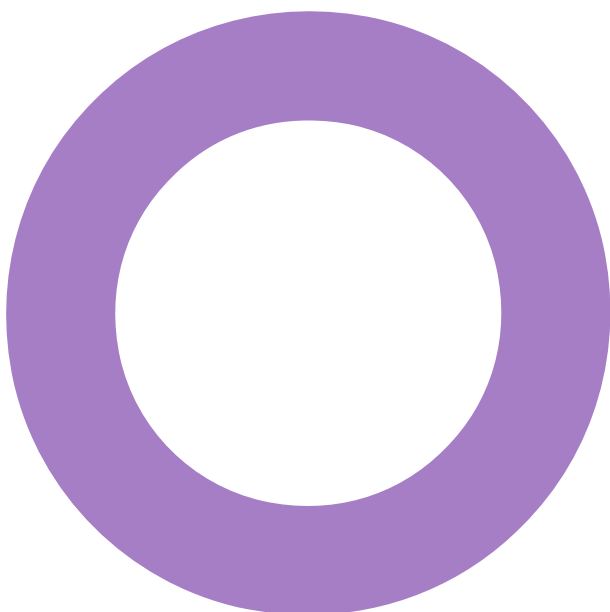


Albert Bridge House. Manchester. Oval Properties Limited.

AIR QUALITY
AIR QUALITY ASSESSMENT

REVISION 01 – 30 APRIL 2025



Audit sheet.

Rev.	Date	Description of change / purpose of issue	Prepared	Reviewed	Authorised
00	10/04/2025	First Draft	AJ	OP	AD
01	30/04/2025	First Issue	AJ	OP	OP

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Contents.

Audit sheet.	2
Contents.	3
Executive summary.	5
1. Introduction.	6
1.1 Proposed development.	6
1.2 Application site description and location.	6
1.3 Scope of assessment.	7
2. Legislation, policy and guidance documents.	8
2.1 Legislation.	8
2.2 Policy.	8
2.3 Guidance.	8
2.4 Local policy and guidance.	8
2.5 Air quality objectives.	9
3. Methodology of assessment.	10
3.1 Existing air quality in the study area.	10
3.2 Construction phase impacts.	10
3.3 Operational phase impacts.	11
3.4 Assessment of significance.	11
4. Baseline environment.	13
4.1 Local air quality management review and assessment.	13
4.2 Local air quality monitoring.	13
4.3 Industrial pollution.	16
4.4 Defra predicted concentrations.	16
4.5 Summary of background data.	16
5. Construction phase assessment.	18
5.1 Construction phase dust assessment.	18
5.2 Construction phase – vehicular pollutants.	21
5.3 Construction phase – non-road mobile machinery.	21
6. Operational phase assessment.	22
6.1 Road traffic emissions screening assessment.	22
6.2 Site suitability assessment.	22
7. Mitigation.	25

7.1 Construction phase.	25
7.2 Operational phase.	25
8. Summary and conclusions.	26
9. Glossary of terms.	27
References.	28
Appendix 1 – Legislation, policy and guidance	29
Appendix 2 - Mitigation measures for construction phase.	31
Appendix 3 - Professional experience.	34

Executive summary.

Hoare Lea have been commissioned by Oval Properties Limited to undertake an Air Quality Assessment to support the planning application for the proposed mixed-use development at Albert Bridge House, Bridge Street, Manchester M3 5AH (the 'Application Site').

The proposals comprise the demolition of the existing building complex and the construction of a mixed use development consisting of an office building (Use Class E(g)) of up to 18 stories with ground floor commercial leisure, food and drink uses (Use Class E (a), (b), (c)); and two residential buildings of up to 37 and 49 storeys respectively, cycle parking, landscaping and public realm, servicing and access arrangements, and other associated works (the 'Proposed Development').

The baseline assessment has shown that the Application Site is located within the Manchester Air Quality Management Area (AQMA). Monitoring data in the vicinity of the Application Site indicates that the annual mean nitrogen dioxide (NO₂) Air Quality Objective (AQO) was exceeded at one monitoring location within 1 km in 2023, the most recent year of representative data available, however this is not considered to be representative of air quality conditions at the Application Site. No other exceedances of the annual mean or 1-hour mean NO₂ AQOs; the annual mean or 24-hour mean particulate matter (PM₁₀ & PM_{2.5}) AQOs were recorded within 1 km of the Application Site in 2023. The Defra predicted background concentrations in the vicinity of the Application Site indicate no exceedances of the relevant AQOs for all pollutants in all years presented. There are no industrial or waste management sources anticipated to impact the Application Site in terms of air quality.

The impacts of demolition and construction work on dust soiling and ambient fine particulate matter concentrations have been assessed and appropriate mitigation measures have been recommended. Provided these mitigation measures are implemented and included within a dust management plan, for example through a planning condition, the residual impacts from the construction phase are considered to be not significant.

The traffic generated by the Proposed Development has been screened against the criteria set-out in the Environmental Protection United Kingdom (EPUK) and Institute of Air Quality Management (IAQM) planning guidance to determine the need for a detailed assessment. This screening assessment has shown that the potential impact of additional road traffic on local air quality is considered insignificant and a detailed assessment is not required.

The proposed energy strategy is to be all electric, utilising zero emissions technologies in the form of Air Source Heat Pumps (ASHP) with generators for life-safety purposes only. Each of the three blocks will have an independent life-safety generator exhausting at roof level in line with best practice. As no combustion sources are proposed for the primary energy supply, no local air quality impacts are anticipated and a detailed assessment of impacts of combustion emissions from the energy plant has been screened out of this assessment.

A qualitative Site Suitability Assessment has shown that pollutant concentrations are in compliance with the relevant AQOs and therefore, the Application Site is considered suitable for residential, office and commercial use without mitigation.

Based on the assessment results, the Application Site is considered suitable for the Proposed Development without the inclusion of mitigation, air quality should not be considered as a constraint to the planning consent and the Proposed Development conforms to the principles of the National Planning Policy Framework Plan, the Manchester Core Strategy and the Manchester Air Quality & Planning Technical Guidance.

1. Introduction.

Hoare Lea have been commissioned by Oval Properties Limited to undertake an Air Quality Assessment to support the planning application for the proposed mixed-use development at Albert Bridge House, Bridge Street, Manchester M3 5AH (the 'Application Site').

1.1 Proposed development.

The proposals comprise the demolition of the existing building complex and the construction of a mixed use development consisting of an office building (Use Class E(g)) of up to 18 stories with ground floor commercial leisure, food and drink uses (Use Class E (a), (b), (c)); and two residential buildings of up to 37 and 49 storeys respectively, cycle parking, landscaping and public realm, servicing and access arrangements, and other associated works (the 'Proposed Development').

The proposed energy strategy is to be all electric, utilising zero emissions technologies in the form of Air Source Heat Pumps (ASHP) with generators for life-safety purposes only. Each of the three blocks will have an independent life-safety generator exhausting at roof level in line with best practice. As no combustion sources are proposed for the primary energy supply, no local air quality impacts are anticipated and a detailed assessment of impacts of combustion emissions from the energy plant has been screened out of this assessment.

The proposed ventilation strategy will utilise on-floor Mechanical Ventilation with Heat Recovery (MVHR) in each individual apartment to provide air supply and extraction, along with heat recovery. Central Air Handling Units (AHU) located at roof level will serve the office space.

1.2 Application site description and location.

The Application Site is located within Manchester City Council (MCC) administrative area at the approximate National Grid Reference (NGR): X 383430 Y 398380.

The Application Site is currently occupied by Albert Bridge House and two car parks. Albert Bridge House includes three parts, a 17-storey building, flanked by a five and two storey building. Albert Bridge House is currently vacant. The River Irwell lies immediately to the north of the Application Site with Bridge Street to the south and St Mary's Parsonage to the east. Trinity Bridge lies in close proximity to the north-eastern corner of the Application Site and crosses the River Irwell.

Figure 1 illustrates the location of the Application Site.

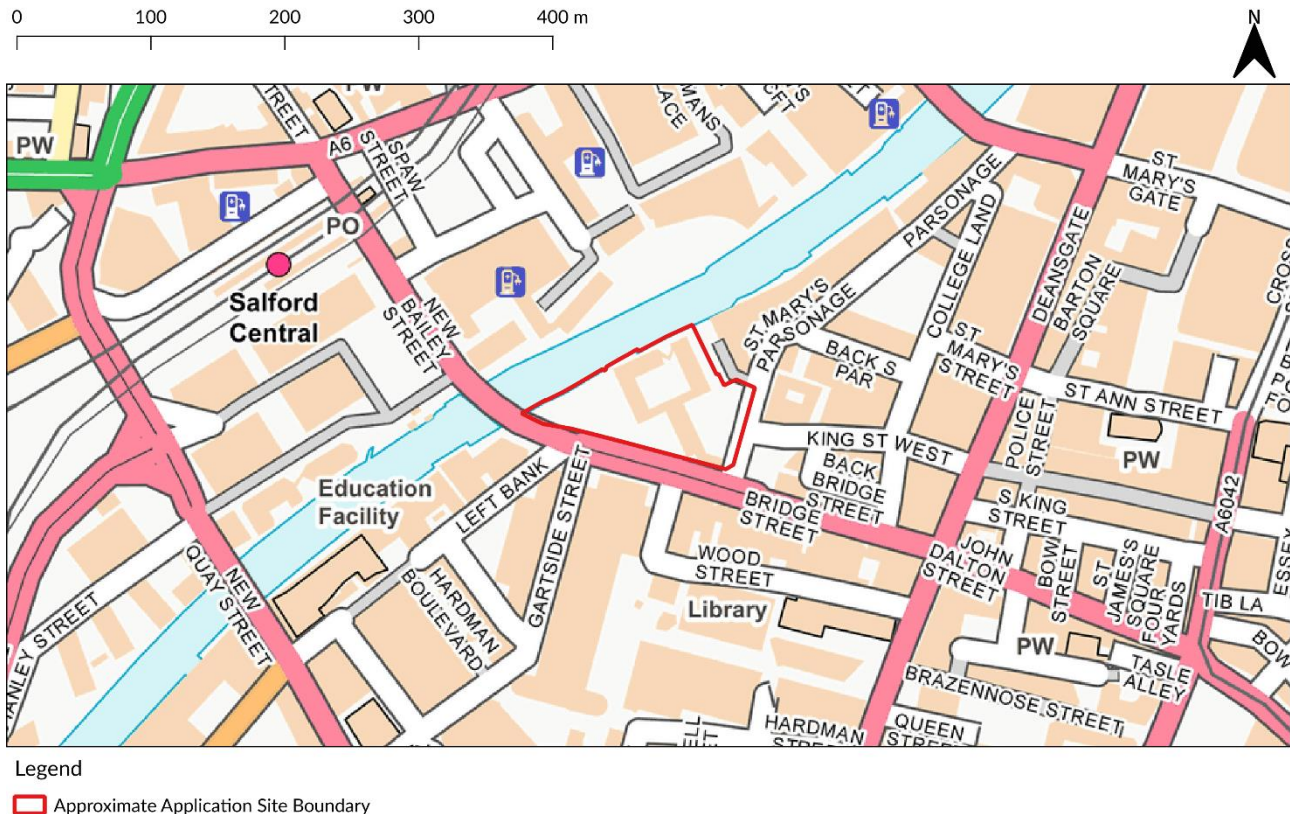


Figure 1: Location of the Application Site. Contains OS Data © Crown Copyright and Database rights 2024.

1.3 Scope of assessment.

The scope of the assessment has been developed in line with the relevant guidance, set out in Section 2 of this report.

A summary of the scope of the assessment includes:

- Review of National and Local Policy;
- Determination of baseline scenario, using monitoring data from the Greater Manchester Combined Authority (GMCA) and Department for Environmental, Food and Rural Affairs (Defra) predicted background concentrations;
- Assessment of potential air quality impacts during the construction phase;
- Assessment of potential air quality impacts during the operational phase;
- An assessment of the suitability of the Application Site for its proposed use; and
- Identification of required mitigation measures.

2. Legislation, policy and guidance documents.

2.1 Legislation.

The following legislation has informed the Air Quality Assessment and is detailed further in the Appendix 1:

- The Environment Act ^{1,2}
- The Air Quality Strategy³
- The Air Quality (England) Regulations 2000⁴
- The Air Quality (England) (Amendment) Regulations 2002⁵
- The Air Quality Standards Regulations 2010⁶
- The Air Quality Standards (Amendment) Regulations 2016⁷.
- The Environmental Improvement Plan⁸
- Part III of the Environmental Protection Act (EPA) 1990 (as amended)⁹
- The Clean Air Strategy (CAS)¹⁰
- Part F of the Building Regulations (2021)¹¹

2.2 Policy.

The following policy has informed the Air Quality Assessment and is detailed further in the Appendix 1:

- The National Planning Policy Framework (NPPF) 2024¹²
- The Planning Practice Guidance (PPG)¹³.

2.3 Guidance.

The following guidance has informed the Air Quality Assessment and is detailed further in the Appendix 1:

- Defra's Local Air Quality Management Technical Guidance¹⁴. This guidance will be referred to as 'LAQM.TG(22)' throughout this report.
- The Environmental Protection UK (EPUK) and the Institute of Air Quality Management's (IAQM) Air Quality Guidance for Planning¹⁵. This guidance will be referred to as 'EPUK and IAQM planning guidance' throughout this report.
- The IAQM 'Guidance on the assessment of dust from demolition and construction'¹⁶. This will be referred to as IAQM construction guidance throughout this report.

2.4 Local policy and guidance.

In addition to the documents outlined in the previous sections above, contains a summary of the local Policy and Guidance which are relevant to this assessment.

Table 1: Local policy and guidance documents.

Local policy and guidance document	Summary notes
Manchester's Local Development Framework Core Strategy ¹⁷	Manchester's Local Development Framework forms the policy basis on which development decisions are made. The key document in this framework is the Core Strategy, adopted in 2012 to cover the period up to 2027, which sets out the planning policies to achieve the council's strategic objectives. This Core Strategy is accompanied by an addendum¹⁸ in 2024 which provides updates to key policies. A review of the Core Strategy and addendum has identified the following policies relevant to this assessment: – EN16 Air Quality – CC5 Transport – EN7 Energy Infrastructure Opportunities – DM1 Development Management

Local policy and guidance document	Summary notes
Greater Manchester Low Emission Strategy ¹⁹	The GMCA adopted the Greater Manchester Low Emission Strategy in 2016 to present a long-term approach to carbon emissions and air quality in the period up to 2040. The strategy aims to contribute to reducing Greater Manchester's carbon footprint and reducing air pollution as a contributor to ill-health.
Manchester Air Quality & Planning Technical Guidance ²⁰	MCC published technical guidance for air quality in 2022 to inform applicants, developers and air quality consultants of the requirements for air quality set out in the Core Strategy and associated plans. It outlines the relevant local policies, particularly regarding the City's current Air Quality Management Area (AQMA). This guidance also sets out the council's ambition to reduce PM _{2.5} to below the 2005 World Health Organisation (WHO) guideline (annual mean of 10 µg/m ³) by 2030 and provided best practice recommendations for electric vehicle infrastructure.

2.5 Air quality objectives.

The AQOs for Nitrogen Dioxide (NO₂) and particulate matter (PM₁₀ and PM_{2.5}) are set out in Table 2. The AQOs for NO₂, PM₁₀ and PM_{2.5} were to have been achieved by 2005, 2004 and 2020 respectively and continue to apply in all future years thereafter.

The AQOs apply at locations where members of the public are likely to be regularly present and exposed over the averaging period of the AQO. Examples of where the annual mean AQOs should apply are provided in the LAQM.TG(22), and include building façades of residential properties, schools, hospitals. The annual mean AQOs are not relevant for the building façades of offices or other places of work where members of the public do not have regular access, kerbsides or gardens.

The 24-hour mean AQO for PM₁₀ is considered to apply at the same locations as the annual mean AQO, as well as in gardens of residential properties and at hotels.

The 1-hour mean AQO for NO₂ also applies wherever members of the public might regularly spend 1-hour or more, including outdoor eating locations, pavements of busy shopping streets, car parks and bus stations which are not fully enclosed. The 1-hour mean AQO does not apply at kerbside sites where the public do not have regular access.

Table 2: Air Quality Objectives for NO₂, PM₁₀ and PM_{2.5}.

Pollutant	Time Period	Objective
Nitrogen Dioxide (NO ₂)	1-hour Mean	200 µg/m ³ Not to be exceeded more than 18 times a year
	Annual Mean	40 µg/m ³
Fine Particles (PM ₁₀)	24-hour Mean	50 µg/m ³ Not to be exceeded more than 35 times a year
	Annual Mean	40 µg/m ³
Fine Particles (PM _{2.5}) *	Annual Mean	20 µg/m ³
Notes: Measured gravimetrically *The time period in LAQM.TG(22) states "Work towards reducing emissions/concentrations of fine particulate matter (PM _{2.5})"		

3. Methodology of assessment.

3.1 Existing air quality in the study area.

A baseline air quality review was undertaken to determine the existing air quality in the vicinity of the Application Site.

This desk-top study was undertaken using the following sources:

- Air quality data, including a review of the GMCA air quality reports and local monitoring data;
- The UK Pollutant Release and Transfer Register²¹;
- Background pollution maps from Defra's Local Air Quality Management (LAQM) website²²;
- Pollution Inventory from the Environment Agency²³
- The UK Ambient Air Quality Interactive Map²⁴; and
- Ordnance Survey data and Aerial photography from Google Maps.

3.2 Construction phase impacts.

3.2.1 Construction dust assessment

The assessment of construction dust impacts has been undertaken in line with the methodology outlined in the IAQM construction guidance. Activities on the proposed construction site have been divided into four types to reflect their different potential impacts. These are:

- Demolition;
- Earthworks;
- Construction; and
- Trackout.

The risk of dust emissions has been assessed for each activity with respect to:

- Potential loss of amenity due to dust soiling;
- The risk of health effects due to a significant increase in exposure to PM₁₀; and
- The risk of ecological impacts due to a significant increase in exposure to PM₁₀.

The first stage of the assessment involves screening to determine whether there are any sensitive receptors within the threshold distances defined by the IAQM construction guidance. A detailed assessment of the impact of dust from construction sites will be required where:

- A 'human receptor' is located within 250 m of the boundary of the Application Site or within 50 m of the route(s) used by construction vehicles on the public highway, up to 250 m from the Application Site entrance;
- An 'ecological receptor' is located within 50 m of the boundary of the Application Site or within 50 m of the route(s) used by construction vehicles on the public highway, up to 250 m from the Application Site entrance.

The magnitude of dust emission for each activity is determined on the basis of the guidance, indicative thresholds, information available relating to the project and expert judgement. The risk of dust effects arising is based upon the relationship between the dust emission magnitude and the sensitivity of the area. The risk of impact is then used to determine the mitigation requirements.

Descriptors for magnitude of impact and impact significance used in this assessment of construction phase dust are given in the guidance available online¹⁶.

3.2.2 Construction emissions assessment

3.2.2.1 Construction traffic emissions screening

The screening assessment has been undertaken with reference to the following EPUK and IAQM planning guidance indicative criteria:

- a change of Light Duty Vehicle (LDV) flows of more than 100 AADT (within an AQMA); and/or
- a change of Heavy Duty Vehicle (HDV) flows of more than 25 AADT (within an AQMA).

3.2.2.2 NRMM emissions screening

Non-Road Mobile Machinery (NRMM) refers to mobile machines, transportable industrial equipment or vehicles which are fitted with an internal combustion engine and not intended for transporting goods or passengers on roads. NRMM emissions have been screened following IAQM construction guidance.

3.3 Operational phase impacts.

3.3.1 Road traffic emissions assessment

The screening assessment has been undertaken following the EPUK and IAQM planning guidance indicative criteria:

- a change of LDV flows of more than 100 AADT (within an AQMA); and/or
- a change of HDV flows of more than 25 AADT (within an AQMA).

Where these criteria are exceeded, a detailed assessment is required, although the guidance advises that “*the criteria provided are precautionary and should be treated as indicative*”, and “*it may be appropriate to amend them on the basis of professional judgement*”.

Where impacts can be screened out there is no need to progress to a more detailed assessment.

3.3.2 Site suitability assessment

A qualitative site suitability assessment has been undertaken to consider the exposure of future occupants of the Proposed Development to existing air quality.

The assessment of site suitability has been assessed qualitatively using monitoring data from GMCA in combination with Defra predicted background concentrations. For the residential areas of the Proposed Development, the annual mean NO₂, PM₁₀ and PM_{2.5} AQOs, along with the 1-hour NO₂ and 24-hour mean PM₁₀ AQOs will be applicable. For the office and commercial areas of the Proposed Development, only the 1-hour mean NO₂ AQO is applicable. Additionally, though not for planning, the Building Regulations Part F states that the annual mean NO₂ AQO also applies at non-dwelling sites and as such, the annual mean NO₂ will also be considered.

Furthermore, in line with the MCC Air Quality & Planning Technical Guidance²⁰, the annual mean PM_{2.5} WHO Guideline will also be considered for the Application Site.

3.4 Assessment of significance.

3.4.1 Construction dust

The IAQM construction guidance states that the primary aim of the construction phase risk assessment is to identify site specific mitigation that, once implemented, should ensure that there will be no significant effect. Therefore, the assessment has been used to determine an appropriate level of mitigation for the construction phase.

The determination of which mitigation measures are recommended include elements of professional judgement and the professional experience of the consultants preparing this report is set out in Appendix 3.

3.4.2 Operational impacts

The EPUK and IAQM planning guidance has been used to assess the potential for significant impacts as a result of vehicle emissions from traffic associated with the Proposed Development. The focus of the guidance is to assess traffic emission impacts and advises on how to describe the air quality impacts and their significance.

3.4.3 Site suitability assessment

To determine the significance of predicted air quality impacts based upon a Site Suitability Assessment, the EPUK and IAQM planning guidance states: “*Where the air quality is such that an air quality objective at the building façade is not met, the effect on residents or occupants will be judged as significant, unless provision is made to reduce their exposure by some means.*”

4. Baseline environment.

This section sets out the available information on air quality in the vicinity of the Application Site.

4.1 Local air quality management review and assessment.

The Application Site is located within the Manchester AQMA which was declared in 2016 for exceedances of the annual mean NO₂ AQO. This AQMA covers the 10 districts of Greater Manchester, including arterial routes, district centre and the airport.

According to the most recent GMCA air quality annual status report (ASR) (2024)²⁵, air quality in the area has shown improving trends since monitoring began in 2015. The main contributors to air pollution in Manchester are considered to be combustion transport, industrial pollution and emissions from the airport.

It should be noted that the pollutant concentrations recorded in 2020 and 2021 from the most recent GMCA ASR are lower than previous years as a direct result of reduced traffic levels during the COVID-19 pandemic. As such the pollutant concentrations recorded in 2020 and 2021 are not considered to be representative of 'normal' air quality conditions. However, 2023 monitoring data has been presented and discussed as this is the latest year of available representative monitoring data.

4.2 Local air quality monitoring.

GMCA operated 24 automatic monitoring stations in 2023. The closest automatic monitoring station to the Site is MAN09, a roadside location approximately 80 m east of the Site on Bridge Street, which measures concentrations of NO₂ only. Automatic monitoring location, MAN3, is located 820 m east of the Site and monitors concentrations of NO₂, PM₁₀ and PM_{2.5}.

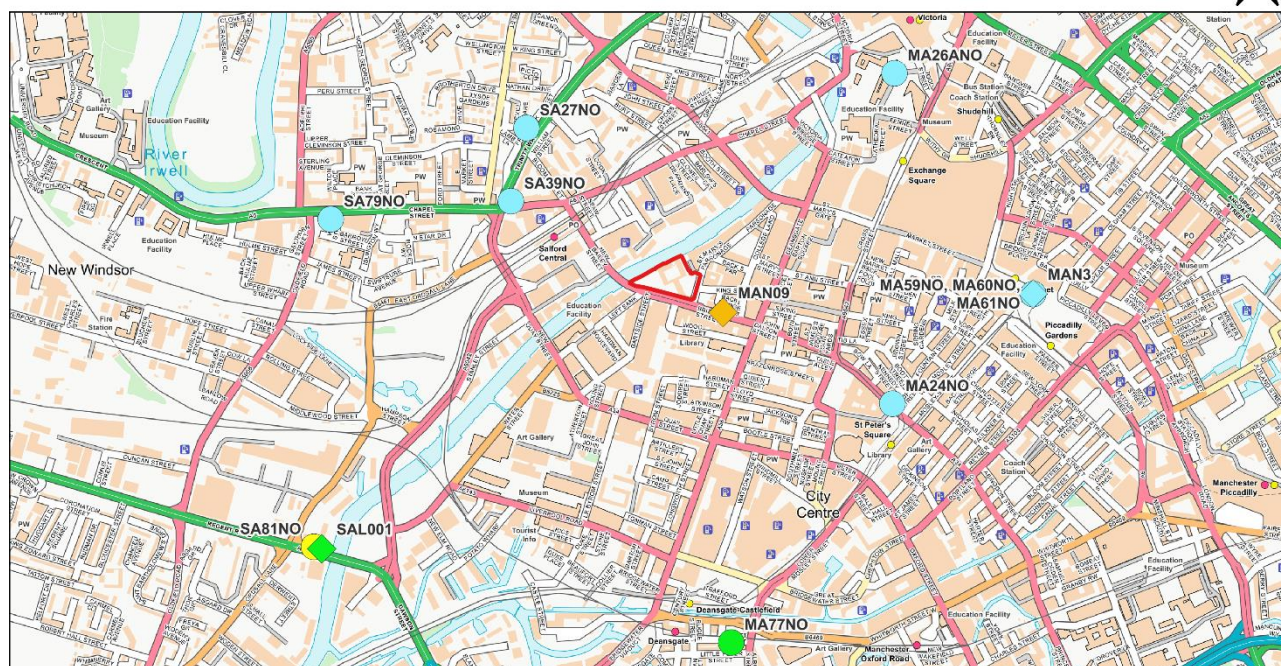
Recent monitoring data for the automatic monitoring stations is detailed in Table 3 and a visual representation of the locations of the automatic monitoring stations is shown in Figure 2.

Table 3: Automatic monitoring locations.

Monitoring site and distance (m) from site boundary (approx.)	Objective	2019	2020	2021	2022	2023
NO ₂						
MAN09 – Manchester Bridge Street, 80 m	Annual mean (µg/m ³)	-	-	-	-	54
	Number of hours with concentrations >200 µg/m ³	-	-	-	-	10
MAN3 – Manchester Piccadilly, 820 m	Annual mean (µg/m ³)	36	27	30	29	27
	Number of hours with concentrations >200 µg/m ³	0	0	0	0	0
SAL001 – Salford Regent Road, 995 m	Annual mean (µg/m ³)	-	-	-	-	32
	Number of hours with concentrations >200 µg/m ³	-	-	-	-	0

Monitoring site and distance (m) from site boundary (approx.)	Objective	2019	2020	2021	2022	2023
PM₁₀						
MAN3 – Manchester Piccadilly, 820 m	Annual mean ($\mu\text{g}/\text{m}^3$)	20	15	15	17	15
	Number of days with concentrations > 50 $\mu\text{g}/\text{m}^3$	7	1	2	4	1
PM_{2.5}						
MAN3 – Manchester Piccadilly, 820 m	Annual mean ($\mu\text{g}/\text{m}^3$)	12	8	9	10	9
Notes: Concentrations in bold indicate an exceedance of the relevant AQO '-' = no data						

0 250 500 750 1,000 m



Legend

- Approximate Application Site Boundary
- Automatic Monitoring Location
- Passive Diffusion Tube Monitoring Location
- Monitored 2023 Annual Mean NO₂ Conc. ($\mu\text{g}/\text{m}^3$)
- 0 - 10
- 10 - 20
- 20 - 30
- 30 - 40
- 40 - 50
- 50 - 60
- 60 - 99

Figure 2: Monitoring Locations within the vicinity of the Application Site. Contains OS Data © Crown Copyright and Database rights 2024.

The automatic monitoring results indicate that the annual mean NO₂ AQO was exceeded at the closest automatic monitoring location to the Application Site, MAN09, in 2023. Although this is the closest monitoring location to the Application Site, the GMCA ASR states that pollutant concentrations at this location are affected by vehicles idling whilst illegally parked adjacent to the monitor. This impact is anticipated to be localised at the

automatic monitoring location and unlikely to occur at the boundary of the Application Site. As such, results from this monitoring location are not considered to be representative of air quality conditions at the Application Site.

The annual mean NO₂ AQO was not exceeded at MAN3 or SAL001. There were no exceedances of the 1-hour mean NO₂, annual mean PM₁₀, 24-hour mean PM₁₀ or annual mean PM_{2.5} AQOs monitored between 2019 and 2023 in the vicinity of the Site. Furthermore, the PM_{2.5} WHO guideline was not exceeded at MAN3 in 2023.

In addition, GMCA operated 356 passive diffusion tube locations to monitor NO₂ concentrations across the city in 2023. A review of the most recent monitoring data available indicated that there are eight passive diffusion tube monitoring locations within the vicinity of the Application Site. Table 4 details the monitoring results for all passive diffusion tube monitoring locations for the most recent years available and the passive diffusion tube monitoring locations are illustrated in Figure 2.

Table 4: Passive diffusion tube monitoring results.

Site ID	Site Type	Distance (m) from site (approx.)	Annual Mean NO ₂ Concentration (µg/m ³)				
			2019	2020	2021	2022	2023
SA39NO	Roadside	350	42	30	33	35	28
SA27NO	Roadside	450	37	27	29	27	25
MA24NO	Kerbside	545	41	27	32	32	30
MA26ANO	Urban Background	680	33	23	26	28	25
SA79NO	Roadside	740	41	27	30	31	30
MA59NO, MA60NO, MA61NO	Urban Background	810	32	22	25	25	24
MA77NO	Urban Background	840	44	27	31	33	32
SA81NO	Roadside	995	46	35	42	44	41

Notes:

Concentrations in **bold** indicate an exceedance of the relevant AQO.

Likely exceedance of the NO₂ short term AQO of 200 µg/m³ over the permitted 18 hours per year are shown in **bold** and underlined.

As shown in Table 4, exceedances of the annual mean NO₂ AQO have been recorded at passive diffusion tube monitoring locations within the vicinity of the Application Site between 2019 and 2023. The closest passive diffusion tube monitoring location to the Application Site, SA39NO, exceeded the annual mean AQO in 2019, but did not exceed the annual mean NO₂ AQO in the most recent year of representative monitoring data available, 2023. Diffusion tube SA81NO recorded an exceedance of the annual mean NO₂ AQO in 2023, however this monitoring location is co-located with automatic monitor SAL001, which did not record an exceedance of the annual mean NO₂ in 2023.

Furthermore, as outlined in LAQM.TG(22), an annual mean NO₂ concentration of 60 µg/m³ or above is often used to indicate a possible exceedance of the 1-hour mean NO₂ AQO. Table 4 indicates that all monitored NO₂ concentrations at passive diffusion tube monitoring locations were below 60 µg/m³, further indicating compliance with the 1-hour mean NO₂ AQO in the vicinity of the Application Site.

4.3 Industrial pollution.

A desk-based review of potential industrial sources using the UK Pollutant Release and Transfer Register and the Pollution Inventory from the Environment Agency identified three potential industrial or waste management sources of air pollution within 2 km of the Application Site that may affect the Application Site with regard to air quality.

Table 5: Industrial/Waste Management Sources of Air Pollution within 2 km of the Application Site from 2020 onwards.

Source Name	Distance from the Application Site (km)	Source Type	Air Pollutant Release
Manchester Heat Network Tradeco Limited	0.7	Medium Combustion Plant	Controlled by permit (EPR/JP3700BU)
EMR Salford	1.5	Hazardous waste disposal	Controlled by permit (EP3198CN)
Vodafone Limited	1.9	Medium Combustion Plant	Controlled by permit (EPR/JP3824SH)

As presented in Table 5, all industrial and waste management sources of air pollution within 2 km of the Application Site are controlled by environmental permits. As such, they are not anticipated to have a significant impact on air quality at the Application Site.

4.4 Defra predicted concentrations.

The background concentrations have been obtained from the national maps published by Defra²². These estimated concentrations are produced on a 1 km by 1 km grid basis for the whole of the UK. The Application Site falls into grid square X 383500 Y 398500 and the predicted concentrations for this grid square for NO₂, PM₁₀ and PM_{2.5} are provided in Table 6 for 2023, the most recent year with available monitoring data and for 2025, the current year.

Table 6: Predicted background concentrations for grid square X 383500 Y 398500.

Year	Predicted Background Concentration (µg/m ³)		
	NO ₂	PM ₁₀	PM _{2.5}
2023	22.3	14.0	8.0
2025	20.9	13.9	7.9

As shown in Table 6, background concentrations are well below the relevant AQOs for all pollutants. Furthermore, PM_{2.5} concentrations are below the WHO 2005 guideline for both years presented.

4.5 Summary of background data.

The Application Site is located within the Manchester AQMA.

Monitoring data in the vicinity of the Application Site indicates that the annual mean NO₂ AQO was exceeded in the vicinity, however this is not considered to be representative of air quality conditions at the Application Site. No other exceedances of the annual mean or 1-hour mean NO₂ AQOs; the annual mean or 24-hour mean PM₁₀ AQOs; or the annual mean PM_{2.5} AQO or WHO guideline have been recorded in the vicinity of the Application Site.

The Defra predicted background concentrations in the vicinity of the Application Site indicate no exceedances of the relevant AQOs for all pollutants in all years presented.

There are no industrial or waste management sources anticipated to impact the Application Site in terms of air quality.

5. Construction phase assessment.

The potential for air quality impacts during the construction of the Proposed Development are assessed in this section.

5.1 Construction phase dust assessment.

The risk of dust impacts is based on the potential dust emissions magnitude and the sensitivity of the area. These two factors are then combined to determine the risk of dust impacts with no mitigation applied. In the absence of any site-specific information, a higher risk category has been applied to represent a worst-case scenario.

5.1.1 Assessment screening

There are 'human receptors' within 250 m of the Application Site but no designated habitat sites within 50 m of the Application Site boundary or within 50 m of the route(s) used by construction vehicles on the public highway, up to 250 m from the Application Site entrance.

The closest ecological receptor to the Application Site is Clayton Vale, classified as a local nature reserve, located approximately 4 km to the east.

Therefore, an assessment of construction dust at human receptors is required, but an assessment of construction at ecological receptors can be screened out from this assessment.

5.1.2 Potential dust emission magnitude

The potential magnitude of dust emissions from demolition, earthworks, construction and trackout have been assessed, as identified in Table 7.

Table 7: Predicted magnitude of dust emissions

Activity	Magnitude	Justification
Demolition	Large	Demolition of the existing building on the Application Site is expected to take place at heights greater than 12 m above ground. The volume of the demolition is anticipated to exceed 75,000 m ³ and include potentially dusty material such as concrete. As such, in line with the IAQM guidance, the magnitude of dust emissions from demolition is expected to be large.
Earthworks	Small	Earthworks are expected to take place across an area smaller than 18,000 m ³ . The soil type is sandy and loamy ²⁶ with a moderate potential for dust emissions. As such, in line with the IAQM guidance, the magnitude of dust emissions from earthworks is expected to be small.
Construction	Large	The volume of construction associated with the Proposed Development is estimated to be greater than 75,000 m ³ . This is expected to involve potentially dusty materials such as concrete. As such, in line with the IAQM guidance, the magnitude of dust emissions from construction is expected to be large.
Trackout	Medium	The exact number of outward vehicle movements associated with the construction of the Proposed Development is unknown at this stage. Based on the size of the Application Site, the unpaved road length required during construction is expected to be between 50 m and 100 m. As such, in line with the IAQM guidance, the magnitude of dust emissions from trackout is expected to be medium.

5.1.3 Sensitivity of the study area

The sensitivity of the area takes into account the following factors:

- The specific sensitivities of receptors in the area;
- The proximity and number of those receptors;
- In the case of PM₁₀, the local background concentration; and
- Site-specific factors, such as whether there are natural shelters, such as trees or other vegetation, to reduce the risk of wind-blown dust.

The IAQM distance bands for sensitivity are illustrated relative to the Application Site in Figure 3.

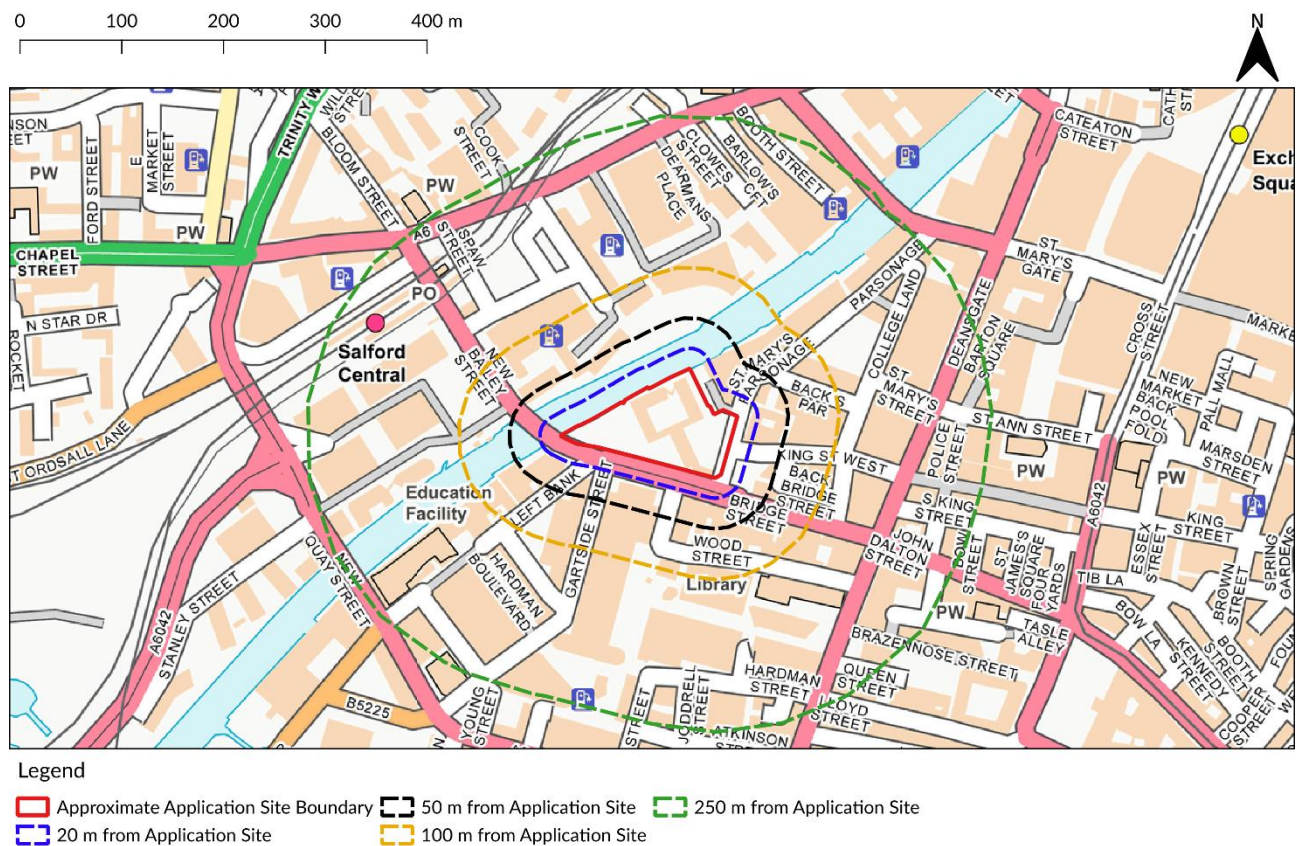


Figure 3: IAQM Demolition and Construction Dust Distance band criteria from the Application Site boundary. Contains Ordnance Survey Data © Crown Copyright 2024.

The sensitivity of the area and the factors considered are detailed in Table 8.

Table 8: Sensitivity of the area.

Sensitivity Type	Factors	Sensitivity of Area	
		On-site activity	Trackout
Dust Soiling	Within 50 m of the Application Site, there are multiple large apartment buildings containing over 100 residential units which would be considered high sensitivity receptors. In addition to this, there are over 10-100 office, commercial and hospitality spaces within 50 m of the Application Site which would be considered medium sensitivity receptors to dust soiling. Overall, the sensitivity of the area to dust soiling from on-site activity would be considered high. For trackout, the distances are measured from the side of the roads used by construction traffic. As construction traffic will likely rely on Bridge Street (A34), there are over 100 high sensitivity receptors within 50 m of the roadside up to 250 m from the Application Site. Therefore, the sensitivity of the area to dust soiling from trackout is high.	High	High
Human Health	The background concentration of PM₁₀ in the vicinity of the Application Site is predicted to be less than 24 µg/m³. Within 50 m of the Application Site, there are multiple large apartment buildings containing over 100 residential units which would be considered high sensitivity receptors. In addition to this, there are over 10-100 office, commercial and hospitality spaces within 50 m of the Application Site which would be considered medium sensitivity receptors. Overall, the sensitivity of the area to the human health effects of construction dust from on-site activity would be considered low. For trackout, the distances are measured from the side of the roads used by construction traffic. As construction traffic will likely rely on Bridge Street (A34), there are over 100 high sensitivity receptors within 50 m of the roadside up to 250 m from the Application Site. Therefore, the sensitivity of the area to the human health effects of construction dust from trackout is low.	Low	Low

5.1.4 Risk of dust impacts

The outcomes of the assessments of potential magnitude of dust emissions and the sensitivity of the area are combined to determine the risk of impact. This risk is then used to inform the selection of appropriate mitigation. Table 9 details the risk of dust impacts for demolition, earthworks, construction and trackout activities.

Table 9: Summary of potential unmitigated dust risks.

Potential Impact	Sensitivity	Demolition	Earthworks	Construction	Trackout
Magnitude		Large	Small	Large	Medium
Dust Soiling Impacts	High	High risk	Low risk	High risk	Medium risk
Human Health Impacts	Low	Medium risk	Negligible	Low risk	Low risk

5.2 Construction phase – vehicular pollutants.

The Application Site is located within Manchester AQMA and therefore the more stringent screening criteria (i.e. 100 LDV and 25 HDV) would apply.

Information on traffic movements anticipated during construction works was unavailable for the completion of the Air Quality Assessment. However, the development quantum is not anticipated to result in a significant increase in movements above the criteria outlined in the EPUK and IAQM planning guidance. The duration of movements will be short-term in nature and are not considered further within the context of this assessment. Therefore, in accordance with the criteria presented within EPUK and IAQM planning guidance, additional road vehicle trips during the construction phase of the Proposed Development “*can be considered to have insignificant effects*” on air quality.

5.3 Construction phase – non-road mobile machinery.

Pollutants emitted by NRMM that may have the most significant potential effects on local air quality are PM₁₀, PM_{2.5}, and NO_x/NO₂. Typically, NRMM is associated with construction sites and, therefore there is a potential for NRMM emissions to adversely affect local air quality as a result of the Proposed Development.

Furthermore, the IAQM construction guidance states that “*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.*”

6. Operational phase assessment.

The potential for air quality impacts during the operation of the Proposed Development are assessed in this section.

6.1 Road traffic emissions screening assessment.

Road traffic data associated with the Proposed Development has been provided by Curtins, the appointed Transport Consultants for the project. The transport assessment forecasts indicate that there will be a net reduction in trips from the Application Site as a result of the Proposed Development.

As there is anticipated to be a net reduction, the indicative criteria in the EPUK and IAQM planning guidance of an increase of more than 100 LDV AADT and/or 25 HDV AADT will not be exceeded. Therefore, no further assessment is required.

In accordance with the EPUK and IAQM planning guidance, the impacts on air quality from operational phase traffic generation are considered to be not significant.

6.2 Site suitability assessment.

This section presents a review of GMCA monitoring data and mapped concentrations by Defra in the vicinity of the Application Site, for the purpose of identifying the suitability of the Application Site for residential, office and commercial use and to identify any requirements for potential mitigation to be embedded into the Proposed Developments design.

As presented in Section 2, and in line with LAQM.TG(22), for the residential areas of the Proposed Development, the annual mean NO₂, PM₁₀ and PM_{2.5} AQOs, along with the 1-hour NO₂ and 24-hour mean PM₁₀ AQOs will be applicable. For the office and commercial areas of the Proposed Development, only the 1-hour mean NO₂ AQO is applicable. Additionally, though not required for planning, the Building Regulations Part F states that the annual mean NO₂ AQO also applies at non-dwelling sites and as such, the annual mean NO₂ will also be considered.

Furthermore, in line with the MCC Air Quality & Planning Technical Guidance²⁰, the annual mean PM_{2.5} WHO Guideline will also be considered for the Application Site.

6.2.1 Predicted NO₂ concentrations

A review of NO₂ concentrations monitored in the vicinity of the Application Site has been completed as part of the baseline review with recent monitoring results presented in Table 3 and Table 4.

The automatic monitor closest to the Application Site, MAN09, located approximately 90 m from the Application Site, recorded an exceedance of the annual mean NO₂ AQO in 2023. Although this is the closest monitoring location to the Application Site, the GMCA ASR states that pollutant concentrations at this location are affected by vehicles idling whilst illegally parked adjacent to the monitor. This impact is anticipated to be localised at the automatic monitoring location and unlikely to occur at the boundary of the Application Site. As such, results from this monitoring location are not considered to be representative of air quality conditions at the Application Site.

Passive diffusion tube monitoring location MA24NO, is a kerbside monitoring location approximately 550 m south east of the Application Site on Princess Street. This monitoring location is considered to be a more realistic representation of kerbside air quality conditions in the vicinity of the Application Site due to its proximity to the road and the junction between Princess Street and Cooper Street. MA24NO is set back approximately 2.5 m from the roadside, whereas the Proposed Development is set back by over 9 m. In addition all residential units will be at first floor and above, where concentrations are anticipated to be lower. An annual mean NO₂ concentration of 29.8 µg/m³ was recorded at this location in 2023, indicating compliance with the annual mean NO₂ AQO at the Application Site.

The 1-hour mean NO₂ AQO was not exceeded at any automatic monitoring locations in the vicinity of the Application Site in 2023. Furthermore, an annual mean concentration of 60 µg/m³ or above as diffusion tube

monitoring locations is often used to indicate a possible exceedance of the 1-hour mean NO₂ AQO. This level was not exceeded at any monitoring location in the vicinity of the Application Site in 2023.

This is supported by the Defra predicted background concentrations presented in Table 6, which indicate compliance with the annual mean NO₂ AQO at the Application Site in all years presented.

Therefore, NO₂ concentrations at the Proposed Development are considered to be compliant with the annual mean and 1-hour mean NO₂ AQOs and the Application Site is considered suitable for residential, office and commercial uses.

6.2.2 Predicted PM₁₀ concentrations

A review of PM₁₀ concentrations monitored in the vicinity of the Application Site has been completed as part of the baseline review with recent monitoring results presented in Table 3.

The automatic monitor closest to the Application Site that records PM₁₀ is MAN3, located approximately 820 m to the east. This monitor did not record any exceedances of the annual or 24-hour mean PM₁₀ AQOs in 2023. However, as this is an urban centre monitoring location, set back approximately 50 m from the nearest road, it may not be considered representative of air quality conditions at the Application Site.

Alternatively, automatic monitor MAN1, located approximately 1,280 m south east of the Application Site, is a kerbside monitoring location on Oxford Street that may be considered representative of worst-case air quality conditions at the Application Site. This monitor did not record any exceedances of the annual or 24-hour mean PM₁₀ AQOs in 2023.

This is supported by the Defra predicted background concentrations presented in Table 6, which indicate compliance with the annual mean PM₁₀ AQO at the Application Site in all years presented.

Therefore, PM₁₀ concentrations in the locale of the Proposed Development are considered to be compliant with the annual mean and 24-hour mean PM₁₀ AQOs and the Application Site is considered suitable for residential, office and commercial uses.

6.2.3 Predicted PM_{2.5} concentrations

A review of PM_{2.5} concentrations monitored in the vicinity of the Application Site has been completed as part of the baseline review with recent monitoring results presented in Table 3.

The only automatic monitor within the MCC area that records PM_{2.5} is MAN3, located approximately 820 m to the east. This monitor did not record any exceedances of the annual mean PM_{2.5} AQOs in 2023. Furthermore, this monitor did not record an exceedance of the annual mean PM_{2.5} WHO guideline in 2023. However, as this is an urban centre monitoring location, set back approximately 50 m from the nearest road, it may not be considered representative of air quality conditions at the Application Site.

Alternatively, Defra predicted background concentrations presented in Table 6, indicate compliance with the annual mean PM_{2.5} AQO and WHO guideline at the Application Site in all years presented.

Therefore, PM_{2.5} concentrations in the locale of the Proposed Development are considered to be compliant with the annual mean PM_{2.5} AQO and WHO guideline and the Application Site is considered suitable for residential, office and commercial uses.

6.2.4 Significance of air quality impacts

To determine the significance of predicted air quality impacts based upon a Site Suitability assessment, such as that undertaken as part of this assessment, the EPUK and IAQM planning guidance states:

"Where the air quality is such that an air quality objective at the building façade is not met, the effect on residents or occupants will be judged as significant, unless provision is made to reduce their exposure by some means."

With regards to the Proposed Development, the unmitigated impact significance associated with the Proposed Development has been predicted in accordance with the stated assessment methodology. The following factors have been considered when providing justification:

- The Proposed Development will not introduce any new receptor into an area of exceedance of the annual or 1-hour mean NO₂ AQOs based upon a review of NO₂ monitoring data and Defra predicted background concentrations within the development locale;
- The Proposed Development will not introduce any new receptor exposure into an area of exceedance of the annual mean or 24-hour PM₁₀ AQOs based upon a review of PM₁₀ monitoring data and Defra predicted background concentrations within the development locale; and
- The Proposed Development will not introduce any new receptor exposure into an area of exceedance of the annual mean PM_{2.5} AQO and WHO guideline based upon a review of PM_{2.5} monitoring data and Defra predicted background concentrations within the development locale.

As no exceedances of the considered AQOs are predicted, mitigation measures are not required for the operational phase of the Proposed Development. As such, the overall effect is considered to be 'not significant'.

7. Mitigation.

7.1 Construction phase.

To mitigate the potential impacts during the construction phase it is recommended that mitigation measures as detailed in the IAQM construction guidance are implemented.

It is recommended that MCC approve a Construction Environmental Management Plan (CEMP) including a Dust Management Plan (DMP) prior to works commencing on site, and that this is implemented using an appropriately worded planning condition. Table 12, in Appendix 2, details the measures that should be incorporated in the DMP.

These mitigation measures have been carefully selected for the Proposed Development and are based upon the dust risk categories outlined in Table 9 of this report. For general mitigation measures, which excludes those specifically targeted towards demolition, earthworks, construction and trackout (which are given towards the end of the table), high risk measures have been applied as these represent the highest risk category determined in Table 9. This approach is consistent with the IAQM construction guidance.

It should be noted that potential dust effects during the construction phase are considered to be temporary and short term in nature. The impacts are determined to be temporary as they will only potentially occur throughout the construction phase and short-term because these will only arise at particular times when certain activities and meteorological conditions combine to create the predicted level of magnitude.

However, with the application of the dust control and mitigation measures outlined in Appendix 2, it is considered that impacts at all receptors will be 'not significant' in accordance with the IAQM construction guidance.

7.1.1 Construction phase road traffic emissions

Potential air quality impacts associated with construction phase road traffic emissions, principally HDV movements, have been screened out for further assessment with associated impacts on air quality predicted to result in an 'insignificant' effect. Therefore, mitigation measures are not considered to be required.

7.1.2 Construction phase NRMM emissions

In accordance with Part 4 of the IAQM construction guidance, all NRMM would need to adhere to the emissions standards for NO₂ and PM₁₀ set out for NRMM. It is therefore considered the likely effects of construction plant on local air quality would be insignificant.

7.2 Operational phase.

7.2.1 Road traffic emissions

Potential air quality impacts associated with operational phase development trips have been screened out from further assessment as '*the impacts [on air quality from operational phase movements] can be considered to have insignificant effects*' in accordance with the EPUK and IAQM planning guidance. Therefore, mitigation measures such as a sustainable travel plan are not considered to be required.

7.2.2 Site suitability assessment

A review of GMCA monitoring data in consideration of the Application Site, and mapped concentrations by Defra in the locale of the Application Site, indicates no likely exceedance of the annual and 1-hour mean NO₂; the annual and 24-hour mean PM₁₀ AQOs; or the annual mean PM_{2.5} AQO or WHO guideline.

As no exceedances of any considered AQOs are predicted, this follows the 1st hierarchy principle of the EPUK and IAQM planning guidance to '*prevent and avoid*' exposure'. Therefore, no embedded mitigation into the Proposed Development design (in the form of mechanical ventilation, for example) is required and natural ventilation is possible from an air quality perspective.

8. Summary and conclusions.

This report details the potential air quality impacts associated with the construction and operation of a proposed mixed-use development at Albert Bridge House, Bridge Street, Manchester M3 5AH.

The findings of the assessment are as follows:

- The baseline assessment has shown that the Application Site is within the Manchester AQMA. Monitoring data in the vicinity of the Application Site indicates that no exceedances of the annual and 1-hour mean NO₂; the annual and 24-hour mean PM₁₀ AQOs; or the annual mean PM_{2.5} AQO or WHO were recorded at representative monitoring locations in the baseline year of 2023.
- A qualitative assessment of the potential dust impacts during the construction of the Proposed Development has been undertaken. Through good practice and implementation of appropriate mitigation measures, it is expected that the release of dust would be effectively controlled and mitigated, with resulting impacts considered to be 'not significant'. All dust impacts are considered to be temporary and short-term in nature;
- The results of the operational phase traffic screening assessment indicate that the Proposed Development will lead to a net reduction in trips on the local road network. The impact of the operational road traffic is therefore considered to be not significant;
- The Proposed Development energy strategy is all electric. As no combustion sources are proposed for the primary energy supply, no local air quality impacts are anticipated and a detailed assessment of impacts of combustion emissions from the energy plant has been screened out of this assessment;
- A qualitative site suitability assessment has been undertaken to assess the suitability of the Application Site for the proposed residential, office and commercial use. Based on the assessment results, there will be no likely exceedances of relevant AQOs for all pollutants at the Proposed Development and therefore additional mitigation is not required.

Based on the information above, it is considered that air quality should not be viewed as a constraint to planning and the Proposed Development conforms to the principles of National Planning Policy Framework, the Manchester Core Strategy and the Manchester Air Quality & Planning Technical Guidance.

9. Glossary of terms.

AADT	Annual Average Daily Traffic
AQAP	Air Quality Action Plan
AQDMP	Air Quality Dust Management Plan
AQMA	Air Quality Management Area
AQO	Air Quality Objective
AQS	Annual Status Report
AURN	Automatic Urban and Rural Network
CEMP	Construction Environmental Management Plan
DMP	Dust Management Plan
Defra	Department for Environment, Food and Rural Affairs
EPA	Environment Protection Act
EPUK	Environmental Protection UK
GMCA	Greater Manchester Combined Authority
HDV	Heavy Duty Vehicles (> 3.5 tonnes gross vehicle weight)
IAQM	Institute of Air Quality Management
LAQM	Local Air Quality Management
LDV	Light Duty Vehicles ($\leq$ 3.5 tonnes gross vehicle weight)
$\mu\text{g}/\text{m}^3$	Micrograms per cubic metre
MCC	Manchester City Council
NGR	National Grid Reference
NO_2	Nitrogen dioxide
NO_x	Nitrogen oxides (taken to be $\text{NO}_2 + \text{NO}$)
NPPF	National Planning Policy Framework
NRMM	Non-Road Mobile Machinery
Objectives	A nationally defined set of health-based concentrations for nine pollutants, seven of which are incorporated in Regulations, setting out the extent to which the standards should be achieved by a defined date. There are also vegetation-based objectives for sulphur dioxide and nitrogen oxides
PM_{10}	Particulate matter with an aerodynamic diameter less than 10 micrometres
$\text{PM}_{2.5}$	Particulate matter with an aerodynamic diameter less than 2.5 micrometres
PPG	Planning Practice Guidance
Standards	A nationally defined set of concentrations for nine pollutants below which health effects do not occur or are minimal
Trackout	The transport of dust and dirt from the construction / demolition site onto the public road network, where it may be deposited and then re-suspended by vehicles using the network. This arises when heavy duty vehicles (HDVs) leave the construction / demolition site with dusty materials, which may then spill onto the road, and/or when HDVs transfer dust and dirt onto the road having travelled over muddy ground on site
WHO	World Health Organisation

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- ² The Stationary Office (2021) Statutory Instrument 2021, The Environment Act 2021, London
- ³ Defra (2007) The Air Quality Strategy for England, Scotland, Wales and Northern Ireland – [online] (Last accessed: 25/02/2025), Available at: www.gov.uk/government/publications/the-air-quality-strategy-for-england-scotland-wales-and-northern-ireland-volume-1
- ⁴ The Stationery Office (2000) Statutory Instrument 2000, No 928, The Air Quality (England) Regulations 2000, London
- ⁵ The Stationery Office (2002) Statutory Instrument 2002, No 3043, The Air Quality (England) (Amendment) Regulations 2002, London
- ⁶ The Stationery Office (2010) Statutory Instrument 2010, No 1001, The Air Quality Standards Regulations 2010, London
- ⁷ The Stationery Office (2016) Statutory Instrument 2016, No 1184, The Air Quality Standards (Amendment) Regulations 2016, London
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- ²⁶ Cranfield Soil and Agrifood Institute Soilscales map – [online], (last accessed: 25/02/2025), Available at: <http://www.landis.org.uk/soilscales/>

Appendix 1 – Legislation, policy and guidance

Table 10: Legislation and National Policy Summary Table

Legislation and national policy	Summary notes
The Environment Act 1995 (Part IV)	The Environment Act requires the Secretary of State to publish an air quality strategy and local authorities to review and assess the quality of air within their boundaries (the latter is known as Local Air Quality Management)
The Air Quality Strategy	The Air Quality Strategy provides the policy framework for local air quality management and assessment in the UK. It sets out air quality standards and objectives for key air pollutants. These standards and objectives are designed to protect human health and the environment. The Strategy also sets out how the different sectors of industry, transport, and local government, can contribute to achieving these AQOs
The Environment Act 2021	The Environment Act 2021 acts as the UK's new framework of environmental protection and came into force on 1st April 2022. Regarding air quality, the Environment Act establishes a legally binding duty on government to bring forward at least two new air quality targets in secondary legislation. This was implemented through the Environmental Improvement Plan which outlines new PM _{2.5} targets for future years. These are a long-term target of 10 µg/m ³ by 2040 and an interim target of 12 µg/m ³ by 31st January 2028. These targets are expected to focus on reducing concentrations of, and exposure to, PM _{2.5} .
EU Limit Values.	The European Union has also set limit values for NO ₂ , PM ₁₀ and PM _{2.5} ; these are legally binding and have been implemented into English legislation by The Air Quality Standards Regulations 2010 and The Air Quality Standards (Amendment) Regulations 2016. The limit values for NO ₂ , PM ₁₀ and PM _{2.5} are the same as the English objectives (given in Table 2), but applied from 2010 for NO ₂ , 2005 for PM ₁₀ and 2015 for PM _{2.5} . The limit values apply at all locations (apart from where the public does not have access, where health and safety at work provisions apply and on the road carriageway).
Statutory Nuisance Legislation	Part III of the Environmental Protection Act (EPA) 1990 (as amended) and Section 79 of the EPA. Fractions of dust greater than 10 µm (i.e., greater than PM ₁₀) in diameter typically relate to nuisance effects as opposed to potential health effects and therefore are not covered within the UK Air Quality Strategy. In legislation there are currently no numerical limits in terms of what level of dust deposition constitutes a nuisance.
Clean Air Strategy	The Clean Air Strategy (CAS), published in 2019 sets out the Government's proposals aimed at delivering cleaner air in England, and indicates how devolved administrations intend to make emissions reductions. It sets out the comprehensive action that is required from across all parts of government and society to deliver clean air.
Building Regulations	Part F of the Building Regulations (2021) provides guidance for indoor air quality and the pollutant concentrations that must not be exceeded in both buildings for dwellings and non-dwellings.
National Planning Policy Framework	The National Planning Policy Framework (NPPF) 2024 sets out planning policy for England. It includes advice on when air quality should be a material consideration in development control decisions. The most relevant Paragraphs for air quality are included below: Paragraph 187: <i>"Planning policies and decisions should contribute to and enhance the natural and local environment by: [...]"</i> <i>e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or</i>

Legislation and national policy	Summary notes
	<i>land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans. [...] "</i> Paragraph 198: <i>"Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development."</i> Paragraph 199: <i>"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."</i>
Planning Practice Guidance	The NPPF is supported by Planning Practice Guidance (PPG) which sets out relevant information for this assessment in: – Paragraph 001 (Reference ID: 32-001-20191101) – Paragraph 002 (Reference ID: 32-002-20191101) – Paragraph 005 (Reference ID: 32-005-20191101) The PPG also sets out the information that may be required in an air quality assessment in: – Paragraph 007 (Reference ID: 32-007-20191101) It also provides guidance on options for mitigating air quality impacts in: – Paragraph 008 (Reference ID: 32-008-20191101)

Table 11: Primary guidance documents summary table

Primary guidance documents	Summary notes
Defra Local Air Quality Management Technical Guidance	Defra's LAQM.TG(22) ¹⁴ was published for use by local authorities in their LAQM review and assessment work. The document provides key guidance in aspects of air quality assessment, including screening, use of monitoring data and use of background data that are applicable to all air quality assessments.
EPUK and IAQM 'Air Quality Guidance for Planning'	Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM) have together published guidance (EPUK and IAQM planning guidance) ¹⁵ to help ensure that air quality is properly accounted for in the development control process.
IAQM 'Construction and Demolition Dust Guidance'	Guidance on the assessment of dust from demolition and construction has been published by the IAQM (IAQM construction guidance) ¹⁶ . The guidance provides a methodology to determine the dust emission magnitude and provides a series of matrices to determine the risk magnitude of potential dust sources associated with construction activities.

Appendix 2 - Mitigation measures for construction phase.

Table 12: Mitigation measures for construction phase

Issue	Mitigation measure
Communications	Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.
	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.
Dust Management Plan	Develop and implement a Dust Management Plan (DMP) incorporated within a Construction Environmental Management Plan (CEMP), which may include measures to control other emissions, approved by the Local Authority. The DMP may include monitoring of dust deposition, dust flux, real-time PM ₁₀ continuous monitoring and/or visual inspections.
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 off- site, and the action taken to resolve the situation in the log book.
	Hold regular liaison meetings with other high risk construction sites within 250 m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes.
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 check of surfaces such as street furniture, cars, window sills within 100 m of the site boundary, with cleaning to be provided if necessary.
	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.
	Agree dust deposition, dust flux, or real-time PM ₁₀ continuous monitoring locations with the Local Authority. Where possible, commence baseline monitoring at least three months before work commences on site or, if it is a large site, before work on a phase commences.
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.
	Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period.
	Avoid site runoff of water or mud.

Issue	Mitigation measure
	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 cover as described below.
	Cover, seed or fence stockpiles to prevent wind whipping.
Operating vehicles/machinery and sustainable travel	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.
	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 applicable).
	Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.
	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 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.
	Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.
Waste management	Avoid bonfires and burning of waste materials.
Demolition	Soft strip inside building before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).
	Ensure effective water suppression is used during demolition activities. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.
	Avoid explosive blasting, using appropriate manual or mechanical alternatives.
	Bag and remove any biological debris or damp down such material before demolition.
Earthworks	Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.
	Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.
	Only remove the cover in small areas during work and not all at once.

Issue	Mitigation measure
Construction	Avoid scrabbling (roughening of concrete surfaces) if possible.
	Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.
	Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.
	For smaller supplies of fine powder materials, ensure bags are sealed after use and stored appropriately to prevent dust.
Trackout	Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being in continuous use.
	Avoid dry sweeping of large areas.
	Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.
	Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.
	Record all inspections of haul routes and any subsequent action in a site log book.
	Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.
	Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).
	Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.
	Access gates to be located at least 10 m from receptors where possible.

Appendix 3 - Professional experience.

Andy Day (Hoare Lea), BSc (Hons), MSc, AMIEnvSc, MIAQM

Andy is an Associate Air Quality Consultant with Hoare Lea. He is an Associate Member of the Institute of Environmental Sciences and a Full Member of the Institute of Air Quality Management. He is a chemistry graduate with a Master's specialising in the catalysed removal of harmful volatile organic compounds (VOCs) often generated from the combustion of fuel in car engines.

Andy has worked on a range of projects of varying size across a number of different sectors. His experience focusses on work up to and through planning for air quality assessments and environmental impact assessments. Andy also has experience in detailed dispersion modelling of road traffic and energy combustion plant, emission mitigation statements, damage cost calculations, indoor and outdoor air quality monitoring and assessing the air quality impact at ecologically sensitive sites.

Andy has a particular interest in reducing emissions for the benefit of human health and the environment through the life cycle of a building.

Oliver Parsons (Hoare Lea), BSc (Hons), MSc, MIEnvSc, MIAQM

Oliver is a Senior Air Quality Consultant with Hoare Lea. He is a Full Member of the Institution of Environmental Sciences and a Full Member of the Institute of Air Quality Management. He has worked on projects across multiple sectors including residential, commercial and industrial sectors.

He has completed nine EIA within the past two years at Hoare Lea including SSEN (film studio), The Galleries (mixed use residential) and SBQ (mixed use residential). He has experience across different aspects of the air quality assessment processes including monitoring, detailed dispersion modelling of roads, standalone air quality assessments and environmental impact assessments.

Alex Johnson (Hoare Lea), MSc, BSc (Hons), AMIEnvSc, AMIAQM

Alex is an Air Quality Consultant with Hoare Lea. He is an Associate Member of the Institution of Environmental Sciences and an Associate Member of the Institute of Air Quality Management. He has worked on a number of air quality projects across various sectors since graduating from the University of Southampton with a master's degree in Environmental Pollution Control.

He has completed a variety of air quality projects at Hoare Lea, including air quality assessments, indoor air quality plans, monitoring analysis, and bespoke technical reports for clients across various sectors. Previously, he has also worked on several projects for Natural England, Defra and the Environment Agency to provide geospatial data analysis and research assistance.



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