



LUSTRE






CONSULTING

RINGERS ROAD - BROMLEY

AIR QUALITY ASSESSMENT





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| RELIANCE AND LIMITATIONS | | |
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1.0 INTRODUCTION

1.1 This Air Quality Assessment has been prepared for the clearance and development of a site off Ringers Road, in Bromley, Kent BR1 1HT by Lustre Consulting Limited (Lustre) for Ringers Road Properties Ltd (the Client). The assessment has been undertaken in accordance with our fee proposal dated 08/10/2020, which was formally approved by Ringers Road Properties Ltd on 13/10/2020.

1.2 The project description is as follows:

“Demolition of existing buildings and construction of a mixed-use development comprising residential units, ancillary residents’ facilities (including co-working space) and commercial floor space (Use Class E) across two blocks, along with associated hard and soft landscaping, amenity spaces, cycle and refuse storage”.

1.3 The site, irregular in plan, is centred at National Grid Reference 540241, 168909, and occupies an approximate area of 0.11ha as shown in Figure 1. The site currently comprises two buildings, one fronting onto Ringers Road and the other fronting onto Ethelbert Road. The Ethelbert Road property comprises residential studio apartments with a communal garden, and the Ringers Road property comprises a restaurant and bar, with the upper levels leased to a photographic studio. The site is located within a mixed commercial and residential land use area. The Client requires this Air Quality Assessment to support re-development works at the site. It is understood that proposals involve the clearance of the site and construction of a residential development. The proposed development will comprise two blocks of residential apartments with communal open space. Figure 2 illustrates the proposed development scheme.



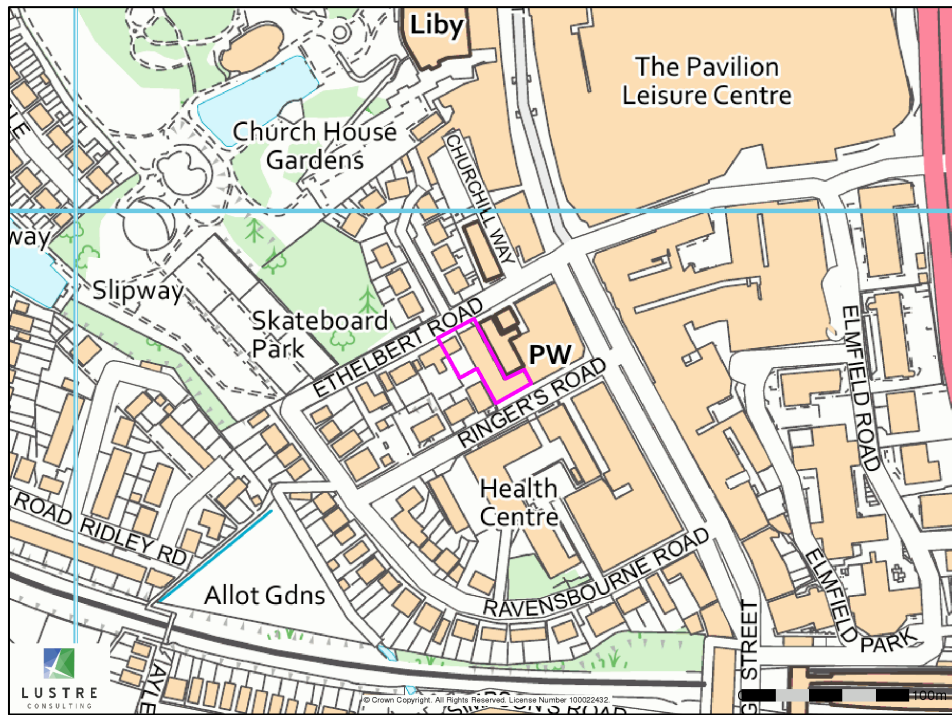


Figure 1: Site Location Plan (in pink)

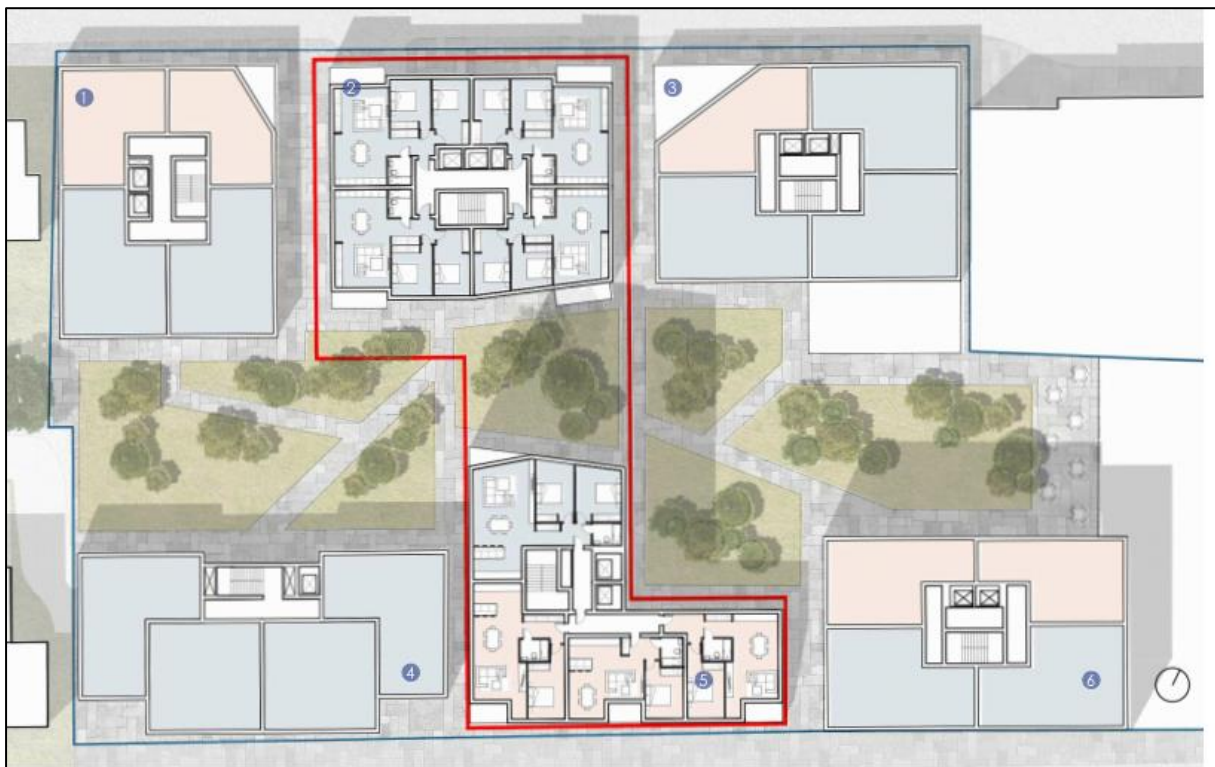


Figure 2: Proposed Site Layout





Objectives & Scope

- 1.4 Following consultation with the London Borough of Bromley, it was determined that there is no recent traffic data available for Ringers Road, Ethelbert Road or the High Street.
- 1.5 As such, it has not been possible to undertake formal modelling of local traffic emissions across the proposed. However, the London Air website¹ indicates that are nitrogen dioxide (NO₂) and particulate matter (PM₁₀) concentrations across the proposed development are well **below** the relevant air quality objectives and these not expected to pose a risk to proposed residential receptors at the site. This is shown in Figure 3.



Figure 3: Annual Mean Pollutant Concentrations

- 1.6 As such, this report has focused more on the potential impact on local air quality from demolition and construction activities at the site.

¹ <https://www.londonair.org.uk/map-maker/>





- 1.7 Given the scale of the proposed development, it is clear it will be for more than 10 residential units and therefore an air quality neutral assessment has been undertaken, in line with the requirements of the London Plan.

Reliance and Limitations

- 1.8 This report has been prepared using published information and information provided by the Client made available at the time of writing only. Lustre Consulting accepts no liability for any information which has become available since this time.
- 1.9 Lustre Consulting owes no duty of care and has no liability to any Third Party who is not authorised by Lustre Consulting to use this report. Any unauthorised Third parties using information contained in this report do so at their own risk.
- 1.10 Third party information which has been reviewed and used to inform the assessments presented herein, including public records held by various regulatory authorities and environmental database data has been assumed to be true and accurate.
- 1.11 This assessment has been carried out to determine the potential impacts posed to future end users, along with other key receptors, based on the current development. Should revisions in the development proposals result in a change any assessment parameters detailed in this report, a re-assessment of the impacts and associated mitigation measures should be carried out.





2.0 PLANNING POLICY AND GUIDANCE

National Planning Policy & Guidance

- 2.1 On a national level, air quality can be a material consideration in planning decisions. The updated National Planning Policy Framework (NPPF) for England, released in July 2021, is considered a key part of the Governments reforms to make the planning system less complex and more accessible, to protect the environment and to promote sustainable growth.
- 2.2 Paragraph 105 within the NPPF states that the “*The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making*”.
- 2.3 It goes on to state in paragraph 186 that “*Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan*”.

Land-Use Planning & Development Control

- 2.4 In January 2017, Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM) produced guidance to ensure that air quality is adequately considered in the land-use planning and development control processes².

² Land-Use Planning & Development Control: Planning for Air Quality. Guidance from Environmental Protection UK and the Institute of Air Quality Management for the consideration of air quality within the land-use planning and development control processes. EPUK & IAQM. January 2017





- 2.5 The guidance document is particularly applicable to assessing the effect of changes in exposure of members of the public resulting from residential and mixed-use developments, especially those within urban areas where air quality is poorer. It is also relevant to other forms of development where a proposal could affect local air quality and for which no other guidance exists.

Regional Planning Policy

The Mayor's Air Quality Strategy

- 2.6 In October 2010, the Mayor's Air Quality Strategy³ was released. The strategy sets out a framework for delivering improvements to London's air quality and includes measures aimed at reducing emissions from transport, homes, offices and new developments, as well as raising awareness of air quality issues and its impact on health.

The London Plan

- 2.7 The most recent London Plan was published in March 2021. Policy SI1 relates specifically to air quality and states the following:

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

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

- 1) *Development proposals should not:*
 - a. *lead to further deterioration of existing poor air quality*
 - b. *create any new areas that exceed air quality limits, or delay the date at which compliance will be achieved in areas that are currently in exceedance of legal limits*
 - c. *create unacceptable risk of high levels of exposure to poor air quality.*
- 2) *In order to meet the requirements in Part 1, as a minimum:*
 - a. *Development proposals must be at least air quality neutral*

³ Clearing the Air: The Mayor's Air Quality Strategy. October 2010





- b. Development proposals should use design solutions to prevent or minimise increased exposure to existing air pollution and make provision to address local problems of air quality in preference to post-design or retro-fitted mitigation measures*
- c. Major development proposals must be submitted with an Air Quality Assessment. Air quality assessments should show how the development will meet the requirements of B1*
- d. development proposals in Air Quality Focus Areas or that are likely to be used by large numbers of people particularly vulnerable to poor air quality, such as children or older people should demonstrate that design measures have been used to minimise exposure*

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

- a. How proposals have considered ways to maximise benefits to local air quality, and*
- b. 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”.





Supplementary Planning Guidance (SPG)

Control of Dust and Emissions during Construction and Demolition SPG

2.8 The Greater London Authority (GLA) released the “*Control of Dust and Emissions during Construction and Demolition*” SPG in July 2014⁴. The guidance seeks to reduce emissions of dust and PM₁₀ from construction and demolition activities in London. It also aims to manage emissions of nitrogen oxides (NO_x) from construction and demolition machinery. The SPG:

- Provides more detailed guidance on the implementation of all relevant policies in the London Plan and the Mayor’s Air Quality Strategy to neighbourhoods, boroughs, developers, architects, consultants and any other parties involved in any aspect of the demolition and construction process;
- Sets out the methodology for assessing the air quality impacts of construction and demolition in London; and
- Identifies good practice for mitigating and managing air quality impacts that is relevant and achievable, with the overarching aim of protecting public health and the environment.

2.9 The principles of the SPG apply to all developments in London as their associated construction and demolition activity may all contribute to poor air quality unless properly managed and mitigated.

Sustainable Design and Construction SPG

2.10 The Greater London Authority (GLA) released the “Sustainable Design and Construction” SPG in July 2014⁵. The SPG aims to support developers, local planning authorities and neighbourhoods to achieve sustainable development. It provides guidance on to how to achieve the London Plan objectives effectively, supporting the Mayor’s aims for growth, including the delivery of housing and infrastructure.

⁴ The Control of Dust and Emissions during Construction and Demolition SPG. Greater London Authority, July 2014

⁵ Sustainable Design and Construction SPG. Greater London Authority, July 2014





3.0 ASSESSMENT METHODOLOGY

Construction Phase

3.1 Based on the “*Control of Dust and Emissions during Construction and Demolition*” SPG discussed in the previous section, the main air quality impacts that may arise during construction activities are:

- Dust deposition, resulting in the soiling of surfaces;
- Visible dust plumes, which are evidence of dust emissions;
- Elevated PM₁₀ concentrations, as a result of dust generating activities on site; and
- An increase in concentrations of airborne particles and nitrogen dioxide due to exhaust emissions from diesel powered vehicles and equipment on site.

3.2 In relation to the most likely impacts, the guidance states the following:

“The most common impacts are dust soiling and increased ambient PM₁₀ concentrations due to dust arising from activities on the site. Dust soiling will arise from the deposition of particulate matter in all size fractions.

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”.

3.3 The guidance continues by providing an assessment procedure. This includes sub-dividing construction activities into four types to reflect their different potential impacts. These are as follows:

- Demolition;
- Earthworks;
- Construction; and
- Track out.

3.4 With regards to the proposed development the potential for dust emissions is assessed for each activity that is likely to take place. The assessment procedure assumes no mitigation measures are applied. The conditions with no mitigation thus form the baseline or “do-nothing” situation for a construction site. The assessment procedure uses the steps provided in the guidance and summarised in Figure 4.



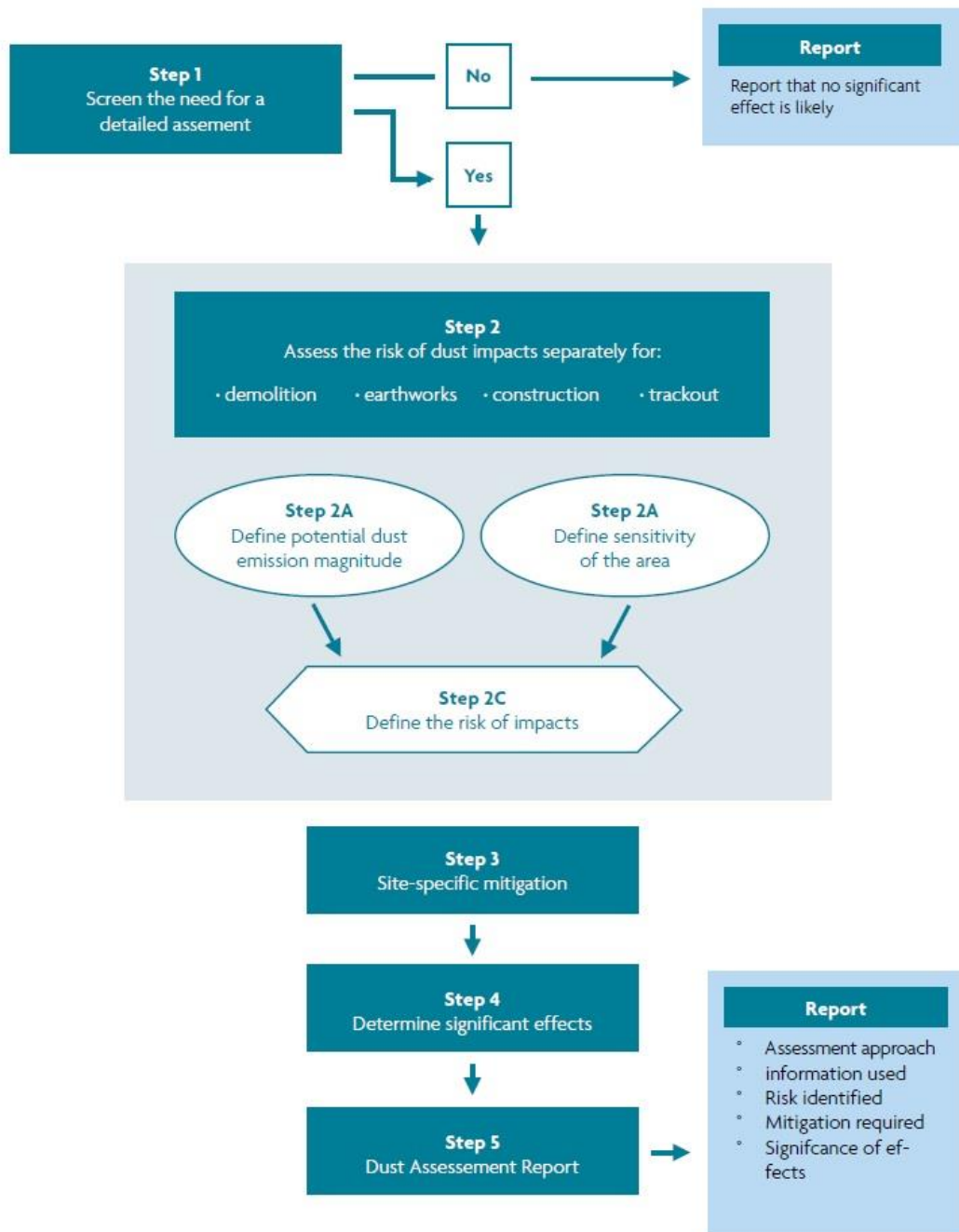


Figure 4: Dust Assessment Procedure



Significance Criteria

Construction Phase

- 3.5 The risk of dust arising in sufficient quantities to cause annoyance and/or health and/or ecological impacts should be determined using four risk categories: negligible, low, medium and high risk. A development is allocated to a risk category based on two factors:
- the scale and nature of the works, which determines the potential dust emission magnitude as small, medium or large (see Table 1); and
 - the sensitivity of the area to dust impacts, which is defined as low, medium or high sensitivity (see Tables 2 and 3).
- 3.6 These two factors are combined to determine the risk of dust impacts with no mitigation applied (see Table 4). The risk category assigned to the development can be different for each of the four potential activities (demolition, earthworks, construction and trackout).

Table 1 – Dust Emission Magnitude

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





Table 2 – Sensitivity of the Area to Dust Soiling Effects on People and Property

| Sensitivity of the Area to Dust Soiling Effects | | | | | |
|---|---------------------|------------------------------|--------|--------|------|
| Receptor Sensitivity | Number of Receptors | Distance from the Source (m) | | | |
| | | <20 | <50 | <100 | <350 |
| 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 3 – Sensitivity of the Area to Human Health Impacts

| Sensitivity of the Area to Human Health Effects | | | | | | | |
|---|--|---------------------|------------------------------|--------|--------|--------|------|
| Receptor Sensitivity | Annual Mean PM ₁₀ Concentration | Number of Receptors | Distance from the Source (m) | | | | |
| | | | <20 | <50 | <100 | <200 | <350 |
| High | >32 µg/m ³ | >100 | High | High | High | Medium | Low |
| | | 10-100 | High | High | Medium | Low | Low |
| | | 1-10 | High | Medium | Low | Low | Low |
| | 28-32 µg/m ³ | >100 | High | High | Medium | Low | Low |
| | | 10-100 | High | Medium | Low | Low | Low |
| | | 1-10 | High | Medium | Low | Low | Low |
| | 24-28 µg/m ³ | >100 | High | Medium | Low | Low | Low |
| | | 10-100 | High | Medium | Low | Low | Low |
| | | 1-10 | Medium | Low | Low | Low | Low |
| | <24 µg/m ³ | >100 | Medium | Low | Low | Low | Low |
| | | 10-100 | Low | Low | Low | Low | Low |
| | | 1-10 | Low | Low | Low | Low | Low |
| Medium | - | >10 | High | Medium | Low | Low | Low |
| | - | 1-10 | Medium | Low | Low | Low | Low |
| Low | - | >1 | Low | Low | Low | Low | Low |

Table 4 – Risk of Dust Impacts

| Construction Activity | Sensitivity of 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 |
| Track out | High | High Risk | Low Risk | Low Risk |
| | Medium | Medium Risk | Low Risk | Negligible |
| | Low | Low Risk | Low Risk | Negligible |





4.0 AIR QUALITY ASSESSMENT

Impact from Construction Activities

4.1 The assessment of construction activities has focused on demolition, earthworks, construction and track out activities at the site. Using the criteria provided in Table 1 the dust emission magnitude for each activity is as follows:

- Demolition = Small;
- Earthworks = Small;
- Construction = Small; and
- Track out = Small.

4.2 The sensitivity of the surrounding area to dust soiling and human health (Table 5) is then defined based on the criteria in Tables 2 and 3, which includes the number of highly sensitive receptors that fall within a certain distance of the proposed construction phase (see Figure 5).

Table 5 – Sensitivity of the Surrounding Area

| Potential Impact | Comments | Sensitivity |
|------------------|--|-------------|
| Dust Soiling | There are more than 1 medium sensitivity receptors e.g. places of work, and between 1 and 10 high sensitivity receptors e.g. residential properties, within 20 metres of the proposed development. | Medium |
| Human Health | There are between 1 and 10 medium sensitivity receptors e.g. places of work, within 20 metres of the proposed development. | Medium |

4.3 The dust emission magnitudes and sensitivity of the surrounding area are combined to determine the risk of dust impacts with no mitigation applied. These are summarised in Table 6.

Table 6 – Summary of Dust Risk

| Potential Impact | Risk | | | |
|------------------|------------|------------|--------------|------------|
| | Demolition | Earthworks | Construction | Trackout |
| Dust Soiling | Low Risk | Low Risk | Low Risk | Negligible |
| Human Health | Low Risk | Low Risk | Low Risk | Negligible |





Figure 5: Distance from the Proposed Development

- 4.4 It should also be noted that the likelihood of an adverse impact occurring is correlated to wind speed and wind direction. As such, unfavourable wind speeds and wind directions must occur at the same time as a dust generating activity to generate an adverse impact. The overall impacts also assume that the dust generating activities are occurring over the entirety of the site meaning that as an activity moves further away from a potential receptor the magnitude and significance of the impact will be further reduced.



5.0 AIR QUALITY NEUTRAL ASSESSMENT

Introduction

5.1 Policy 7.14 within the London Plan states that every "major" development in Greater London be at least "air quality neutral" and not lead to further deterioration of existing poor air quality. Within the London Plan, a "major" development is defined by the following criteria:

- 10 or more residential dwellings (or where the number is not given, an area of more than 0.5 ha); or
- For all other uses, where floor space is 1,000 sq m or more (or the site is 1 ha or more).

5.2 As such, the proposed development is classified as a "major" development with 10 or more residential dwellings and a floor space of more than 1,000 sq m.

5.3 The air quality neutral assessment has followed the methodology outlined in the Sustainable Design and Construction Supplementary Planning Guidance (SPG) and the Air Quality Neutral Planning Support Update. Within these documents, benchmarks have been provided in relation to building and transport emissions, together with a methodology for calculating the building and transport related emissions for a particular development.

5.4 There will be no gas utilised on site. As such, the air quality neutral assessment for building emissions has not been undertaken.

Transport Emissions

5.5 The Transport Emissions Benchmarks (TEBs) are calculated by multiplying the relevant emission benchmarks by the number of properties for residential and or floor space for commercial use. This is summarised in Table 7.





Table 7 –Transport Emissions Benchmarks (NOx and PM₁₀)

| NOx | | | | |
|---|-----------------|--|-------------------------------|--------------------------------|
| Land Use | Floor Area | Transport Emission Benchmark (g/m ² /annum) | Transport Emissions (g/annum) | Transport Emissions (kg/annum) |
| B1 | 389 | 69 | 26,694 | 27 |
| Land use | No of Dwellings | Transport Emission Benchmark (g/dwelling/annum) | Transport Emissions (g/annum) | Transport Emissions (kg/annum) |
| C3 | 94 | 1,553 | 146,014 | 146 |
| Total Benchmarked Transport NOx Emission | | | 172,708 | 173 |
| PM ₁₀ | | | | |
| Land Use | Floor Area | Transport Emission Benchmark (g/m ² /annum) | Transport Emissions (g/annum) | Transport Emissions (kg/annum) |
| B1 | 389 | 12 | 4,583 | 5 |
| Land use | No of Dwellings | Transport Emission Benchmark (g/dwelling/annum) | Transport Emissions (g/annum) | Transport Emissions (kg/annum) |
| C3 | 94 | 267 | 25,066 | 25 |
| Total Benchmarked Transport PM₁₀ Emission | | | 29,649 | 30 |

5.6 Based on the information provided by the transport consultants, the proposed development will generate 25 daily vehicle movements (9,125 per annum) associated with the proposed residential elements and 51 daily vehicle movements (18,615 per annum) associated with the proposed co-working elements. As such, the total trip emissions for NOx and PM₁₀ have been calculated in Table 8. It should be noted that overall the proposed development will result in fewer daily vehicle movements compared to the existing site. Furthermore, the vehicle flows above are worst case as they include vehicles already on the network, such as taxis and delivery vehicles.

Table 8 – Total Transport Emissions (NOx and PM₁₀)

| Land Use | Total Trips Per Annum | Total Distance (veh-km/annum) | Total Transport Emissions (g/annum) | Total Transport Emissions (kg/annum) |
|---|-----------------------|-------------------------------|-------------------------------------|--------------------------------------|
| NOx | | | | |
| B1 | 18,615 | 201,042 | 70,968 | 71 |
| C3 | 9,125 | 104,025 | 36,721 | 37 |
| Total Transport NOx Emission | | | 107,689 | 108 |
| PM ₁₀ | | | | |
| B1 | 18,615 | 201,042 | 12,183 | 12 |
| C3 | 9,125 | 104,025 | 6,304 | 6 |
| Total Transport PM₁₀ Emission | | | 18,487 | 18 |





- 5.7 Based on the comparison between the total transport emissions and transport Emissions Benchmarks (see Table 9) the proposed development is considered air quality neutral in relation to the proposed transport emissions.

Table 9 –Comparison of Total Transport Emissions and Transport Emissions Benchmarks

| Pollutant | Total Benchmarked Transport Emissions (kg/annum) | Total Transport Emissions (kg/annum) | Difference (kg/annum) |
|------------------------|--|--------------------------------------|-----------------------|
| NOx | 173 | 108 | -65 |
| PM₁₀ | 30 | 18 | -11 |

- 5.8 The TRAVL benchmark trip rates for A3 land use classification in outer London is 170 trips/m²/annum. With a floor area of 160 m² this equates to a benchmark trip rate of 27,200 per annum. The proposed A3 use will generate 37 daily vehicle movements. This equates to a trip rate of 13,505 per annum. The annual trip rate is lower than the benchmark trip rate. As such, the proposed cafe is considered air quality neutral in relation to the transport emissions.

Building Emissions

- 5.9 The Building Emissions Benchmarks (BEBs) for the land use category applicable to residential properties are provided in Table 10. Emissions of PM₁₀ have not been considered as oil and/or solid fuel are not proposed to be used at the development.

Table 10 – Predicted PM₁₀ Concentrations, Annual Mean (µg/m³)

| Land Use Class | NOx (g/m ² /annum) |
|----------------|-------------------------------|
| C3 | 26.2 |

- 5.10 Using the method described within the Air Quality Neutral Planning Support Update, the site specific benchmarked emissions have been calculated using the emission rate in Table 10. These are summarised in Table 11. The total building NOx emissions have then been calculated and are summarised in Table 12.

Table 11 – Calculation of Benchmarked NOx Emissions Using Building Emissions Benchmarks for Each Land Use Category

| Land Use | GFA (m ²) | Building Emissions Benchmarks (g/m ² /annum) | Benchmarked Emissions (kg/annum) |
|-----------|-----------------------|---|----------------------------------|
| C3 | 6,068 | 26.2 | 159.0 |





Table 12 – Calculation of Total Building NOx Emissions

| Land Use | Gas Usage (kWh/annum) | Emission Factors (kg/kWh) | Total Building Emissions (kg/annum) |
|----------|-----------------------|---------------------------|-------------------------------------|
| C3 | 112,550 | 0.000040 | 4.5 |

- 5.11 Based on the comparison between the total building emissions and Building Emissions Benchmarks (see Table 13) the proposed development meets the air quality neutral requirements and no mitigation is required.

Table 13 – Comparison of Total Building NOx Emissions and Building Emissions Benchmarks

| Total Benchmarked Emissions (kg/annum) | Total Building Emissions (kg/annum) | Difference (kg/annum) |
|--|-------------------------------------|-----------------------|
| 159.0 | 4.5 | -154.5 |





6.0 CONCLUSIONS AND RECOMMENDATIONS

Impact Construction Activities

- 6.1 A qualitative assessment of dust levels associated with the proposed development has been carried out. The impact of dust soiling and PM₁₀ can be reduced to negligible through appropriate mitigation measures, which are listed in Table 14 and are applicable to a low risk site. Implementation of these Best Practice Measures will help reduce the impact of the construction activities to an acceptable level.
- 6.2 With these mitigation measures enforced, the likelihood of nuisance dust episodes occurring at those receptors adjacent to the development are considered low. Notwithstanding this, the developer should take into account the potential impact of air quality and dust on occupational exposure standards (in order to minimise worker exposure) and breaches of air quality objectives that may occur outside the site boundary. Monitoring is not recommended at this stage, however, continuous visual assessment of the site should be undertaken and a complaints log maintained in order determine the origin of a particular dust nuisance. Keeping an accurate and up to date complaints log will isolate particular site activities to a nuisance dust episode and help prevent it from reoccurring in the future.

Air Quality Neutral Assessment

- 6.5 The proposed development is considered air quality neutral in relation to the building and transport emissions.





Table 14 – Mitigation of Construction Activities

| Construction Activity | Mitigation Measures |
|---|---|
| Site Management | Display the name and contact details of person(s) accountable for air quality pollutant emissions and dust issues on the site boundary. |
| | Display the head or regional office contact information. |
| | Record and respond to all dust and air quality pollutant emissions complaints. |
| | Make a complaints log available to the local authority when asked. |
| | Carry out regular site inspections to monitor compliance with air quality and dust control procedures, record inspection results, and make an inspection log available to the local authority when asked. |
| | Increase the frequency of site inspections by those accountable for dust and air quality pollutant emissions issues when activities with a high potential to produce dust and emissions and dust are being carried out, and during prolonged dry or windy conditions. |
| | 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. |
| Preparing and Maintaining the Site | Plan site layout: machinery and dust causing activities should be located away from receptors. |
| | Erect solid screens or barriers around dust activities or the site boundary that are, at least, as high as any stockpiles on site. |
| | Avoid site runoff of water or mud. |
| Operating Vehicle/Machinery and Sustainable Travel | Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone and Ultra Low Emission Zone |
| | Ensure all non-road mobile machinery (NRMM) comply with the relevant standards. |
| | 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 possible. |
| | Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing). |
| Operations | Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems. |
| | Ensure an adequate water supply on the site for effective dust/particulate matter mitigation (using recycled water where possible). |
| | Use enclosed chutes, conveyors and covered skips. |
| | Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate. |
| Waste Management | Reuse and recycle waste to reduce dust from waste materials |
| | Avoid bonfires and burning of waste materials. |



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