



Plans Drawn

371 Oldham Road, The Sheridan – Main Building

Air Quality Screening Assessment

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Executive Summary

Bureau Veritas UK Ltd has been commissioned by Plans Drawn (“the Client”) to undertake an air quality assessment in support of a planning application for the internal changes to the ground floor area of The Sheridan Suite, 371 Oldham Road, Miles Platting, Manchester, M40 8PR (“the Site”). The proposals comprise the internal demolition of the existing units and construction of 28 units within the main building for mixed uses, e.g. dining out and shopping. An open plan external seating area will be added to the building exterior.

The assessment has considered the existing air quality conditions and potential air quality effects during the construction phase of the development. The assessment of dust and PM₁₀ effects from the construction phase of the development was subject to a qualitative assessment undertaken in line the Institute of Air quality Management (IAQM) Guidance on the assessment of dust from demolition and construction. The assessment carried out has shown that, providing effective mitigations are implemented, any effects from dust emissions during the construction phase would be **Not Significant**.

Background concentration maps and nearby monitoring demonstrate that background and roadside concentrations remain lower than the annual mean AQS objectives for all pollutants for the baseline year of 2025 and the predicted development opening year of 2028.

There is not expected to be a significant change in traffic movements as a result of the development, therefore there is not predicted to be any significant effect during the operational phase with regards to Air Quality, and no further mitigation is required.

1 INTRODUCTION

Bureau Veritas UK Ltd has been commissioned by Plans Drawn (“the Client”) to undertake an air quality assessment in support of a planning application for the internal changes to the ground floor area of the Sheridan Suite, 371 Oldham Road, Miles Platting, Manchester, M40 8PR (“the Site”). The proposals comprise internal demolition of the existing units and construction of 28 units within the main building for mixed uses, e.g. dining out and shopping. An open plan external seating area will be added to the building exterior.

The proposed development Site is located in Manchester, and is bounded to the north by railways, GB Railfreight and Breedon Manchester (Central) Ready-Mixed Concrete & Aggregates Plant, to the east by a car park and small wooded area and to the south and west by A-Roads A6010 and A62, respectively.,

The Site is understood to be located located approximately:

- 15m north of the Manchester AQMA. The AQMA extends in a corridor along Oldham Road (A62) which the Site is bounded by.

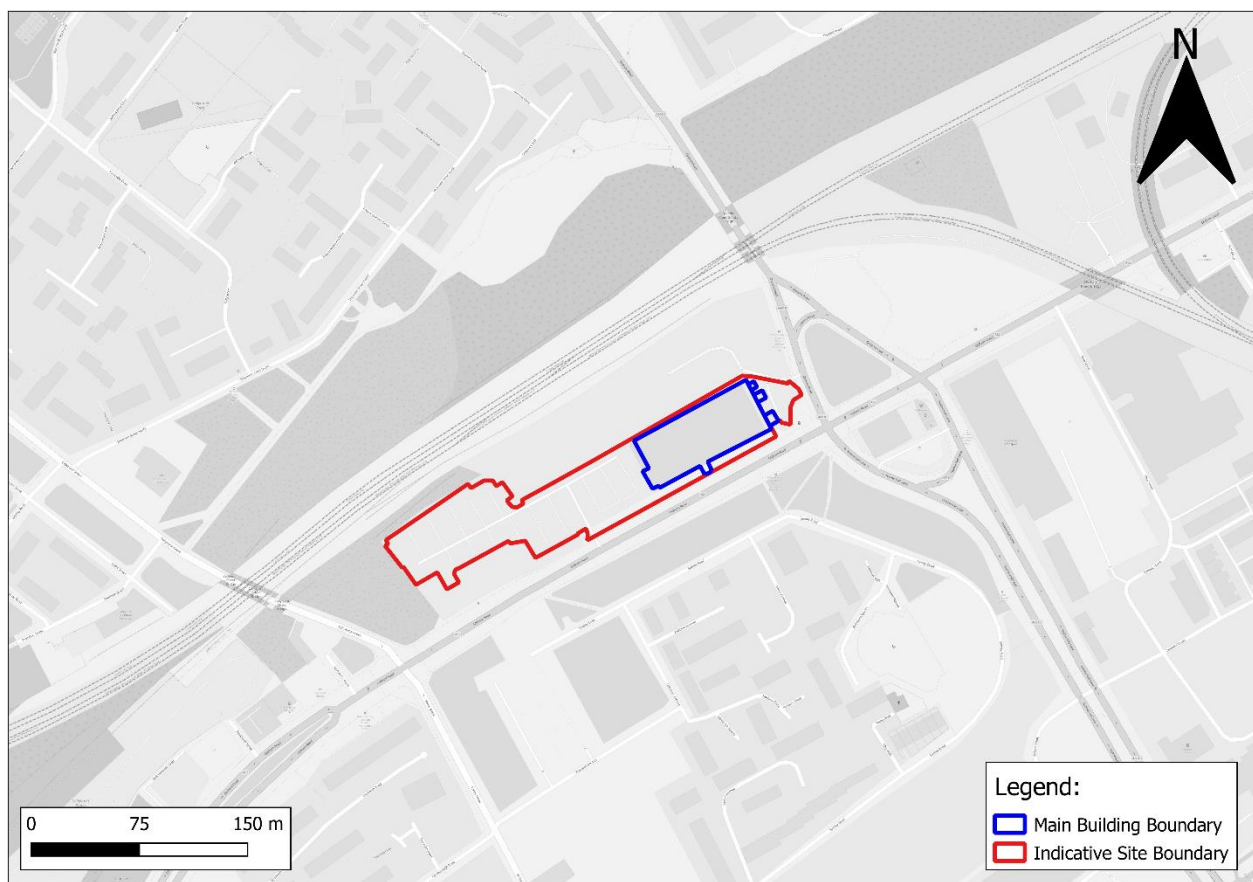
The AQMA has been declared by Manchester City Council for exceedances of the annual mean Nitrogen Dioxide (NO₂) limit and Particulate Matter (PM₁₀) 24-hour mean limit.

The proposed development area is deemed sensitive due to proximity from a declared AQMA.

The purpose of this assessment is to determine any potential air quality impacts associated with the proposed development.

The Site location is illustrated in Figure 1.1 and a layout plan is provided in Appendix B.

Figure 1.1 - Site Location



1.1 Scope of the Assessment

The following are the main objectives of the assessment:

- To obtain and review the Council's latest statutory air quality reports and place them (and any relevant monitoring results) within the context of the proposed development;
- To assess, qualitatively, any short-term impacts of the construction phase on sensitive receptors adjacent to the proposed construction activities;
- Determine appropriate controls during any construction works of the proposed development;
- Undertake a screening air quality assessment (AQA) to characterise existing air quality conditions in the area and to quantify the effect (if any) the development may have on these conditions and its impact upon existing receptor locations near to the Site.
- Evaluate the impacts of the development and proposed mitigation within the context of compliance with the Greater Manchester Air Quality action plan 2016.

The assessment covers the existing air quality conditions at the Site, the impact on air quality during the construction phase of the development and the potential impact of the development during the operational phase. Further general information in relation to the pollutants considered and urban pollution is provided in Appendix A.

2 RELEVANT LEGISLATION, POLICY AND GUIDANCE

2.1 Legislation and Policy

2.1.1 Legislation

The Air Quality Standards Regulations 2010 (as amended)¹ set limit values for concentrations in outdoor air of major air pollutants.

The Air Quality Strategy Volume 1², provides the over-arching strategic framework for air quality management in the UK and contains national air quality standards (AQS) and objectives (AQO) established by the UK Government and Devolved Administrations to protect human health.

The AQS objectives apply at locations outside buildings or other natural or man-made structures above or below ground, where members of the public are regularly present and might reasonably be expected to be exposed to pollutant concentrations over the relevant averaging period. Typically, these include residential properties and schools/care homes for long-term (i.e., annual mean) pollutant objectives and streets or amenity areas for short-term (i.e., 1-hour) pollutant objectives. Table 2.1, taken from LAQM TG(22)³, provides an indication of those locations that may or may not be relevant for each averaging period.

Table 2.1 - Examples of where the AQS Objectives should apply

Averaging Period	Objectives should apply at:	Objectives should generally not apply at:
Annual mean	All locations where members of the public might be regularly exposed. Building facades of residential properties, schools, hospitals, care homes etc.	Building facades of offices or other places of work where members of the public do not have regular access. Hotels, unless people live there as their permanent residence. Gardens of residential properties. Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term
24-hour mean and 8-hour mean	All locations where the annual mean objectives would apply, together with hotels. Gardens or residential properties ¹ .	Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term.
1-hour mean	All locations where the annual mean and 24 and 8-hour mean objectives would apply. Kerbside sites (e.g. pavements of busy shopping streets). Those parts of car parks, bus stations and railway stations etc. which are not fully enclosed, where the public might reasonably be expected to spend one hour or more. Any outdoor locations at which the public may be expected to spend one hour or longer.	Kerbside sites where the public would not be expected to have regular access.
15-minute mean	All locations where members of the public might reasonably be expected to spend a period of 15 minutes or longer.	

Notes:

¹ For gardens and playgrounds, such locations should represent parts of the garden where relevant public exposure is likely, for example where there is seating or play areas. It is unlikely that relevant public exposure would occur at the extremities of the garden boundary, or in front gardens, although local judgement should always be applied.

¹ The National Archives (2010) The Air Quality Standards Regulations 2010.

² Defra (2011) The air quality strategy for England, Scotland, Wales and Northern Ireland: Volume 1.

³ LAQM Technical Guidance LAQM TG(22) – August 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.

This assessment focuses on NO₂, PM₁₀ and PM_{2.5} as these are the pollutants of most concern within the UK. The AQS objectives for these pollutants are presented in Table 2.2.

Table 2.2 - Relevant AQS Objectives for the Assessed Pollutants in the UK

Pollutant	AQS Objective	Concentration Measured as:	Date for Achievement
Nitrogen Dioxide (NO ₂)	200 µg/m ³ not to be exceeded more than 18 times per year	1-hour mean	31 December 2005
	40 µg/m ³	Annual mean	31 December 2005
Particulate Matter (PM ₁₀)	50 µg/m ³ not to be exceeded more than 7 times per year	24-hour mean	1 January 2005
	40 µg/m ³	Annual mean	1 January 2005
Particulate Matter (PM _{2.5})	20 µg/m ³	Annual Mean	1 January 2020
	12 µg/m ³	Annual Mean	January 2028
	10 µg/m ³	Annual Mean	31 December 2040

2.1.2 National Planning Policy

The National Planning Policy Framework (NPPF)⁴ sets out government's planning policies for England and how these are expected to be applied. It states that the planning system should contribute to and enhance the natural, built and historic environment, by preventing new development from contributing or being adversely affected by unacceptable concentrations of air pollution and development should, wherever possible, help to improve local environmental conditions such as air and water quality. In specific relation to the air quality policy, the document states:

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

2.1.3 National Planning Practice Guidance

The National Planning Practice Guidance (NPPG)⁵ provides guidance on how planning can take account of the impact of new development on air quality.

It is stated in the NPPG that air quality is relevant to planning applications when the development could:

"Expose people to existing sources of air pollutants. This could be by building new homes, workplaces or other development in places with poor air quality."

2.1.4 Local Air Quality Management (LAQM)

Part IV of the Environment Act 1995, amended in 2021⁶ places a statutory duty on local authorities to periodically review and assess the current and future air quality within their area and determine whether they

⁴ National Planning Policy Framework (2024), available at: <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

⁵ National Planning Practice Guidance – Air Quality (2019), available at: <https://www.gov.uk/guidance/air-quality--3>

⁶ Environment Act (2021), Part IV. Published by the UK Government. Available at: <https://www.legislation.gov.uk/ukpga/2021/30/part/4/enacted>

are likely to meet the AQS objectives set down by Government for a number of pollutants – a process known as Local Air Quality Management (LAQM). The AQS objectives that apply to LAQM are defined for seven pollutants: benzene, 1,3-butadiene, carbon monoxide, lead, nitrogen dioxide, sulphur dioxide and particulate matter.

Local Authorities are required to review concentrations of these pollutants annually. Where the AQS objectives are identified to be exceeded for any of these pollutants within this annual report, a local authority is required to define and declare an Air Quality Management Area (AQMA).

Where an authority has declared an AQMA, and development is proposed to take place either within or near the declared area, further deterioration to air quality resulting from a proposed development can be a potential barrier to gaining consent for the development proposal. Similarly, where a development would lead to an increase of the population within an AQMA, the protection of residents against the adverse long-term impacts of exposure to existing poor air quality can provide the barrier to consent.

2.1.5 Local Plan

Manchester City Council adopted the Core Strategy 2012-2027⁷ in July 2012, which references the overall vision, strategic objectives, spatial strategy and strategic planning policies for the city to 2027. It covers the key issues of economy and city centre, housing, centres, transport and the environment by highlighting actions to meet future environmental, economic, and social needs, and providing an indication of development beyond this period.

Within the Core Strategy, Policy CC 5 (Transport) states in relation to air quality that:

“Developers should work with public transport providers to ensure that all users are able to access development by sustainable means, especially taking into account of times when developments are

Within the Core Strategy, Policy EN 16 (Air Quality) states that:

“Developers will be expected to take measures to minimise and mitigate the local impact of emissions from traffic generated by the development, as well as emissions created by the use of the development itself, including from Combined Heat and Power and biomass plant.”

The currently adopted Places for Everyone Plan⁸ (adopted in March 2024), sets out the policies for the kind of development that should take place across the city-region up to 2039. Some of the Core Strategy (CS) policies in Manchester City Council’s Core Strategy 2012-2027 have been partially replaced by the Places for Everyone (PfE) policies laid out in this document. The document is structured around policies which cover the themes of strategy, places for jobs, places for homes, greener places, places for people, connected places, and then area-specific policies under allocations. These policies contain criteria which planning applications for new development across the region will be assessed.

Within the Places for Everyone Plan, Policy JP-S5 (Clean Air) states that:

“A comprehensive range of measures will be taken to support improvements in air quality, focusing particularly on locations where people live, where children learn and play, where there are impacts on the green infrastructure network and where air quality targets are not being met, including:

- *Locating and designing development, and focusing transport investment, so as to reduce reliance on forms of transport that generate air pollution;*
- *Determining planning applications having regard to the most recent development and planning control guidance published jointly by the Institute of Air Quality Management (IAQM) and Environmental Protection UK (EPUK), and the most recent IAQM Guidance on the Assessment of Dust from Demolition and Construction, or relevant successor guidance, including the requirement for developers to submit construction management plans as appropriate;*
- *Requiring applications for developments that could have an adverse impact on air quality to submit relevant air pollution data so that adverse impacts on air quality can be fully assessed*

⁷ Manchester City Council Core Strategy 2012-2027, adopted in July 2012. Available at: https://www.manchester.gov.uk/info/200074/planning/6573/core_strategy_2012-2027

⁸ Greater Manchester Combined Authority Places for Everyone adopted in March 2024. Available at: https://www.manchester.gov.uk/info/500113/city_centre_regeneration/8270/places_for_everyone

and development only permitted where they are acceptable and/or suitable mitigation can be provided;

- Restricting developments that would generate significant point source pollution such as some types of industrial activity and energy generation;
- Significantly expanding the existing commercial network of electric vehicle charging points, both for public and private use, including as part of new developments;
- Implementing the Clean Air Plan and associated measures;
- Facilitating the more sustainable distribution of goods within the urban area, including through accommodating urban consolidation centres and urban distribution centres that use ultra-low emission vehicles, and local delivery facilities to reduce repeat delivery attempts;
- Designing streets to avoid trapping air pollution at ground level, including through the appropriate location and scale of buildings and trees;
- Controlling traffic and parking within and around schools, early years sites and other locations that are particularly sensitive to air quality;
- Promoting actions that help remove pollutants from the air, such as enhancing the green infrastructure network and using innovative building materials that capture air pollutants; and
- Development should be located in areas that maximise the use of sustainable travel modes and be designed to minimise exposure to high levels of air pollution, particularly for vulnerable users.

Policy JP-C8: Transport Requirements of New Developments also states the following with regards to air quality:

“17. Planning applications which are required to be accompanied by a Transport Assessment will need to consider air quality impacts on Holcroft Moss, within the Manchester Mosses Special Area of Conservation (SAC). Any proposals that would result in increased traffic flows on the M62 past Holcroft Moss of more than 100 vehicles per day or 20 Heavy Goods Vehicles (HGVs) per day must devise a scheme-specific range of measures to reduce reliance on cars, reduce trip generation and promote ultra-low emission vehicles and provide a contribution towards restoration measures in accordance with the Holcroft Moss Habitat Mitigation Plan.”

The references made to air quality in Policy JP-S5 and Policy JP-C8 have informed this assessment.

2.2 Relevant Guidance

2.2.1 Air Quality Guidance for Construction Sites

There are a number of regulatory and legislative constraints in place to control pollution from construction and demolition activities. The Building Act 1984 and subsequent Building Regulations 2000 are in place to ensure the safety of people in and around the building during work. Part III of the Environmental Protection Act (EPA) 1990 identifies the emission of dust from construction sites as having the potential to be a statutory nuisance and requires its control under Section 80.

In December 2011, the IAQM published its ‘Guidance on the assessment of dust from demolition and construction’⁹ to assess the impact and the significance of any construction activities on air quality. The guidance was updated in 2024 to incorporate new evidence. The approach adopted in this assessment is based on adopting the methodology published in the 2024 version of the IAQM guidance.

2.2.2 Greater Manchester Air Quality Action Plan 2016

The currently adopted Greater Manchester Air Quality Action Plan 2016¹⁰ sets out a clear and meaningful set of actions to improve air quality in the region. This is achieved through identified key sources, areas which require intervention, and then sets out actions required for different sectors. The plan covers up until 2021, however it is yet to be superseded by an updated version. Many of the targets set out in the plan cover up to the year 2025 and therefore it is considered relevant to this assessment.

⁹ IAQM (2024). Guidance on the assessment of dust from demolition and construction, v2.2. Available at <https://iaqm.co.uk/wp-content/uploads/2013/02/Construction-Dust-Guidance-Jan-2024.pdf>

¹⁰ Greater Manchester Combined Authority Air Quality Action Plan, adopted in 2016. Available at: <https://www.manchester.gov.uk/downloads/file/24676/greater-manchester-air-quality-action-plan-2016-2021>

Within the Greater Manchester Air Quality Action Plan, Action 1.1 states that:

“Greater Manchester councils to adopt the most recent IAQM Guidance on the Assessment of Dust from Demolition and Construction as current best practice to assess and mitigate emissions from construction sites.

- i. Where a key priority area is affected by a proposed scheme, a high level of mitigation control will be requested”*

Within the Greater Manchester Air Quality Action Plan, Action 6.2 (Development Planning Guidance) states that:

“GM local authorities will adopt the most recent IAQM/EPUK guidance for air quality assessment as current best practice, to help ensure that planning applications consider potential local air quality impacts and opportunities to improve air quality are realised.

- i. Where a Key Priority Area is significantly adversely affected by a proposed scheme, a high level of mitigation control will be requested.*
- ii. The IAQM/EPUK guidance will also be used to screen and assess industrial sources, such as boilers or large stationary engines. GM local authorities to recommend mitigation controls in accordance with the most recent guidance and the other actions in this document for new developments that contribute to a deterioration of air quality in Air Quality Management Areas (AQMAs).*

Where an air quality assessment is triggered, it should include a review of monitoring data. Where monitoring is not currently undertaken, it may be requested to inform the application or to confirm the effects.”

2.2.3 Land-Use Planning & Development Control: Planning for Air Quality

Although no formal procedure exists for classifying the magnitude and significance of air quality effects from a new development, the EPUK and IAQM guidance document ‘Land-Use Planning and Development Control: Planning for Air Quality’¹¹ provides a decision-making process which assists with the understanding of air quality impacts and implications as a result of development proposals.

¹¹ <https://www.iaqm.co.uk/text/guidance/air-quality-planning-guidance.pdf>

3 BASELINE AIR QUALITY REVIEW

3.1 Local Air Quality Management

The Council has maintained a thorough annual review and assessment of air quality through their statutory reporting, as part of its obligations in Part IV of the Environment Act 1995 (as amended 2021)⁶.

The most recent LAQM report published by Greater Manchester Combined Authority on behalf of Manchester City Council is the 2024 Air Quality Annual Status Report (ASR) presenting monitoring data for 2023¹². In 2023, the Council undertook passive diffusion tube monitoring of NO₂ at 40 sites (46 including three triplicate sites).

3.2 Review of Air Quality Monitoring

Data from 2023 NO₂ annual mean at monitoring locations nearest to the Site have been used to inform this assessment. Annual mean NO₂ and PM₁₀ data from 2024 had not been released at the time of writing this report.

NO₂ annual mean concentrations recorded at the nearest passive monitoring locations are presented in Table 3.1, and their locations are presented in Figure 3.1. In 2023, the NO₂ concentrations were recorded well below the annual mean objective of 40 µg/m³ at 27 of the 28 monitoring locations closest to the Site.

Table 3.1 - Annual Average NO₂ Monitoring Locations within 5km of the Site

Site ID	Coordinates		Distance from site (km)	NO ₂ Annual Mean Concentration (µg/m³) 2023
	X	Y		
Manchester City Council				
MA36NO	385203	399750	0.7	28
MA99BNO	385400	399245	0.8	31.3
MA103BNO	385431	400653	1	37.9
MA71NO	385161	398290	1.7	30.7
MA88NO	384469	398981	1.7	32.7
MA26NO	383973	398874	2.2	24.5
MA59NO, M60NO, MA61NO	384310	398337	2.2	24.4
MA101BNO	385999	402026	2.2	34.9
MA104BNO	383511	399906	2.4	34.5
MA24ANO	383968	398070	2.7	29.8
MA96BNO	385189	397167	2.8	39.7
MA29ANO	384119	397503	3	49.6
MA78NO	386289	396828	3	26.3
MA82NO, MA83NO, MA84NO	384239	397276	3.1	41.4
MA89ANO	386710	396824	3.1	24.6
MA102BNO	385792	402952	3.1	32.2
MA113BNO	385087	396891	3.1	28.2
MA28NO	387951	397430	3.2	26.9
MA88ANO	386536	396699	3.2	36.1
MA77NO	383576	397489	3.3	31.6
MA86ANO	387150	396808	3.3	28.3
MA87ANO	386992	396569	3.4	25.3
MA100BNO	383605	402293	3.4	30.6
MA112BNO	383987	396734	3.7	19.8
MA97BNO	382886	397215	4	27.4
MA79NO	386875	395861	4.1	23.9
MA98BNO	388460	403313	4.3	27.6
MA73NO	388604	396042	4.7	29.5

¹² Greater Manchester Combined Authority 2023 Annual Status Report. Available at: <https://cleanairgm.com/data-hub/monitoring-reports/>

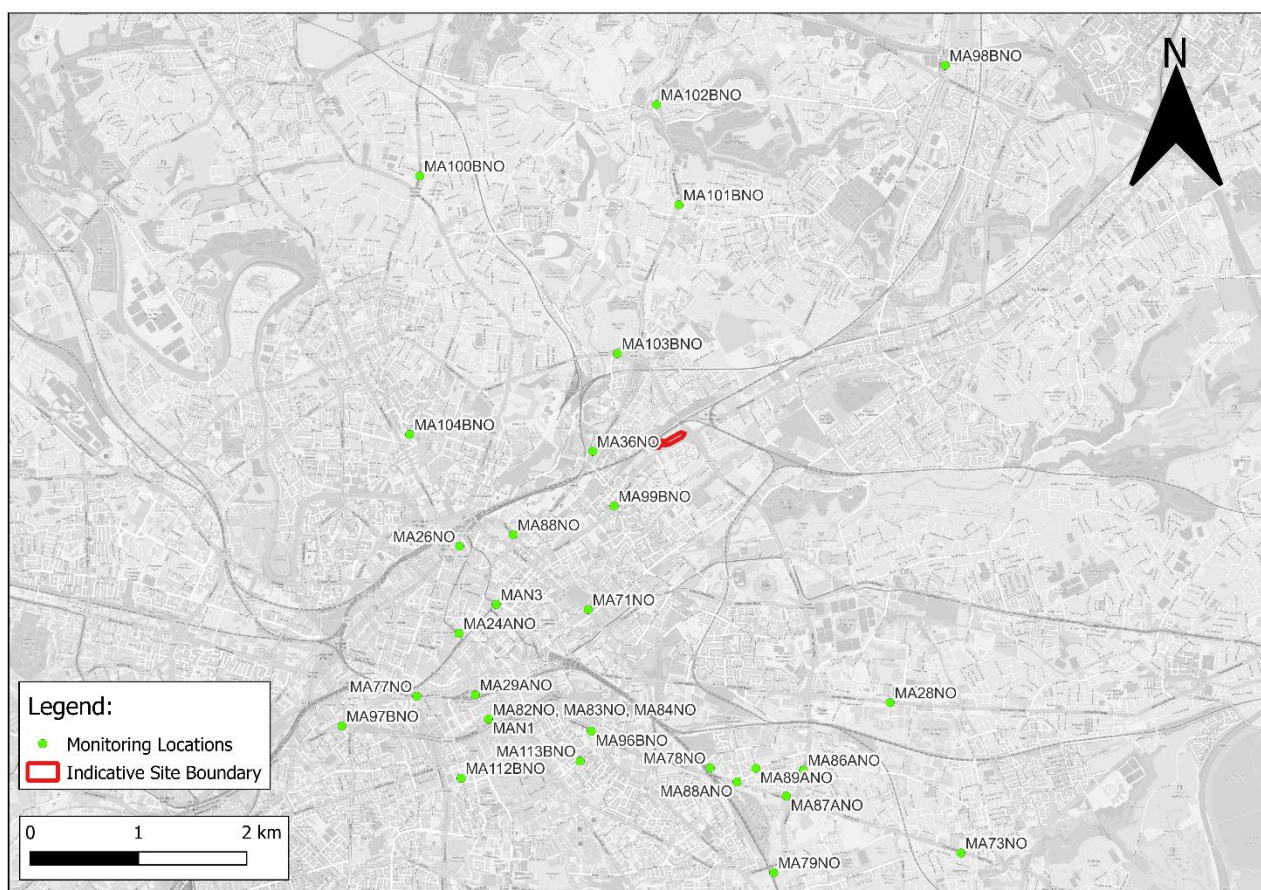
Data for the 2023 PM₁₀ annual mean at the nearest monitoring locations to the Site (Manchester Piccadilly (MAN3) and Manchester Oxford Road (MAN1) – automatic roadside monitoring stations) have been used to inform this assessment and is presented in Table 3.2.

In 2023, the annual mean PM₁₀ concentration recorded at the roadside monitoring location MAN3 was well below the annual mean objective of 40 µg/m³.

Table 3.2 - Annual Average PM₁₀ Monitoring Locations within 5km of the Site

Site ID	Coordinates		Distance from site (km)	PM ₁₀ Annual Mean Concentration (µg/m³) 2023
	X	Y		
Manchester City Council				
MAN3	384311	398337	2.3	15
MAN1	384239	397281	3.1	18

Figure 3.1 – Monitoring Locations Within 5km of Site



Out of the 28 monitoring locations within 5km of the development Site, 27 are measuring well below the annual mean NO₂ objective of 40 µg/m³. Therefore, it is reasonable to expect concentrations at the Site to be below the objective too.

The nearest PM₁₀ monitoring locations, MAN3 and MAN1, in Table 3.2 are approximately 2km and 3km from the Site respectively and are automatic roadside stations, with a reported annual mean below the PM₁₀ objective of 40 µg/m³. These are located on A-Roads, similar to the proposed development Site, therefore it can be assumed that PM₁₀ concentrations at the proposed development site will be similar to those recorded at MAN3 and MAN1.

3.3 Background Concentrations

The UK Government maintain a nationwide model of existing and future background air quality concentrations at a 1 km x 1 km grid square resolution¹³. The data sets include annual average concentration estimates for NO_x, NO₂, PM₁₀ and PM_{2.5}, using a reference year of 2021. The model used is semi-empirical in nature; it uses the national atmospheric emissions inventory (NAEI) emissions to model-predict the concentrations of pollutants at the centroid of each 1 km x 1 km grid square but then calibrates these concentrations in relation to actual monitoring data.

The estimated background concentrations for the baseline year (2025) and the proposed opening year (2028)¹⁴ are outlined in Table 3.3. Background values remain considerably lower than the annual mean AQS objectives for all pollutants for the years 2025 and 2028. There is a decrease in PM₁₀ and PM_{2.5} concentrations between the baseline year and proposed opening year, with a greater decrease seen in NO₂ concentrations between the two years.

Table 3.3 - 2025 and 2028 Background Pollutant Concentrations

Year	Background Concentration (µg/m ³) (Background concentrations taken from grid square; 385500, 399500)		
	NO ₂	PM ₁₀	PM _{2.5}
2025	16.71	13.14	7.72
2028	14.85	12.97	7.55
AQS Objective (annual mean)	40	40	20 / 12^a

^a AQS is 20 µg/m³ in 2025 and 12 µg/m³ in 2028.

¹³ UK AIR Background Mapping Tool. Available at: <https://uk-air.defra.gov.uk/data/lagm-background-home>

¹⁴ The earliest year that any part of the proposed development is anticipated to be occupied. This is a conservative assumption as, generally, air quality is anticipated to improve throughout the UK in the coming decade.

4 ASSESSMENT METHODOLOGY

The approach applied to this assessment has been based on the following

- Qualitative assessment of the impacts from the proposed development's construction phase on air quality through emission of dust and particulates.
- Qualitative assessment of potential operational impacts based on existing baseline and potential changes as a result of the development.

4.1 Construction Effects

The assessment of potential dust/ PM_{10} / $PM_{2.5}$ effects in relation to the development's construction phase has been undertaken qualitatively in accordance with the IAQM guidance⁹. The guidance proposes a method to assess the significance of construction dust impacts by considering the annoyance due to dust soiling, as well as harm to ecological receptors and the risk of health effects due to significant increases to dust/ PM_{10} / $PM_{2.5}$ concentrations.

Construction site activities are divided into four types to reflect their different potential impacts. These activities are:

- Demolition – an activity involved with the removal of any existing structure or structures;
- Earthworks – the processes of soil-stripping, ground-levelling, excavation, and landscaping;
- Construction – an activity involved in the provision of a new structure; and
- Trackout – the transport of dust and dirt from the site onto the public road network. This arises when lorries leave site with dusty materials or transfer dust and dirt onto the road having travelled over muddy ground on-site.

An assessment is required where a sensitive human receptor is located within 250 m from the site boundary and/or within 50 m of the routes used by vehicles on the public highway, up to 250 m from the site entrances. There are approximately 40 residential properties located within 20 m of the site boundary of the proposed development, thus an air quality assessment is required.

An assessment is also required where ecologically sensitive receptors are located within 50 m of the site boundary and/or 50 m of the routes used by vehicles on the public highway, up to 500 m from the site entrances. In accordance with the IAQM methodology, these are defined as legislatively protected areas such as Sites of Special Scientific Interest (SSSI) and Special Areas of Conservation (SAC).

The first step of the detailed assessment is to assess the risk of dust impacts. This is undertaken separately for each of the four activities (demolition, earthworks, construction and trackout) and takes account of:

- The scale and nature of the works, which determines the potential dust emission magnitude as small, medium, or large; and
- The sensitivity of the area to dust impacts, which is defined as low, medium, or high sensitivity.

These two factors are combined to give an estimate of the risk of dust impacts occurring with no mitigation applies. Risks are described in terms of there being a low, medium, or high risk of dust impact; the risk category assigned to the site can be different for each of the four potential activities (demolition, earthworks, construction, and trackout). Where there are low, medium, or high risks of an impact, then site specific mitigation will be required, proportionate to the level of risk.

Based on the threshold criteria and professional judgment, one or more of the groups of activities may be assigned a 'negligible' risk. Such cases could arise, for example, because the scale is very small and there are no receptors near to the activity.

Site-specific mitigation for each of the four potential activities is then determined based on the risk of dust impacts identified. Where a local authority has issued guidance on measures to be adopted at demolition/construction sites, these should also be taken into account. Professional judgment is employed to examine the residual dust effects assuming mitigation to determine whether or not they are significant.

Given the short-term nature of the construction phase and the comparatively low volume of vehicle movements that will likely arise, there is not considered to be any potential for significant air quality effects from development related road traffic NO₂ emissions during the construction phase.

4.2 Operational Effects

The assessment of air quality effects in relation to the development's operational phase has been initially undertaken qualitatively in accordance with the EPUK/IAQM Guidance. The guidance makes reference to the Town and Country Planning (Development Management Procedure) definition of a 'major' development when scoping assessments required for the planning process. provides the criterion which determines whether a development is classified as 'major'.

Consideration of air quality impacts and approaches to reduce impacts from any 'major' development is then recommended. The air quality impacts considered include both the impact of existing sources in the local area on the proposed development and the impacts of the proposed development on the local area.

With regards to changes in air quality or exposure to air pollution, the guidance indicates that each local authority will likely have their own view on the significance of this; these are to be described in relation to whether an air quality objective is predicted to be met, or at risk of not being met. Exceedances of these objectives are considered as significant if not mitigated.

As part of the impact of the proposed development on the local area, a two staged assessment is recommended as per EPUK/IAQM Guidance:

- Stage 1: Determines the need for an air quality assessment and requires any of the criteria under (A) coupled with any of the criteria under (B) in Table 4.1 to proceed to Stage 2.
- Stage 2: Where an assessment is deemed to be required, this may take the form of a simple qualitative assessment or a more detailed dispersion modelling assessment. The level of air quality assessment required is determined by the criteria in Table 4.2.

Table 4.1 – Stage 1 Criteria to Proceed to Stage 2

Criteria to Proceed to Stage 2	
1. If any of the following apply:	
■ 10 or more residential units or a site area of more than 0.5ha;	
■ More than 1,000m ² of floor space for all other uses or a site area greater than 1ha.	
2. Coupled with any of the following:	
■ The development has more than 10 parking spaces;	
■ The development will have a centralised energy facility or other centralised combustion process.	
Note: Consideration should still be given to the potential impacts of neighbouring sources on the site, even if an assessment of impacts of the development on the surrounding area is screened out	

Table 4.2 – Indicative Criteria for Requiring an Air Quality Assessment

The Development Will	Indicative Criteria to Proceed to an Air Quality Assessment
1. Cause a significant change in Light Duty Vehicle (LDV) traffic flows on local roads with relevant receptors	A change of LDV flows of: - more than 100 Annual Average Daily Traffic (AADT) within or adjacent to an AQMA - more than 500 AADT elsewhere.
2. Cause a significant change in Heavy Duty Vehicle (HDV) flows on local roads with relevant receptors.	A Change of HDV flows of: - more than 25 AADT within or adjacent to an AQMA - more than 100 AADT elsewhere
3. Realign roads, i.e. changing the proximity of receptors to traffic lanes.	Where the change is 5m or more and the road is within an AQMA
4. Introduce a new junction or remove an existing junction near to relevant receptors.	Applies to junctions that cause traffic to significantly change vehicle accelerate/decelerate, e.g. traffic lights, or roundabouts.
5. Introduce or change a bus station.	Where bus flows will change by: - more than 25 AADT within or adjacent to an AQMA - more than 100 AADT elsewhere.
6. Have an underground car park with extraction system.	The ventilation extract for the car park will be within 20m of a relevant receptor. Coupled with the car park having more than 100 movements per day (total in and out).
7. Have one or more substantial combustion processes.	Where the combustion unit is: - any centralised plant using biofuel - any combustion plant with single or combined thermal input >300kWh - a standby emergency generator associated with a centralised energy centre (if likely to be tested/used >18 hours a year).
8. Have a combustion process of any size.	Where the pollutants are exhausted from a vent or stack in a location and at a height that may give rise to impacts at receptors through insufficient dispersion. This criterion is intended to address those situations where a new development may be close to other buildings that could be residential and/or which could adversely affect the plume's dispersion by way or their size and/or height.

5 ASSESSMENT RESULTS

5.1 Construction Phase – Dust/PM₁₀ Emissions

This assessment of dust/PM₁₀/PM_{2.5} presents the effects which are likely to be relevant both prior to and following the use of the appropriate mitigation measures on-site. As per the IAQM guidance, the risk associated with the site to potentially generate dust/PM₁₀/PM_{2.5} is identified. Potential unmitigated effects at receptor locations are determined, and site-specific recommendations are then made to ensure residual dust/PM₁₀/PM_{2.5} effects associated with the construction phase are not significant.

The assessment of construction dust will focus on dust arising from the four relevant dust producing construction activities outlined in the IAQM guidance (demolition, earthworks, construction and trackout).

Demolition

Potential sources of impacts associated with demolition activities include dust deposition, resulting the soiling of surfaces; visible dust plumes, which are evidence of dust emissions and elevated PM₁₀, PM_{2.5} concentrations. A number of internal existing units will be demolished therefore the total building volume to be demolished is anticipated to be less than 12,000 m³. The dust emission magnitude is therefore considered to be **Small**.

Earthworks

Potential sources of impacts associated with earthworks/ground preparation activities include fugitive dust/PM₁₀/PM_{2.5} emissions resulting from disturbance of dusty materials by construction plant, the construction materials used, vehicle movements and wind action. The total Site area is approximately 3,400 m² (<18,000 m²) with clay and loam soils. The dust emission magnitude for earthworks is therefore considered to be **Small**.

Construction

Potential sources of impacts associated with construction activities include fugitive dust/PM₁₀/PM_{2.5} emissions resulting from disturbance of dusty materials by construction plant, the construction materials used, vehicle movements and wind action. Activities at the proposed development will comprise the internal construction of new units and an external seating area. The estimated total volume of the proposed development buildings is approximately 22,000 m³ (between 12,000 m³ and 75,000 m³), therefore, the dust emission magnitude for construction is considered to be **Medium**.

Trackout

Dust emissions associated with trackout may occur from the transport of dust and dirt from the construction site onto the public road network, where it may be deposited and then re-suspended by vehicles using the network. The number of predicted outward HDV (i.e. >3.5 tonne) movements in any one day is likely to be <20¹⁵ and the approximate unpaved on-site road length is expected to be <50m. The dust emission magnitude for trackout is therefore considered to be **Small**.

Summary

A summary of the dust emission magnitude for the relevant activities is detailed in Table 5.1.

¹⁵ Estimated based on professional experience.

Table 5.1 - Construction Dust Emission Magnitude

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

Sensitivity of the Area

The proposed development is located alongside an A-Road and adjacent to railway lines, there are no sensitive receptors located directly adjacent to the site boundary within 20 m of the proposed development Site and within 20m of roads along which material may be tracked. The sensitivity of the area with respect to dust soiling effects on people and property resulting from demolition, earthworks, construction, and trackout is therefore **Low**.

The existing maximum 2025 background PM₁₀ concentration is 13.14 µg/m³ with the 2023 annual mean monitored PM₁₀ concentration at nearest roadside station MANS3 reported at 15 µg/m³, both below the lowest threshold (<24 µg/m³) affecting construction dust sensitivity to human health impacts. The applicability of PM₁₀ concentrations below the lowest threshold is relevant as sensitive receptors surrounding the proposed development Site are likely to be exposed to higher concentrations than the background PM₁₀ value during works periods as they are near to local emissions sources (i.e. roads). However, the minor road nature is unlikely to cause baseline PM₁₀ concentrations to be >24 µg/m³ and circa 15 µg/m³ reported at roadside monitoring location MANS3, in the city centre of Manchester. Given the above information regarding the number of receptors within 20 m of the site boundary, the sensitivity of the area with respect to human health impacts in relation to demolition, earthworks, construction and trackout is therefore **Low**.

A summary of the sensitivity of the surrounding area is detailed Table 5.2 below. According to Defra's Magic Maps natural environment mapping tool¹⁶, the nearest ecologically sensitive receptor (Hollinwood Branch Canal (SSSI) is located more than 50 m from the development site and more than 50 m from the nearest road used for trackout. Therefore, the assessment of ecological receptors is not required.

Table 5.2 - Sensitivity of the Surrounding Area

Potential Impact	Sensitivity of the Surrounding Area			
	Demolition	Earthworks	Construction	Trackout
Dust Soiling	Low	Low	Low	Low
Human Health	Low	Low	Low	Low

Risk of Dust Impacts

The risk of dust impacts is defined using Tables 6, 7, 8 and 9 in the IAQM guidance, for demolition, earthworks, construction and trackout respectively. The dust emission magnitude classes in Table 5.1 combined with the sensitivity of the surrounding area classes in Table 5.2, result in the site risk categories as shown in Table 5.3.

Table 5.3 - Summary of Dust Risk

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

Following the construction dust assessment, without mitigation measures in place, the development Site is found to be **Low Risk** in relation to construction and **Negligible Risk** in relation to demolition, earthworks, and

¹⁶ DEFRA Magic Maps Tool. Available at: <https://magic.defra.gov.uk/>

trackout, for Dust Soiling. The Site is found to be **Low Risk** in relation to construction and **Negligible Risk** in relation to demolition, earthworks and trackout, for Human Health.

Providing mitigation measures are implemented, such as those outline in Section 6.1, construction dust impacts are considered to be **Not Significant**.

5.2 Operational Phase

There is a current provision of 275 parking spaces, and the site currently operates well below capacity, as detailed in Table 5.4 below. Information provided by the Transport Consultant indicated that the number of spaces the proposed development would occupy will be 251. Therefore, it is anticipated to be an overall reduction in vehicles on the highway network.

Table 5.4 - Comparison of current and proposed car park use at the Site

	Number of occupied spaces
Current maximum parking demand	275
Proposed maximum parking demand	251
Difference in parking demand	-24

The proposed development will introduce new receptors and has the potential to change existing emissions as a result of changes in vehicle traffic. An evaluation of the proposed development against the EPUK/IAQM criteria is outlined in Table 5.5 below.

Table 5.5 - Evaluation of the Proposed Operational Impacts in Relation to EPUK/IAQM Criteria

Indicative Criteria to Proceed to an Air Quality Assessment	Evaluation of the Potential Operational Impacts of the Proposed Development
A change of LDV* flows of: - more than 100 AADT within or adjacent to an AQMA - more than 500 AADT elsewhere	It is anticipated that the development once operational would generate fewer LDV trips per day (fewer than 100 trips) adjacent to Manchester AQMA. There are expected to be 0 HGV trips per day (fewer than 20)***. Thus, it is not anticipated there will be a significant change in vehicle emissions as a result of the scheme.
A change of HDV** flows of: - more than 25 AADT within or adjacent to an AQMA - more than 100 AADT elsewhere	
Road realignment, where the change is 5 m or more and the road is within an AQMA	No change of road realignment expected.
Introduction of a new junction or the removal of an existing junction near to relevant receptors. This applies to junctions that cause traffic to significantly change vehicle accelerate/ decelerate, e.g. traffic lights or roundabouts	No junction is expected to be introduced.
Introduction or change of a bus station, where bus flows will change by: - more than 25 AADT within or adjacent to an AQMA - more than 100 AADT elsewhere	The introduction or changes to a bus station are not proposed.
Have an underground carpark with extraction system, where the ventilation extract for the car park will be within 20 m of a relevant receptor. Coupled with the car park having more than 100 movements per day (total in and out).	No underground carpark proposed.
Having one or more substantial combustion process, where the combustion unit is: any centralised plant using biofuel	No such plant proposed.

Indicative Criteria to Proceed to an Air Quality Assessment	Evaluation of the Potential Operational Impacts of the Proposed Development
- any combustion plant with single or combined thermal input > 300kWh - a standby emergency generator associated with a centralised energy centre (is likely to be tested/used > 18 hours a year).	
Have a combustion process of any size, where the pollutants are exhausted from a vent or stack in a location and at a height that may give rise to impacts at receptors through insufficient dispersion. This criterion is intended to address those situations where a new development may be close to other buildings that could be residential and/or which could adversely affect the plume's dispersion by way of their size and/or height.	No such plant proposed.
*LDV – Light Duty Vehicle **HDV – Heavy Duty Vehicle *** - LDV and HDV figures provided by the Transport Consultant, Focus Transport Planning.	

As outlined within Table 5.5, none of the indicative criteria to proceed to a detailed air quality assessment are met.

The impacts of additional vehicle movements associated with the proposed development on air quality are considered to be **not significant**.

Given the existing baseline review completed around the assessment site which showed that current and future concentrations are predicted to be below relevant air quality objectives, it is not anticipated that new receptors will be introduced into an area of poor air quality.

6 RECOMMENDED MITIGATION MEASURES

6.1 Short-term Impacts during Construction – Dust / PM₁₀ Emissions

As discussed in Section 5.1, without mitigation measures, construction impacts associated with the proposed development would result in the generation of dust and PM₁₀. The implementation of best practice mitigation measures during the construction phase would ensure that dust impacts remain negligible.

The IAQM guidance outlines a number of site-specific mitigation measures based on the assessed site risk. The measures are grouped into those which are highly recommended and those which are desirable.

As the site is classed as **low risk** the following mitigation measures are highly recommended:

With respect to communications:

- Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.
- Display the head or regional office contact information.

With respect to site management:

- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.
- Make the complaints log available to the local authority when asked.
- Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book.

With respect to monitoring:

- Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked.
- Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.

With respect to preparing and maintaining the site:

- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.
- Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.

With respect to operating vehicle/machinery and sustainable travel:

- Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone and the London NRMM standards, where applicable.
- Ensure all vehicles switch off engines when stationary - no idling vehicles.
- Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.

With respect to operations:

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.
- Use enclosed chutes and 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.

With respect to waste management:

- Avoid bonfires and burning of waste materials.

As the site is classed as low risk¹⁷ for demolition the following mitigation measures are desirable:

With respect to communications:

- Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. The level of detail will depend on the risk, and should include as a minimum the highly recommended measures in this document. The desirable measures should be included as appropriate for the site.

With respect to monitoring:

- Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100m of site boundary, with cleaning to be provided if necessary.

With respect to preparing and maintaining the site:

- Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period.
- Keep site fencing, barriers and scaffolding clean using wet methods.
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.
- Cover, seed or fence stockpiles to prevent wind whipping.

With respect to operating vehicle/machinery and sustainable travel:

- Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads 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).

With respect to operations:

- 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.

As the site is classed as low risk for construction the following mitigation measures are desirable:

- Avoid scabbling (roughening of concrete surfaces) if possible.
- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.

¹⁷ Where levels of risk for dust soiling and human health are different, mitigation associated with the highest level of risk have been recommended.

7 CONCLUSIONS

Bureau Veritas UK Ltd has been commissioned by Plans Drawn (“the Client”) to undertake an air quality assessment in support of a planning application for the internal changes to the ground floor area of the Sheridan Suite, 371 Oldham Road, Miles Platting, Manchester, M40 8PR (“the Site”). The proposals comprise the internal demolition of the existing units and construction of approximately 28 units within the main building for mixed uses, e.g. dining out and shopping. An open plan external seating area will be added to the building exterior.

The assessment of dust and PM₁₀ effects from the construction phase of the proposed development was subject to a qualitative assessment following the IAQM Guidance. With the implementation of site-specific mitigation measures, the assessment carried out has shown that effects from dust emissions during the construction phase would be **Not Significant**.

Background concentration maps and nearby monitoring demonstrate that background and roadside concentrations remain lower than the annual mean AQS objectives for all pollutants for the baseline year of 2025 and the predicted development opening year of 2028.

There is not expected to be a significant change in traffic movements as a result of the development, with fewer than 100 AADT daily movements anticipated, therefore there is not predicted to be any significant effect during the operational phase with regards to Air Quality, and no further mitigation is required.

APPENDIX

Appendix A. Background to Air Quality

Emissions from road traffic contribute significantly to ambient pollutant concentrations in urban areas. The main constituents of vehicle exhaust emissions produced by fuel combustion are carbon dioxide (CO₂) and water vapour (H₂O). However, combustion engines are not 100% efficient and partial combustion of fuel results in emissions of a number of other pollutants, including carbon monoxide (CO), particulate matter (PM), Volatile Organic Compounds (VOCs) and hydrocarbons (HC). For HC, the pollutants of most concern are 1,3 - butadiene (C₄H₆) and benzene (C₆H₆). In addition, some of the nitrogen (N) in the air is oxidised under the high temperature and pressure during combustion; resulting in emissions of oxides of nitrogen (NO_x). NO_x emissions from vehicles predominately consist of nitrogen oxide (NO), but also contain nitrogen dioxide (NO₂). Once emitted, NO can be oxidised in the atmosphere to produce further NO₂.

The quantities of each pollutant emitted depend upon a number of parameters; including the type and quantity of fuel used, the engine size, the vehicle speed, and the type of emissions abatement equipment fitted. Once emitted, these pollutants disperse in the air. Where there is no additional source of emission, pollutant concentrations generally decrease with distance from roads, until concentrations reach those of the background.

This air quality assessment focuses on NO₂ and PM₁₀ (PM of aerodynamic diameter less than 10µm) as these pollutants are least likely to meet their respective Air Quality Strategy (AQS) objectives near roads. This has been confirmed over recent years by the outcome of the Local Air Quality Management (LAQM) regime. The most recent statistics¹⁸ regarding Air Quality Management Areas (AQMA) show that approximately 650 AQMA are declared in the UK. The majority of existing AQMA have been declared in relation to road traffic emissions.

In line with these results, the reports produced by the Council under the LAQM regime have confirmed that road traffic within their administrative area is the main issue in relation to air quality.

An overview of these two pollutants, briefly describing the sources and processes influencing the ambient concentrations, is presented below.

Particulate Matter (PM₁₀)

Particulate matter is a mixture of solid and liquid particles suspended in the air. There are a number of ways in which airborne PM may be categorised. The most widely used categorisation is based on the size of particles such as PM_{2.5}, particles of aerodynamic diameter less than 2.5µm (micrometre = 10⁻⁶ metre), and PM₁₀, particles of aerodynamic diameter less than 10µm. Generically, particulate residing in low altitude air is referred to as Total Suspended Particulate (TSP) and comprises coarse and fine material including dust.

Particulate matter comprises a wide range of materials arising from a variety of sources. Examples of anthropogenic sources are carbon (C) particles from incomplete combustion, bonfire ash, recondensed metallic vapours, and secondary particles (or aerosols) formed by chemical reactions in the atmosphere. As well as being emitted directly from combustion sources, man-made particles can arise from mining, quarrying, demolition, and construction operations, from brake and tyre wear in motor vehicles and from road dust resuspension from moving traffic or strong winds. Natural sources of PM include wind-blown sand and dust, forest fires, sea salt and biological particles such as pollen and fungal spores.

The health impacts from PM depend upon size and chemical composition of the particles. For the purposes of the AQS objectives, PM₁₀ or PM_{2.5} is solely defined on size rather than chemical composition. This enables a uniform method of measurement and comparison. The short and long-term exposure to PM has been associated with increased risk of lung and heart diseases. PM may also carry surface-absorbed carcinogenic compounds. Smaller PM have a greater likelihood of

¹⁸ Statistics from the UK AIR website available at <https://uk-air.defra.gov.uk/aqma/summary> – Figures as of November 2019

penetrating the respiratory tract and reaching the lung to blood interface and causing the above adverse health effects.

In the UK, emissions of PM₁₀ have declined significantly since 1980, and were estimated to be 114kt (kilotonne) in 2010¹⁹. Residential / public electricity and heat production and road transport are the largest sources of PM₁₀ emissions. The road transport sector contributed 22% (25kt) of PM₁₀ emissions in 2010. The main source within road transport is brake and tyre wear.

It is important to note that these estimates only refer to primary emissions, that is, the emissions directly resulting from sources and processes and do not include secondary particles. These secondary particles, which result from the interaction of various gaseous components in the air such as ammonia (NH₃), sulphur dioxide (SO₂) and NO_x, can come from further afield and impact on the air quality in the UK and vice versa.

Similarly to PM₁₀, emissions of PM_{2.5} have declined since 1970, and were estimated to be 67kt in 2010, which makes over 58% of PM₁₀ emissions. In 2010, the road transport sector emitted 28% (18kt) of the total PM_{2.5} emissions in the UK.

Nitrogen Oxides (NO_x)

NO and NO₂, collectively known as NO_x, are produced during the high temperature combustion processes involving the oxidation of N. Initially, NO_x is mainly emitted as NO, which then undergoes further oxidation in the atmosphere, particularly with ozone (O₃), to produce secondary NO₂. Production of secondary NO₂ could also be favoured due to a class of compounds, VOCs, typically present in urban environments, and under certain meteorological conditions, such as hot sunny days and stagnant anti-cyclonic winter conditions.

Of NO_x, it is NO₂ that is associated with health impacts. Exposure to NO₂ can bring about reversible effects on lung function and airway responsiveness. It may also increase reactivity to natural allergens, and exposure to NO₂ puts children at increased risk of respiratory infection and may lead to poorer lung function in later life.

In the UK, emissions of NO_x have decreased by 62% between 1990 and 2010. For 2010, NO_x (as NO₂) emissions were estimated to be 1,106kt. The transport sector remained the largest source of NO_x emissions with road transport contribution 34% to NO_x emissions in 2010.

¹⁹ National Atmospheric Emissions Inventory (NAEI) Summary Emission Estimate Datasets 2010. March 2012

Appendix B. Site Layout Plan

