)	-	15 µg/m^3	24-hour mean	-
	25 µg/m^3	5 µg/m^3	Annual mean	31 December 2010
Carbon monoxide (CO)	10 mg/m^3	-	Max. daily 8-hour mean	31 December 2003
Sulphur dioxide (SO_2)	266 µg/m^3 not to be exceeded more than 35 times per year	-	15-minute mean	31 December 2005
	350 µg/m^3 not to be exceeded more than 24 times per year	-	1 hour mean	31 December 2004
	125 µg/m^3 not to be exceeded more than 3 times per year	40 µg/m^3	24-hour mean	31 December 2004

[1] The full UK limit values can be viewed on Defra's UK AIR website. The full 2021 WHO can be viewed on WHO website.

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National Planning Policy Framework (Ministry of Housing, Communities & Local Government, 2021)

The National Planning Policy Framework (NPPF) published in July 2021 sets out the UK Government's planning policies for England. Planning law requires that applications for planning permission must be determined in accordance with the local development plan, unless material considerations indicate otherwise.

The NPPF is also a material consideration in planning decisions. It states that the purpose of the planning system is to contribute to the achievement of sustainable development; and that planning decisions on individual applications must reflect statutory requirements. Specifically, in terms of air quality, it requires the planning system to prevent development from contributing to or being put at unacceptable risk from unacceptable levels of air pollution.

Planning policies should promote compliance with or contribute towards achievement of EU limit values and NAQOs, taking into account the presence of AQMAs and the cumulative impacts on air quality from individual sites in local areas. Planning decisions should ensure that any new development within an AQMA is consistent with the local Air Quality Action Plan (AQAP).

The NPPF is supported by a series of Planning Practice Guidance (PPG) documents. The guidance in relation to air quality provides guiding principles on how planning can take account of the impact of new development on air quality.

National Air Quality Management

Part IV of the Environment Act 1995 requires the UK Government to publish an Air Quality Strategy and for local authorities to review, assess and manage air quality within their areas, known as Local Air Quality Management (LAQM).

The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (Defra, 2007)

The 2007 Air Quality Strategy establishes the policy for ambient air quality in the UK. It includes the National Air Quality Objectives (NAQOs) for the protection of human health and vegetation for 11 pollutants. Those NAQOs included as part of LAQM are prescribed in the Air Quality Standards Regulations 2010 and the Air Quality (Amendment) (England) Regulations 2002. It should be noted that the EU limit values are numerically the same as the NAQO values but differ in terms of compliance dates, locations where they apply and legal responsibility.

The EU limit values are mandatory whereas the NAQOs are policy objectives. Local authorities are not required to achieve them but have to work towards their achievement. In addition, the EU limit values apply in all locations except where members of the public do not have access and there is no fixed habitation, on factory premises or at industrial installations, and on the carriageway/central reservation of roads except where there is normally pedestrian access. Where a local authority's review and assessment of its air quality identifies that air quality is likely to exceed the NAQOs, it must designate these areas as AQMAs and develop an Air Quality Action Plan (AQAP) setting out measures to reduce pollutant concentrations with the aim of meeting the NAQOs.

Clean Air Strategy (Defra, 2019)

Additionally, the Clean Air Strategy 2019 sets outs goals that will be more stringent than EU requirements with the aim of reducing human exposure to toxic pollutants by taking into account the World Health Organisation's guidelines. The policies in the Strategy aim to reduce $PM_{2.5}$ concentrations across the UK so that the number of people living in locations above the WHO annual mean guideline limit of 10 $\mu g/m^3$ is reduced by 50% by 2025. Moreover, the Strategy will feed information to local authorities on how the cumulative impacts of nitrogen deposition in natural habitats should be assessed and mitigated through the planning system.

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Regional Policy and Guidance

The London Plan 2021 (Mayor of London, 2021)

Policy SI 1 in the Intended London Plan 'Improving air quality' states that:

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

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

1 Development proposals should not:

- 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.

2 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.

C Masterplans and development briefs for large-scale development proposals subject to an Environmental Impact Assessment should consider how local air quality can be improved across the area of the proposal as part of an air quality positive approach. To achieve this a statement should be submitted demonstrating:

- how proposals have considered ways to maximise benefits to local air quality, and
- what measures or design features will be put in place to reduce exposure to pollution, and how they will achieve this.

D In order to reduce the impact on air quality during the construction and demolition phase, development proposals must demonstrate how they plan to comply with the Non-Road Mobile Machinery Low Emission Zone and reduce emissions from the demolition and construction of buildings following best practice guidance.

E Development proposals should ensure that where emissions need to be reduced to meet the requirements of Air Quality Neutral or to make the impact of development on local air quality acceptable, this is done on-site. Where it can be demonstrated that emissions cannot be further reduced by on-site measures, off-site measures to improve local air quality may be acceptable, provided that equivalent air quality benefits can be demonstrated within the area affected by the development.

Clearing the Air - The Mayor's Air Quality Strategy (Mayor of London, 2010)

The Mayor of London produced an Air Quality Strategy in 2002 under the requirements of the Greater London Authority Act 1999, which was superseded by the subsequent Air Quality Strategy, published in December 2010. The Air Quality Strategy sets out how the National Air Quality Strategy would be implemented in London as a whole.

The Mayor's Air Quality Strategy outlines a number of policies to deliver the required reductions in PM_{10} and NO_2 concentrations in Greater London, to meet the EU limits. The planning process is required to improve air quality by ensuring that new developments, as a minimum, are 'air quality neutral'. With regard to the proposed development the key policies are as follows:

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- Policy '6 - Reducing emissions from construction and demolition sites' which states that the Mayor will work with the London Council to review and update the Best Practice guidance for construction and demolition sites and create supplementary planning guidance to assist implementation;
- Policy '7 - Using the planning process to improve air quality - new developments in London as a minimum shall be 'air quality neutral' which states that the Mayor will encourage boroughs to require emissions assessments to be carried out alongside conventional air quality assessments. Where air quality impacts are predicted to arise from developments these will have to be offset by developer contributions and mitigation measures secured through planning conditions, section 106 agreements or the Community Infrastructure Levy;
- Policy '8 - Maximising the air quality benefits of low to zero carbon energy supply' which states that the Mayor will apply emission limits for both PM and NO_x for new biomass boilers and NO_x emission limits for Combined Heat and Power (CHP) plant. Air quality assessments will be required for all developments proposing biomass boilers or CHP plants and operators will be required to provide evidence yearly to demonstrate compliance with the emission limits; and
- Policy '9 - Energy efficient buildings' which states that the Mayor will set CO_2 reduction targets for new developments which will be achieved using the Mayor's Energy Hierarchy. These measures will result in reductions of NO_x emissions.

Sustainable Design and Construction: Supplementary Planning Guidance (Mayor of London, 2014)

The Supplementary Planning Guidance (SPG), which supports the London Plan, was first published in 2006 and was updated in April 2014. The following guidance on air quality is provided in Section 4:

- Developers should design schemes to be 'Air Quality Neutral';
- Developments should be designed to minimise the generation of air pollutants;
- Developments should be designed to minimise exposure to poor air quality;
- Energy plant, including boilers and CHP) should meet relevant emission limits; and
- Developers and contractors should follow the relevant guidance on minimising impacts from construction and demolition.

The SPG states that where developers are unable to meet the 'air quality neutral' benchmark, consideration should be given to off-site NO_x and PM_{10} abatement measures.

The Control of Dust and Emissions during Construction and Demolition: Supplementary Planning Guidance (SPG) (Mayor of London, 2014)

This SPG provides detailed best practice guidance, seeking to address emissions from construction activities, including construction machinery with respect to London's 'low emission zone' for non-road mobile machinery (NRMM), introduced in 2015. The SPG incorporates the Institute of Air Quality Management (IAQM) 'Guidance on the assessment of dust from demolition and construction' approach for assessing the risk of dust impacts from construction.

Local Policy and Guidance

Camden Local Plan (London Borough of Camden, adopted 2017)

The Camden Local Plan sets out the Council's planning policies and replaces the Core Strategy and Development Policies planning documents (adopted in 2010)The Local Plan will cover the period from 2016-2031.The policies below relate directly to air quality and development:

Policy CC4 – Air Quality

- The Council will ensure that the impact of development on air quality is mitigated and ensure that exposure to poor air quality is reduced in the borough.
- The Council will take into account the impact of air quality when assessing development proposals, through the consideration of both the exposure of occupants to air pollution and the effect of the development on air quality. Consideration must be taken to the actions identified in the Council's Air
- 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.

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Camden Planning Guidance – Air Quality (London Borough of Camden, 2021)

The whole of Camden is an Air Quality Management Area (AQMA) as it does not meet national air quality objectives for nitrogen dioxide (NO_2) and because it is widely accepted that there is no safe level for particulates (PM_{10} and smaller). Air quality is particularly severe along major roads through the borough, and in the south of borough which is characterised by high levels of traffic. Major roads are those either in the Transport for London Road Network or designated as a Major Road by Camden.

- All of Camden is a designated Air Quality Management Area due to the high concentrations of nitrogen dioxide (NO_2) and particulate matter (PM_{10}).
- All developments are to protect future occupants from exposure to poor air quality.
- All developments are to limit their impact on local air quality and be at least air quality neutral.

Policy 3.5.Air quality assessments are to include the following:

- Emissions: An inventory of the PM_{10} and NO_x emissions associated with the proposed development, including the type and quantity of emission concentrations, during the construction and operational phase. This shall cover transport, stationary and mobile emission sources.
- Modelling: The application of atmospheric dispersion modelling to predicted NO_2 and PM_{10} concentrations, both with and without the proposed development. Dispersion modelling shall be the carried out in accordance with Air Quality and Planning Guidance, London Councils (2007) and London Local Air Quality Management Plan Technical Guidance 2016. Modelling should not predict improvements to future years (future vehicle emissions or future background concentrations).

Draft Camden Clean Air Action Plan 2022-2026 (London Borough of Camden, 2022)

The Camden Clean Air Strategy 2019-2034 sets out a pathway to achieve stricter air quality objectives, sooner than we are required to meet the UK National Air Quality Objectives and Standards, which are less ambitious.

Camden Clean Air Strategy 2019-2034 (London Borough of Camden, 2019)

The Camden Clean Air Strategy 2019-2034 sets out Camden's long-term vision for improving air quality and protecting public health from the effects of air pollution whilst also tackling the disproportionate impact that poor air quality has on some groups.

Clean Air Action Plan 2019-2022 (London Borough of Camden, 2018)

Camden's Clean Air Action Plan has been produced as part of our duty to London Local Air Quality Management. It outlines the action we will take to improve air quality in Camden between 2019 and 2022.

Some relevant actions related to reducing emissions from buildings and new development include:

- Working to reduce emissions from our own estate and operations.
- Helping residents and visitors to reduce emissions and exposure.
- Using planning policy and regulation to reduce air pollution.
- Implementing innovative projects across the borough to improve air quality.
- Using our influence to lobby for increased financial and regulatory support for the mitigation of air pollution.
- Maintaining a monitoring network and ensuring the data is freely accessible.
- Raising awareness on how to reduce emissions and exposure.

Site Overview
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Site Overview

The development site at 61 Redington Road is on the south side of Redington Road in the north of the London Borough of Camden. The OS grid reference for the site is X (Eastings) 525622, Y (Northings) 186012 and the postcode is NW3 7RP. It is bounded by residential buildings to the west, north and south, and Redington Road to the east as illustrated in Figure 1.

The total area of the site is approximately 895m^2 (0.09 ha). The building on site is a four-storey building in use as residential units and comprises three separate flats.

Figure 1: The site plan.

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Description of Proposed Development

The proposal seeks to amalgamate the three existing residential units into one family dwelling and a one-bedroom flat at lower ground level and consist of the refurbishment and extension of the existing four-storey building with associated works. Illustrations of the proposed lower ground floor plan, ground floor plan and first floor plan of the development are shown in Figure 2, Figure 3 and Figure 4, respectively.

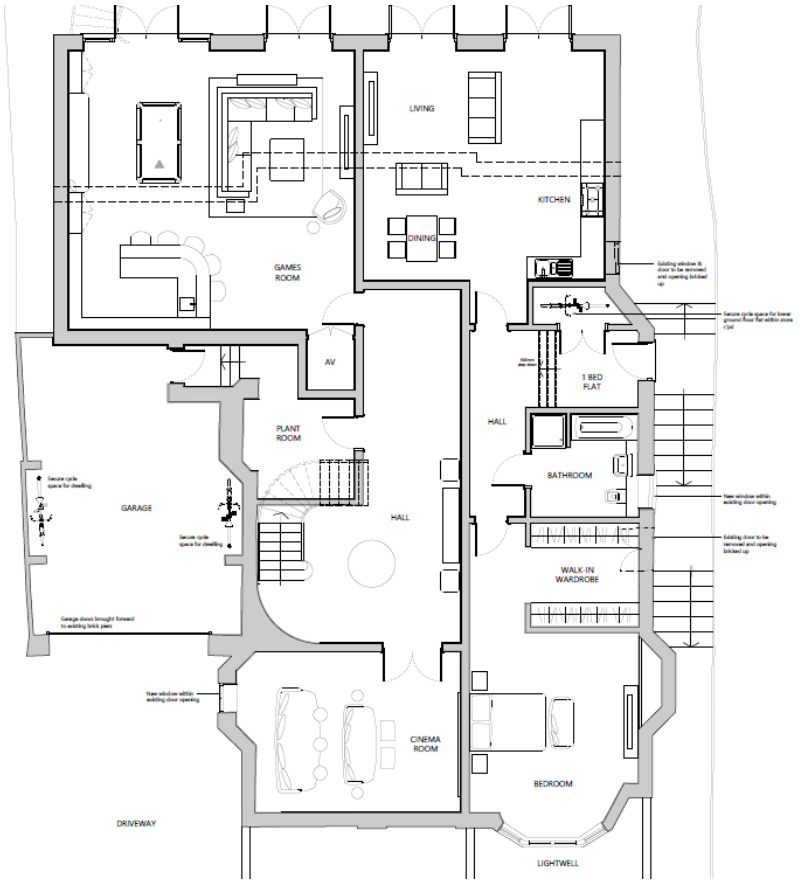

Figure 2: Proposed lower ground floor plan showing the residential ancillaries.

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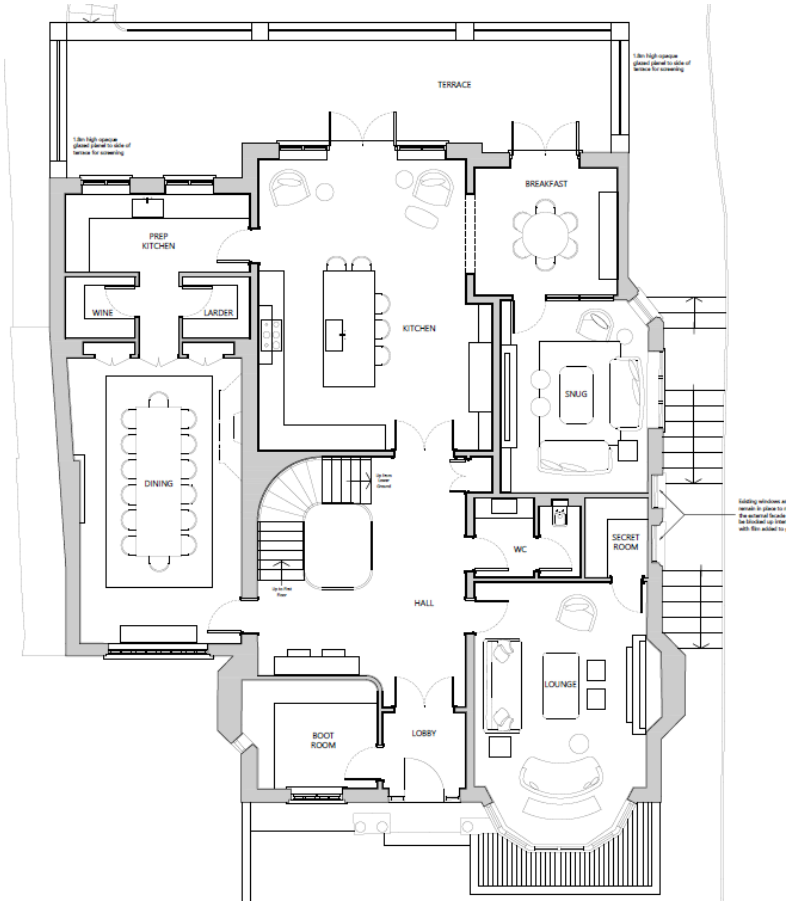

Figure 3: Proposed ground floor plan showing the residential ancillaries.

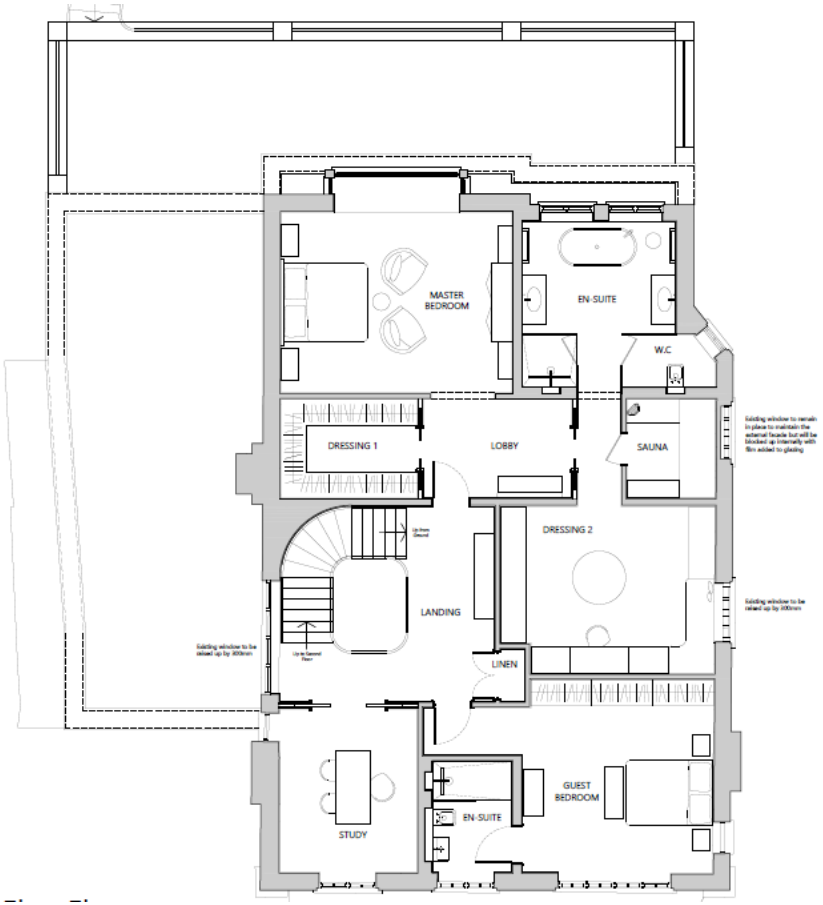

Figure 4: Proposed first floor plan showing the residential ancillaries.

Local Receptors
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Overview of Local Sensitive Receptors

A sensitive receptor is a location that may be affected by the emission of pollutants and / or particulate matter during construction or from the operation of a completed development, including from building plant and transport uses as a result of the new development.

In accordance with the Institute of Air Quality Management (IAQM) 'Guidance on the assessment of dust from demolition and construction', the need for a detailed assessment of the air quality impacts from construction should be determined where the following receptors are present:

- Where there is a human receptor within:
  - 350m of the boundary of the site; and/or
  - 50m of the route used by construction vehicles on the public highway, up to 500m from the site entrance(s).
- Where there is an ecological receptor within:
  - 50m of the boundary of the site; and/or
  - 50m of the route(s) used by construction vehicles on the public highway, up to 500m from the site entrance(s).

For the purposes of identifying receptors, which may be sensitive to potential air quality impacts of dust and emissions from construction, a 350m radius from the development site is used for human receptors, a 50m radius for ecological receptors and a 500m radius is used for the trackout route for both types of receptors, as shown in Figure 5.

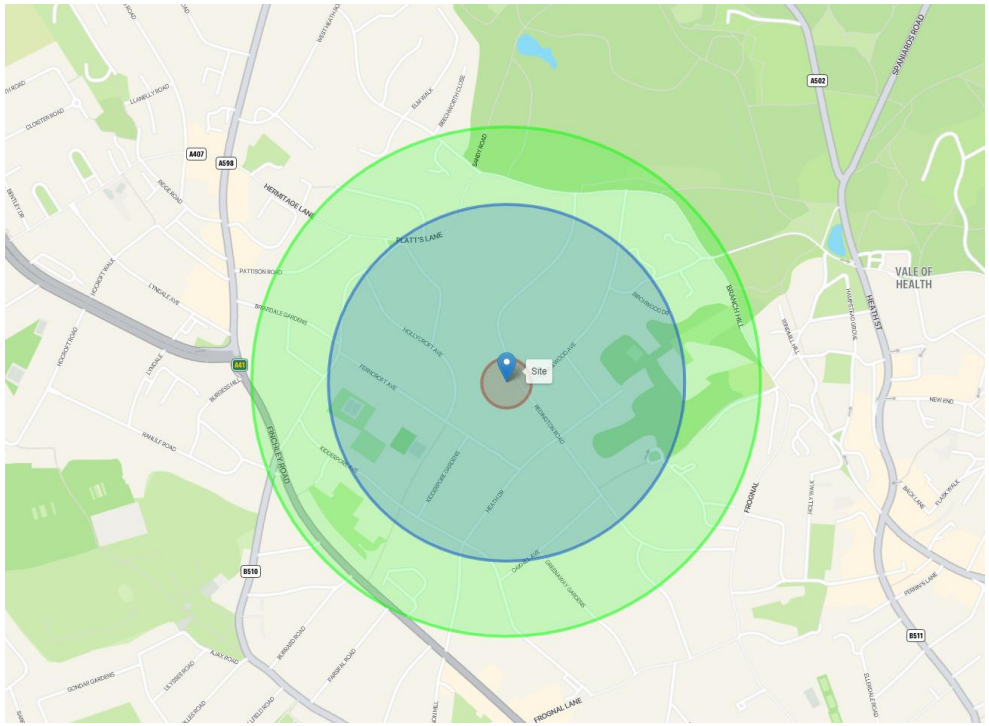

Figure 5: Map view showing a 500m radius (green), a 350m radius (blue) and a 50m radius (red) from the site.

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Human Receptors

A human receptor refers to any location where a person or property may experience the adverse effects of airborne dust or dust soiling, or exposure to PM_{10} over a time period relevant to the air quality objectives, as defined in the Government's technical guidance for Local Air Quality Management. In terms of annoyance effects, this will most commonly relate to residential dwellings, but may also refer to other premises such as schools, hospitals, museums, vehicle showrooms, food manufacturers and amenity areas.

The surrounding area consists predominantly of residential buildings. Key human receptors are described below (all distances detailed are approximate).

Schools

The following schools have been identified within 350m of the development or within 500m of the trackout route.

- St Margaret's School, Hampstead – approximately 150m south-west.
- St Luke's Church of England School – approximately 370m-west.
- ESCP Business School – approximately 490m-south.

Nurseries

No nurseries / pre-schools have been identified within 350m of the development or within 500m of the trackout route.

Hospitals

No hospitals have been identified within 350m of the development or within 500m of the trackout route.

Doctors

No doctors have been identified within 500m of the trackout route.

Ecological Receptors

Potential sensitive ecological receptors have been determined using geographic information obtained from MAGIC's website.

No statutory or non-statutory ecological sites have been identified within 50m of the development or within 500m of the trackout route.

The following sites that could represent ecological receptors but not defined as either statutory or non-statutory ecological site, have been identified within 500m of the development site:

- Priority Habitat Inventory - Lowland Heathland - approximately 450m north-east.
- Priority Habitat Inventory - Good quality semi-improved grassland (Non Priority) – approximately 450m north-east.
- National Habitat Network - Restorable Habitat, Wood pasture and parkland, Lowland heathland - approximately 450m north-east.
- Priority Habitat Inventory - No main habitat but additional Deciduous woodland habitat exists - approximately 180m north.
- Species - Farmland birds - Turtle Dove – 0m.

Construction Phase
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Construction Phase Impacts

Construction phase impacts, as a result of the proposed development, have been assessed using the Institute of Air Quality Management (IAQM) 'Guidance on the assessment of dust from demolition and construction'. The construction phase impacts have been assessed for their risks in line with section 5 of the IAQM guidance.

Assessment of Construction Impacts

Using the evaluation criteria within the IAQM's guidance, the potential dust emission magnitude has been identified for each stage of the proposed development as shown in Table 3.

Table 3: Dust emission magnitudes for construction activities.

Activity	Dust emission magnitude	Justification
Demolition	Small	The total building volume to be demolished will be less than 20,000 m^3 and demolition activities will occur at no greater than 10 m above ground – **approximately 300m^3.**
Earthworks	Small	The total site area is less than 2,500 m^2. There would be less than 5 heavy earth moving vehicles active at any one time- **approximately 700m^2.**
Construction	Small	The total new building volume will be less than 25,000 m^3 – **approximately 1,800m^3.**
Trackout	Small	It is anticipated that there will be a minimal unpaved site area, which will be used for vehicle trackout. It is considered likely that there would be no more than approximately 8 outward vehicle movements of HDV (>3.5t) vehicles in any one day.

The overall sensitivity of the surrounding area to dust soiling, human health impacts and ecological effects has been determined by reviewing the sensitivity of the receptors and distance from the source. A summary of sensitivity of nearby receptors to dust impacts is given in Table 4.

Table 4: Sensitivity of nearby receptors to dust impacts.

Sensitivity of people to dust soiling	Sensitivity of people to PM_{10} health impacts	Sensitivity to ecological effects
Medium	Low	Low
More than 10 residential units have been identified within 50m of the site.	More than 100 residential units, are present within 350m of the development site. LAEI 2019 annual mean PM_{10} monitoring was 16.3 µg/m^3 in 2019 at the development.	No internationally or nationally designated ecological sites in proximity of the site. It is not established whether there are particularly important or vulnerable plant species in nearby green spaces, therefore precautionary principle is applied.

The dust emission magnitude determined in Table 3 has been combined with the sensitivity assessment in Table 4 to define the risk of impacts for each phase of development in the absence of mitigation measures. The sensitivity of the surrounding area has been defined in accordance with IAQM guidance and the results are given in Table 5.

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Table 5: Risk to local sensitive receptors from construction dust impacts.

	Risk without mitigation	Activity			
		Demolition	Earthworks	Construction	Trackout
Potential impact	Dust soiling	Low	Low	Low	Negligible
	Human health	Negligible	Negligible	Negligible	Negligible
	Ecological effects	Negligible	Negligible	Negligible	Negligible
Overall risk of dust impacts with no mitigation		Low risk			

The overall risk of dust impacts from the construction phase without mitigation measures proposed has been assessed as being low risk. The risk across the four construction activities has been determined to be low risk or negligible. The risk of all the activities with regards to ecology is deemed to be negligible. Therefore, no further mitigation measures need specifically be recommended for protecting ecology.

Effects of Mitigation Measures

A schedule of mitigation measures has been developed for the construction phase, based on the 'Control of Dust and Emissions during Construction and Demolition: Supplementary Planning Guidance' (Mayor of London, 2014). These measures are outlined in the Air Quality & Dust Management Plan (AQDMP) (Appendix A). The measures will be incorporated in the appointed Contractor's Construction Environmental Management Plan.

The recommended AQDMP measures address the key construction activities identified and a summary of the proposed measures to satisfactorily reduce the risks from the respective construction phases is given in Table 6. The implementation of the proposed measures is deemed to mitigate the risk for each activity and thus the residual effects are deemed to be negligible.

Table 6: Summary of proposed AQDMP mitigation measures for construction phase.

Activity	Relevant mitigation measures
General (all activities)	Site management measures 1-10. Preparing and maintaining the site measures 11-23. Operating vehicle/machinery and sustainable travel measures 24-30. Operations measures 31-35. Waste management measure 36-37.
Demolition	Measures 38-41.
Earthworks	Measures 42-44
Construction	Measures 45-48.
Trackout	Measures 49-58.

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Current Local Status

The London Borough of Camden was declared an AQMA for the entire borough in 2002. The AQMA has been declared due to annual mean exceedances of NO_2 and 24-hour mean exceedances of PM_{10}. Currently, the borough meets all the NAQOs except for NO_2. Even though the NAQOs for PM_{10} and $PM_{2.5}$ are being met, they remain pollutants of concern. These pollutants are primarily produced by road traffic. However, other contributors include construction, domestic gas use and industry.

The AQAP 2018-2023 identified four Focus Areas, based on modelling using the London Atmospheric Emissions Inventory (LAEI) 2013[2]. Table 7 and Figure 6 illustrate the Focus Areas as determined by LAEI 206 modelling data. Focus Areas are locations designated as having high levels of pollution and human exposure. The site is not located in the Focus Area.

Table 7: List of Focus Areas in Camden based on LAEI 2016.

ID LAEI 2016	Focus Areas
28	Camden High Street from Mornington Crescent to Chalk Farm and Camden Road
29	Holborn and Southampton Row junction
30	Kilburn Town Centre
31	Euston Road

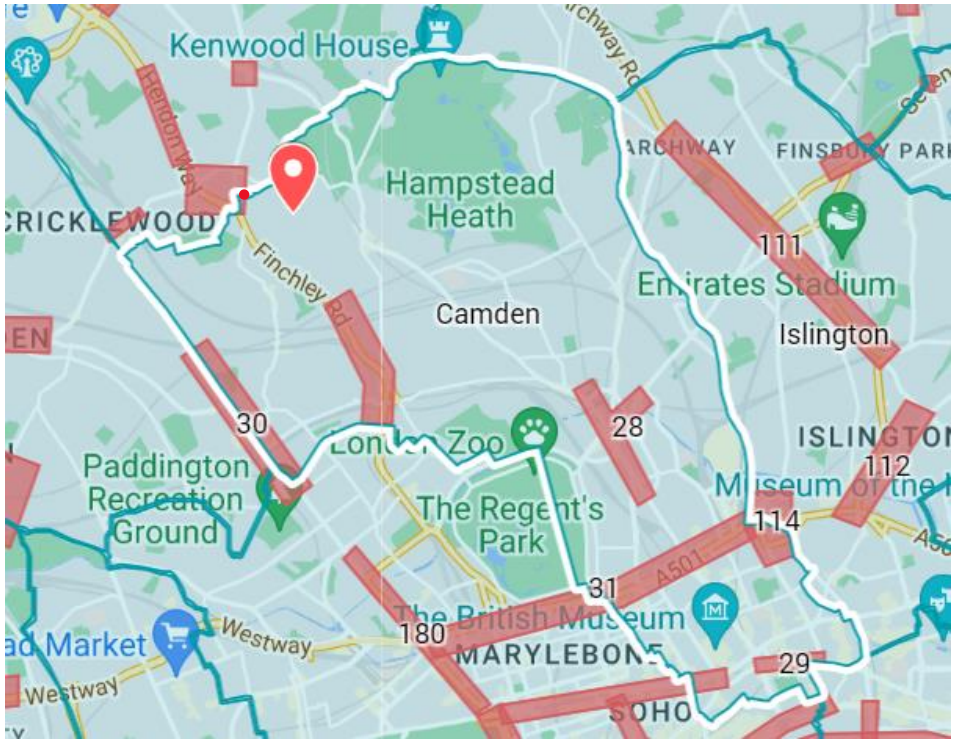

Figure 6: Focus Areas in Camden based on LAEI 2016. The red dot illustrates the approximate location of the development site.

[2] LAEI 2013 datasets were used in the AQAP.

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Local Monitoring Stations

Four automatic monitoring sites and 33 non-automatic monitoring sites have been identified in the London Borough of Camden Air Quality Annual Status Report 2021. Based on their proximity to the development site, completeness of data and relevance to the site, the following monitoring sites are reviewed in Table 8. Two non-automatic monitoring sites have been identified that are considered to be representative of the surroundings of the site.

Table 8: Air quality monitoring stations identified near the site.

Site ID	Site name and type	Pollutants monitored	X (Eastings)	Y (Northings)	Inlet height (m)	Distance from site (m)
CA7	Frognal Way, diffusion tube, urban background	NO_2	526213	185519	3	770
CA25A	Emmanuel Primary School, diffusion tube, roadside	NO_2	525362	185255	2	800

A map, showing the approximate locations of the closest NO_2 diffusion tubes, in relation to the development site, is shown in Figure 7.

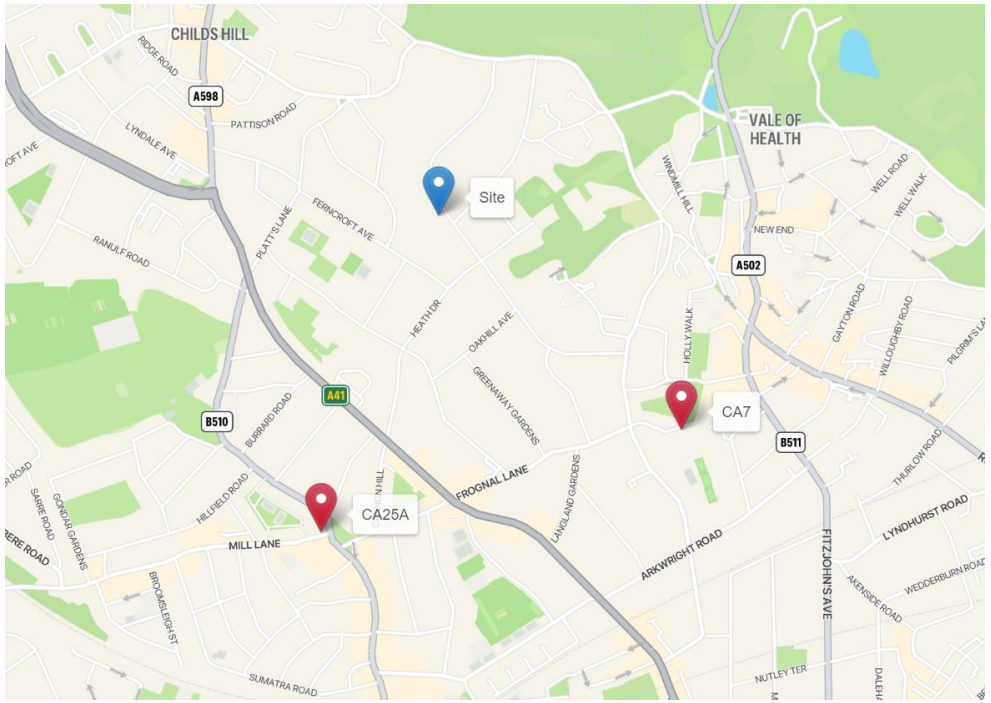

Figure 7: Map showing location of development site (shown in blue) in relation to nearby NO_2 diffusion tubes (shown in red).

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Monitored Nitrogen Dioxide (NO_2)

A summary of the latest monitoring results for NO_2 annual mean concentrations at the closest monitoring stations to the development site is given in Table 9. Results for each monitoring station and reporting year are shown in green where the NAQO is achieved, in red where the NAQO is exceeded and in grey where data have not been reported.

The data show that the NAQO for mean annual NO_2 concentration (for the mean annual concentration to be no more than 40 µg/m^3) closest to the development site, has been consistently achieved at site CA7 between the latest reporting years of 2018-2021. NAQOs at monitoring site CA25A were consistently achieved for reporting years 2019-2021. Additionally, air quality is predicted to improve in the future with actions such as the introduction of electric vehicles.

Table 9: 2017-2020 NO_2 annual mean concentrations near the site.[3]

Site ID	Monitoring station type	Distance from site (m)	Annual mean concentration (µg/m^3)			
			2021	2020	2019	2018
CA7	Non-automatic, urban background (30 m from kerb)	770	15.35	18.86	23.34	22.12
CA25A	Non-automatic, roadside (2m from kerb)	800	29.72	31.80	38.75	-

A summary of the latest monitoring results for the annual exceedances of the NO_2 hourly mean concentration of 200 µg/m^3 was not provided, as no automatic monitoring sites have been identified close to the proposed development

Monitored Particulate Matter under 10 µm diameter (PM_{10})

A summary of the latest monitoring results for PM_{10} annual mean concentrations was not provided, as no automatic monitoring sites have been identified close to the proposed development.

A summary of the latest monitoring results for the annual exceedances of the PM_{10} daily mean concentration of 50 µg/m^3 was not provided, as no automatic monitoring sites have been identified close to the proposed development

Monitored Fine Particulate Matter 2.5 µm diameter ($PM_{2.5}$)

A summary of the latest monitoring results for $PM_{2.5}$ concentrations was not provided, as no automatic monitoring sites have been identified close to the proposed development

[3] Data are obtained from the London Borough of Havering Air Quality Annual Status Report 2021. A National Bias Adjustment Factor of 0.82 is applied to diffusion tubes data for 2021.

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LAEI 2019 modelled mean annual concentrations of NO_2, PM_{10} and $PM_{2.5}$

The London Atmospheric Emissions Inventory (LAEI)[4] is a database of geographically referenced datasets of pollutant emissions and sources in Greater London. The base year for the latest and current LAEI is 2019 and includes NO_2, PM_{10} and $PM_{2.5}$ as key pollutants.

The LAEI 2019 modelled mean annual concentrations of NO_2 for the site and surrounding area is shown in Table 10. Mean annual NO_2 concentrations were estimated at approximately 29.1 µg/m^3 at the site for 2019. The modelled data indicate that the NAQO (mean annual concentration no greater than 40 µg/m^3) was achieved and WHO guidelines (mean annual concentration no greater than 10 µg/m^3) was exceeded at the site during 2019.

The LAEI 2019 modelled mean annual concentrations of PM_{10} are shown in Table 10. Mean annual PM_{10} concentrations at the site were estimated at approximately 16.3 µg/m^3 for 2019. The modelled data indicate that the NAQO (mean annual concentration no greater than 40 µg/m^3) was achieved at the site for 2019 but the WHO guideline (mean annual concentration no greater than 15 µg/m^3) was exceeded.

The LAEI 2019 modelled mean annual concentrations of $PM_{2.5}$ are shown in Table 10.Mean annual $PM_{2.5}$ concentrations at the site were estimated at approximately 10.8 µg/m^3 for 2019. The modelled data indicate that the NAQO (mean annual concentration no greater than 25 µg/m^3) for 2019 was achieved at the site, but the WHO guideline (mean annual concentration no greater than 5 µg/m^3) was exceeded.

Table 10: 2019 modelled annual mean concentrations at the site.

Site name, address	X (Eastings)	Y (Northings)	NO_2 (µg/m^3)	PM_{10} (µg/m^3)	$PM_{2.5}$ (µg/m^3)
61 Redington Road, NW3 7RP, London	525620	186000	29.1	16.3	10.8

[4] London Atmospheric Emissions Inventory (LAEI) 2019, Greater London Authority.

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Modelled Background Concentrations

Defra provides modelled background concentrations for key pollutants across the UK. The 2019-2023 modelled background concentrations for NO_2, PM_{10} and $PM_{2.5}$ for the area surrounding the site are given in Table 11. The background concentrations for NO_2, PM_{10} and $PM_{2.5}$ consistently achieve the NAQOs and unfailingly decrease between the modelled years of 2019-2023.

Table 11: 2019-2023 modelled background concentrations near the site.[5]

Pollutant/particulate matter	Background concentration (µg/m³)				
	2023	2022	2021	2020	2019
NO_2	22.0	22.6	23.4	24.2	25.9
PM_{10}	17.3	17.5	17.7	17.9	18.4
$PM_{2.5}$	11.2	11.4	11.5	11.6	11.9

Existing Air Quality Conclusions

Nitrogen Dioxide (NO_2)

A total of two NO_2 diffusion tubes monitoring mean annual NO_2 concentrations, have been identified close to the development site. The data show that the NAQO for mean annual NO_2 concentration (for the mean annual concentration to be no more than 40 µg/m³) closest to the development site, has been consistently achieved at site CA7 between the latest reporting years of 2018-2021. NAQOs at monitoring sites CA25A, were consistently achieved for reporting years 2019-2021. Overall, there is a decreasing trend in NO_2 levels.

Unfortunately, the NAQO for the hourly mean (for no more than 18 exceedances of the 200 µg/m³ hourly mean) have not been provided, as no automatic monitoring sites have been identified close to the proposed development. The LAEI 2019 modelled mean annual NO_2 concentrations were estimated at approximately 29.1 µg/m³ at the site, achieving the NAQO but exceeding WHO guideline. The Defra modelled background concentration of NO_2 is 25.9 µg/m³ for 2019, decreasing to 22.0 µg/m³ by 2023. It is likely that mean annual NO_2 concentrations currently achieve the NAQO but exceed WHO guidelines at the development site.

Coarse particulate matter (PM_{10})

No nearby monitored mean annual PM_{10} concentrations and 24-hourly PM_{10} concentrations have been provided, as no automatic monitoring sites have been identified close to the proposed development. The LAEI 2019 modelled mean annual concentrations of PM_{10} at the site were estimated at approximately 16.3 µg/m³, achieving the NAQO but exceeding the WHO guidelines. The Defra modelled background concentration of PM_{10} is 18.4 µg/m³ for 2019, decreasing to 17.3 µg/m³ by 2023. It is likely that the mean annual PM_{10} concentrations at the development site currently achieve the NAQO but exceed the WHO guideline at the site.

Fine particulate matter ($PM_{2.5}$)

No nearby monitored mean annual $PM_{2.5}$ concentrations were recorded. The LAEI 2019 modelled mean annual concentrations of $PM_{2.5}$ are estimated as approximately 10.8 µg/m³, achieving the NAQO but exceeding the WHO guideline. The Defra modelled background concentration of $PM_{2.5}$ is 11.9 µg/m³ for 2019, decreasing to 11.2 µg/m³ by 2023. It is likely that mean annual $PM_{2.5}$ concentrations at the development site currently achieve the NAQO but exceed the WHO guidelines.

[5] Defra Local Air Quality Management – Background Maps. Data are obtained for the London Borough of Camden for the nearest grid square (X coordinate 525500, Y coordinate 185500) for years 2019-2023 (from 2018 baseline).

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Operational Impacts: Air Quality Neutral

Policy SI 1 in the London Plan 2021, 'Improving air quality' requires that development proposals should not lead to further deterioration of existing poor air quality and that they must be at least Air Quality Neutral (AQN). The proposed development has been assessed for its performance against the AQN guidance and benchmarks, for both transport and building-related emissions.

Air Quality Neutral: Transport Emissions

The AQN guidance provides a methodology for calculating the Transport Emissions Benchmark (TEB) for specific land use types. The TEB has been calculated for the development (Table 12) using the factors for Class C3 (residential) and Class E (commercial space).

The development proposal does not include any additional car parking spaces. Therefore, traffic related air quality impacts are assessed to be negligible.

Table 12: Transport Emissions Benchmark (TEB).

Development metric	Residential	Total
Applicable planning use class for TEB	Dwelling Houses (C3)	-
Gross Internal Area (m^2)	778.0	778.0
Number of dwellings – residential only	2	2
Location (CAZ/inner/outer)	Inner	-
NO_x TEB factor (g/m^2/year) – non-residential	0.0	0.0
NO_x TEB factor (g/dwelling/year) - residential	558.0	-
Total NO_x TEB (kg/year)	1.1	1.1
PM_{10} TEB factor (g/m^2/year) – non-residential	0.0	-
PM_{10} TEB factor (g/dwelling/year) - residential	100.0	-
Total PM_{10} TEB (kg/year)	0.2	0.2

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Table 13: Comparison of calculated transport emissions against TEBs.

Development metric	Residential	Total
Applicable planning use class for TEB	Dwelling Houses (C3)	-
Daily trips by car	0	0
Annual car trips by car	0	0
Location (CAZ/inner/outer)	Inner	-
Average distance travelled per car trip (km)	3.7	4
Annual distance travelled by car (km/year)	0.0	0.0
NO_x emissions factor (g/km)	0.370	-
Total NO_x emissions (kg/year)	0.0	0
Difference from NO_x TEB to actual	-1.1	-1.1
Transport NO_x AQN result	Pass	Pass
PM_{10} emissions factor (g/km)	0.0665	-
Total PM_{10} emissions (kg/year)	0.0	0
Difference from PM_{10} TEB to actual	-0.2	-0.2
Transport PM_{10} AQN result	Pass	Pass

The development passes the AQN test for transport emissions, as the development is considered to be car-free(Table 13).

Air Quality Neutral: Building Emissions

The AQN guidance provides a methodology for calculating the Building Emissions Benchmark (BEB) for specific land use types. The BEB has been calculated for the development (Table 14) using the factors for Class C3 and Class E.

Table 14: Building Emissions Benchmark (BEB).

Development metric	Residential	Total
Applicable planning use class for BEB	Dwelling Houses (C3)	-
Gross internal area (m^2)	778.0	778.0
NO_x BEB factor (g/m^2/year)	26.2	26.2
Total NO_x BEB (kg/year)	**20.4**	**20.4**
PM_{10} BEB factor (g/m^2/year)	2.28	2.28
Total PM_{10} BEB (kg/year)	**1.8**	**1.8**

An Energy Statement was produced by Love Studio Design in May 2023, which is based on a strategy to reduce energy demand as far as practically and economically possible, by implementing energy efficiency measures before applying low carbon and renewable energy technologies. The use of biomass, combined heat and power (CHP) and gas boilers have been excluded from the scheme. The residential units are served by air source heat pumps to provide heating and hot water.

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Since the energy consumption will all be electricity-based, the development, therefore, passes the AQN test for building emissions (Table 15).

Table 15: Comparison of calculated building emissions against BEBs.

Development metric	Residential	Total
Applicable planning use class for BEB	Dwelling Houses (C3)	-
Total annual gas consumption from boilers (mg/kWh)	0	0
Boilers NO_x emissions factor (mg/kWh)	38	-
Total NO_x emissions from boilers (kg/year)	0.0	0
Total annual gas consumption from CHP (kWh/year)	0.0	0
CHP NO_x emissions factor (mg/kWh)	0.0	-
Total NO_x emissions from CHP (kg/year)	0.0	0
Total NO_x emissions (kg/year)	0.0	0
Difference from NO_x BEB to actual	-20.4	-20.4
Building NO_x AQN result	Pass	Pass
Total annual oil or solid fuel consumption (kWh/year)	0.0	0
PM_{10} emissions factor (mg/kWh)	0.0	-
Total PM_{10} emissions (kg/year)	0.0	0
Difference from PM_{10} BEB to actual	-1.8	-1.8
Building PM_{10} AQN result	Pass	Pass

Air Quality Neutral Statement

The Sustainable Design and Construction SPG issued by the Mayor of London, sets out the requirement for all major developments in Greater London to undertake an AQN Test and be designed so that they are at least 'air quality neutral'. A development is considered to be AQN if it can be demonstrated that both emissions from the operation of a proposed development and transport as a result of the proposed development achieve the relevant emissions benchmarks provided in the AQN guidance.

The development achieves both the TEB and BEB and, therefore, passes the AQN test. No additional mitigation for the purposes of AQN is required.

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Pollution Mitigation Hierarchy

The development passes the AQN test for transport and building emissions. Additionally, the impact of NO_2, PM_{10} and $PM_{2.5}$ concentrations on the development are deemed to be insignificant at the façade facing Redington Road as per the air dispersion modelling. Therefore, no additional mitigation or offsetting measures for the operational phase of the development will be required.

However, the principles of the pollution mitigation hierarchy, outlined in the Institute of Air Quality Management (IAQM) 'Mitigation of Development Air Quality: Position Statement', have been applied to the proposed development to minimise the exposure of future building users and occupants.

1. Prevention and Avoidance

Preference should be given to preventing or avoiding exposure/impacts to the pollutant in the first place by eliminating or isolating potential sources or by replacing sources or activities with alternatives.

Sustainable energy technologies

The Energy Statement excluded any use of biomass, combined heat and power (CHP) and gas-fired boilers for the scheme. The residential units are served by air source heat pumps to provide heating and hot water.

2.a Reduction and Minimisation: Mitigation Measures that act on the Source

Reduction and minimisation of exposure/impacts should next be considered, once all options for prevention/avoidance have been implemented so far as is reasonably practicable (both technically and economically).

No mitigation measures are proposed.

2.b. Reduction and Minimisation: Mitigation Measures that act on the Pathway

Urban greening

The proposed development will include soft landscaping at the front of the development. These strategies of urban greening will help alleviate pollution, benefitting the air quality of the development. In addition, it will introduce a new biodiversity to the development, contributing to the ecology of the area.

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2.c. Reduction and Minimisation: Mitigation Measures at or Close to the Point of Receptor Exposure

Ventilation strategy

Natural Ventilation have been considered in all units and extract ventilation in toilets

3. Off-setting

Off-setting a new development's air quality impact by proportionately contributing to air quality improvements elsewhere (including those identified in Air Quality Action Plans and low emission strategies) should only be considered once the solutions for preventing/avoiding, and then for reducing/minimising, the development-specific impacts have been exhausted. Even then, offsetting should be limited to measures that are likely to have a beneficial impact on air quality in the vicinity of the development site. It is not appropriate to attempt to offset local air quality impacts by measures that may have some effect remote from the vicinity of the development site.

The mitigation measures proposed are appropriate to the scale and nature of the development (see sections 1. to 2.c. above). No additional off-setting measures are proposed.

Conclusions
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Conclusions

The unmitigated risk to local sensitive receptors from emissions of dust and pollution from construction is deemed to be low. However, the risk will be mitigated further through the measures set out in the Air Quality & Dust Management Plan (AQDMP), which will be implemented through the contractor's Construction Environmental Management Plan. With the mitigation measures in place, the residual effects arising from the construction phase of the proposed development would be deemed 'not significant'.

The entire borough was declared as an Air Quality Management Area (AQMA) in 2002 for exceedances of the National Air Quality Objectives (NAQOs) for nitrogen dioxide (NO_2) and 24-hour mean exceedance for particulate matter (PM_{10}). Even though the NAQOs for PM_{10} and $PM_{2.5}$ are currently being met, it remains a pollutant of concern. The site is not located in a NO_2 Focus Area and is not considered as a hotspot of poor Air Quality in Camden.

A review of the latest monitoring data for NO_2 at the closest locations to the development indicates that the NAQO at the closest monitoring station has been consistently achieving between the latest reporting years of 2018-2021. NAQOs at two monitoring sites were consistently achieved for reporting years 2018-2021, where applicable. Additionally, the annual exceedances of the NO_2 hourly mean concentration of 200 $\mu g/m^3$ was not provided, as no automatic monitoring sites have been identified close to the proposed development. The LAEI 2019 modelled mean annual NO_2 concentrations were estimated at approximately 29.1 $\mu g/m^3$ at the site, achieving the NAQO but exceeding the WHO guideline.

Nearby monitored mean annual PM_{10} concentrations and 24-hourly PM_{10} concentrations achieved the NAQOs. The LAEI 2019 modelled mean annual concentrations of PM_{10} at the site were estimated at approximately 16.3 $\mu g/m^3$, achieving the NAQO but exceeding the WHO guidelines.

No nearby monitored mean annual $PM_{2.5}$ concentrations were recorded. The LAEI 2019 modelled mean annual concentrations of $PM_{2.5}$ are estimated as approximately 10.8 $\mu g/m^3$, achieving the NAQO but exceeding the WHO guideline.

Since the development is not located in a NO_2 Focus Area, atmospheric dispersion modelling was not carried out. Therefore, residents having access to amenity spaces will not be exposed to high level of pollution.

For developments within London, the AQA methodology includes the requirement to undertake an assessment against the Air Quality Neutral (AQN) guidance. The scheme has been assessed for both the impacts of transport and building operation against the AQN guidance and it meets the requirements for AQN.

Even though further mitigation measures to reduce exposure of future occupants to pollutants are not explicitly required, the design mitigation hierarchy has been applied nonetheless, to maximise air quality for occupants, where feasible. Measures include provision of low carbon energy technologies and urban greening.

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Air Quality & Dust Management Plan: Roles and Responsibilities

The Site Manager will have overall responsibility for dust management during construction and will ensure that all site personnel are effectively briefed and given adequate resources to undertake the air quality and dust management requirements, as set out in this Air Quality & Dust Management Plan (AQDMP).

Key roles and responsibilities for the Site Manager and site personnel are outlined in Table A-1.

Table A-1: Schedule of AQDMP responsibilities.

Role	Responsibilities
Site manager	Ensure that the mitigation and monitoring requirements outlined in the AQDMP are carried out during works on site.
	Ensure that staff are aware of the requirements of the AQDMP and have access to the document. Regular training of staff should be implemented.
	Undertake and record dust inspections of the site as required by the AQDMP.
	Ensure that site documentation (including method statements and risk assessments) include adequate dust mitigation.
	Act on complaints and dust alerts as detailed in the AQDMP.
	Maintain up-to-date site log of air quality events and complaints.
	Investigate the cause of air quality events and apply additional mitigation are required.
	Act as the key point of contact for queries and complaints regarding air quality emissions from site.
	Report observations of dust events or deviations from the AQDMP procedures.

Table A-1: Schedule of AQDMP responsibilities (continued).

Role	Responsibilities
Site personnel	Carry out the works in accordance with the AQDMP requirements.
	Report observations of dust events or deviations from the AQDMP procedures.
	Attend environmental management training.

Hours of Work

Normal working hours for 61 Redington Road construction site will be as follows:

- Monday – Friday: 08:00 - 18:00.
- Saturday: 08:00 - 13:00.

There will not typically be any construction activities undertaken outside of the stated working hours, including on Sundays, Public Holidays or Bank Holidays. In the event that construction activities are sought to be undertaken outside of the normal working hours, these will be agreed in writing with the local planning authority in advance.

Measures Relevant for Demolition, Earthworks, Construction and Trackout

Robust site management will be required to control the dust emissions from construction activities. Mitigation methods, in accordance with 'The Control of Dust and Emissions during Construction and Demolition' SPG (Mayor of London, 2014) have been proposed for the site.

All 'required' mitigation measures must be implemented. We would strongly recommend that all 'recommended' measures are implemented, along with those that are 'not required' where feasible.

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It is recommended that these measures, as detailed in Table A-2, be set out in the site-specific Construction Environmental Management Plan, which will form part of the proposed development's overall Construction Management Plan.

Table A-2: Schedule of construction phase mitigation measure requirements.

Site management	
Mitigation measure	**Compliance requirements**
1) Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.	Not required
2) Develop a Dust Management Plan.	Not required
3) Display the name and contact details of person(s) accountable for air quality pollutant emissions and dust issues on the site boundary.	Required
4) Display the head or regional office contact information.	Required
5) Record and respond to all dust and air quality pollutant emissions complaints.	Required
6) Make a complaint log available to the local authority when asked.	Required
7) 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.	Required
8) Increase the frequency of site inspections by those accountable for dust and air quality pollutant emissions issues when activities with a high potential to produce dust and emissions and dust are being carried out, and during prolonged dry or windy conditions.	Required
9) Record any exceptional incidents that cause dust and air quality pollutant emissions, either on or off the site, and the action taken to resolve the situation is recorded in the log book.	Required

Table A-2: Schedule of construction phase mitigation measure requirements (continued).

Site management	
Mitigation measure	**Compliance requirements**
10) Hold regular liaison meetings with other high-risk construction sites within 500 m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised.	Not required

Preparing and maintaining the site	
Mitigation measure	**Compliance requirements**
11) Plan site layout: machinery and dust causing activities should be located away from receptors	Required
12) Erect solid screens or barriers around dust activities or the site boundary that are, at least, as high as any stockpiles on site.	Required
13) Full enclosure of the site or specific operations where there is a high potential for dust production and the site is active for an extensive period..	Recommended
14) Install green walls, screens or other green infrastructure to minimise the impact of dust and pollution.	Not required
15) Avoid site runoff of water and mud.	Required
16) Keep site fencing, barriers and scaffolding clean using wet methods.	Recommended
17) Remove materials from site as soon as possible.	Recommended
18) Cover, seed or fence stockpiles to prevent wind whipping.	Not required
19) Carry out regular dust soiling checks of buildings within 100 m of site boundary and cleaning to be provided if necessary.	Not required

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Table A-2: Schedule of construction phase mitigation measure requirements (continued).

Preparing and maintaining the site	
Mitigation measure	Compliance requirements
20) Provide showers and ensure a change of shoes and clothes are required before going off-site to reduce transport of dust.	Not required
21) Agree monitoring locations with the Local Authority.	Not required
22) Where possible, commence baseline monitoring at least three months before phase begins.	Not required
23) Put in place real-time dust and air quality pollutant monitors across the site and ensure they are checked regularly.	Not required

Operating vehicles/machinery and sustainable travel	
Mitigation measure	Compliance requirements
24) Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone.	Required
25) Ensure all non-road mobile machinery (NRMM) comply with the standards set within this guidance.	Required
26) Ensure all vehicles switch off engines when stationary – no idling vehicles.	Required
27) Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where possible.	Required
28) Impose and signpost a maximum-speed-limit of 10mph on surfaced haul routes and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate).	Recommended

Table A-2: Schedule of construction phase mitigation measure requirements (continued).

Operating vehicles/machinery and sustainable travel	
Mitigation measure	Compliance requirements
29) Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.	Not required
30) Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).	Required

Operations	
Mitigation measure	Compliance requirements
31) 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.	Required
32) Ensure an adequate water supply on the site for effective dust/particulate matter mitigation (using recycled water where possible).	Required
33) Use enclosed chutes, conveyors and covered skips.	Required
34) Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.	Required
35) 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.	Not required

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Table A-2: Schedule of construction phase mitigation measure requirements (continued).

Waste management	
Mitigation measure	Compliance requirements
36) Reuse and recycle waste to reduce dust from waste materials.	Required
37) Avoid bonfires and burning of waste materials.	Required

Measures Specific to Demolition

Table A-2: Schedule of construction phase mitigation measure requirements (continued).

Demolition	
Mitigation measure	Compliance requirements
38) Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).	Recommended
39) Ensure water suppression is used during demolition operations.	Required
40) Avoid explosive blasting, using appropriate manual or mechanical alternatives.	Required
41) Bag and remove any biological debris or damp down such material before demolition.	Required

Measures Specific to Earthworks

Table A-2: Schedule of construction phase mitigation measure requirements (continued).

Earthworks	
Mitigation measure	Compliance requirements
42) Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces.	Not required
43) Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil.	Not required
44) Only remove secure covers in small areas during work and not all at once.	Not required

Appendix A
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Measures Specific to Construction

Table A-2: Schedule of construction phase mitigation measure requirements (continued).

Construction	
Mitigation measure	Compliance requirements
45) Avoid scabbling (roughening of concrete surfaces) if possible.	Recommended
46) 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.	Recommended
47) Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.	Not required
48) For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust.	Not required

Measures Specific to Trackout

Table A-2: Schedule of construction phase mitigation measure requirements (continued).

Trackout	
Mitigation measure	Compliance requirements
49) Regularly use a water-assisted dust sweeper on the access and local roads, as necessary, to remove any material tracked out of the site.	Recommended
50) Avoid dry sweeping of large areas.	Recommended
51) Ensure vehicles entering and leaving sites are securely covered to prevent escape of materials during transport.	Recommended
52) Record all inspections of haul routes and any subsequent action in a site logbook.	Not required
53) Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems and regularly cleaned.	Not required
54) Inspect haul routes for integrity and instigate necessary repairs to the surface, as soon as reasonably practicable.	Not required
55) Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).	Recommended
56) Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.	Not required
57) Access gates to be located at least 10m from receptors, where possible.	Not required
58) Apply dust suppressants to locations where a large volume of vehicles enters and exit the construction site.	Not required