

Air Quality Assessment

Air Quality Assessment for Planning



Prepared for:
Kier Sharston Limited

Prepared by:
Phoebe Honan

Date:
7 August 2025

Project/File:
35838-STN-XX-ZZ-RP-AQ-0002

Document control sheet

Issued by	Stantec Hydrock Limited Merchants' House North Wapping Road Bristol BS1 4RW UNITED KINGDOM stantec.com	+44(0) 1179 459225
Client	Kier Sharston Limited	
Project name	Sharston Industrial Estate, Wythenshawe	
Title	Air Quality Assessment	
Doc ref	35838-STN-XX-ZZ-RP-AQ-0002	
Project number	35838	
Status	S3	
Date	7 August 2025	

Document production record

Issue number	P02	Name
Prepared by	Phoebe Honan	
Checked by	Lauren Massingham	
Approved by	Lauren Massingham	

Document revision record

Issue number	Status	Date	Revision details
P01	S3	23/07/2025	First draft
P02	S3	07/08/2025	Final

Stantec Hydrock Limited has prepared this report in accordance with the instructions of the above named client for their sole and specific use. Any third parties who may use the information contained herein do so at their own risk.



Table of Contents

Document control sheet	i
1 Introduction	1
1.1 Proposed Development	1
1.2 Purpose of the Air Quality Assessment	2
2 Relevant Legislation	0
2.1 Air Quality Regulations and Objectives	0
2.2 Local Air Quality Management	2
2.3 National Planning Policy Framework	2
2.4 Planning Practice Guidance	3
2.5 Local Planning Policy	3
3 Methodology	0
3.1 Consultation	0
3.2 Guidance	0
3.3 Baseline Air Quality	0
3.4 Construction Phase Assessment	1
3.4.1 Dust Risk Assessment	1
3.4.2 Construction Traffic Emissions	1
3.5 Operational Phase Assessment	2
3.5.1 Scope of Assessment	2
4 Baseline Air Quality Conditions	0
4.1 Local Air Quality Management	0
4.2 Clean Air Plan	0
4.3 Local Emission Sources	0
4.3.1 Road Traffic Emissions	0
4.3.2 Point Source Emissions	0
4.4 DEFRA Mapped Concentrations	1
4.4.1 Background Concentrations	1
4.4.2 Pollution Climate Mapping	1
4.5 Air Quality Monitoring Data	1
4.5.1 Automatic Monitoring	1
4.5.2 Passive Monitoring	2
5 Construction Phase Assessment	0
5.1 Overview	0
5.2 Potential Dust Emission Magnitude	0
5.3 Sensitivity of Area	1
5.3.1 Dust Soiling Impacts	2
5.3.2 Human Health Impacts	2
5.3.3 Summary of Area Sensitivity	3
5.4 Risk of impacts	3
6 Exposure Assessment	0
7 Mitigation Measures	1
7.1 Construction Phase	1
7.2 Operational Phase	1
7.2.1 Electric Vehicle Charging Infrastructure	1
7.2.2 Travel Plan Measures	1
8 Discussion and Conclusion	1
List of Tables	
Table 1: National AQALs	0
Table 2: Summary of where AQALs should apply	1



Air Quality Assessment

Table of Contents

Table 3: EPUK & IAQM Stage 2 criteria	2
Table 4: Defra Mapped Background Concentrations	1
Table 5: Passive Diffusion Tube Monitoring Concentrations	2
Table 6: Potential Dust Emission Magnitude.....	1
Table 7: Sensitivity of Local Area	3
Table 8: Risk of Adverse Impacts During Construction Phase	3

List of Figures

Figure 1: Site Location	1
Figure 2: Local Authority Monitoring.....	2
Figure 3: Construction Phase Receptors	2
Figure 4 Wind Rose Manchester Airport 2020 – 2024	2

List of Appendices

Appendix A Meteorological Data

Appendix B Construction Dust Mitigation



1 Introduction

Stantec have been commissioned by Kier Sharston Limited (the 'Applicant') to prepare an Air Quality Assessment (AQA) to support the planning application for an industrial and logistics development (the 'Proposed Development'), at the Former Electrium Sales Ltd Site, 1934 Sharston Road, Wythenshawe (the 'Site').

The Site is located within the administrative boundary of Manchester City Council (MCC) (the 'LPA') and is centred on the approximate National Grid Reference (NGR) x383250, y389340.

The Site comprises land and buildings on Sharston Road, within Sharston Industrial Estate. It measures approximately 1.6ha and is predominantly flat and broadly rectangular in shape. The Site is bound by Harper Road to the south, Sharston Road to the west, Longley Lane to the north and existing industrial buildings to the east. To the south, east and west of the Site are predominantly commercial uses within Sharston Industrial Estate. To the north, across Longley Lane, lies residential uses, a nursery, medical centre and primary school. Figure 1 shows the Site location and surrounding locale.



Figure 1: Site Location

1.1 Proposed Development

The proposal seeks full planning permission for the development of 8,511 sq. m of industrial and logistics floorspace, arranged across nine units. The largest of the units (Unit 1) is located to the south of the Site,



with dedicated access, servicing and staff parking areas. The remaining eight units are located within two terraces to the north of the Site, accessed from Sharston Road.

The application also seeks permission for landscaping and all associated works, including the provision of revised access arrangements from Sharston Road and Harper Road, as well as parking and servicing areas.

1.2 Purpose of the Air Quality Assessment

The assessment describes the scope, relevant legislation, assessment methodology and the baseline conditions currently existing in the area. It then presents an assessment of potential impacts during the construction and operational phases of the Proposed Development, and an evaluation of the significance of these effects with respect to air quality.



2 Relevant Legislation

2.1 Air Quality Regulations and Objectives

The Air Quality (England) Regulations 2000 (AQR) defined National Air Quality Objectives (NAQOs, a combination of concentration-based thresholds, averaging periods and compliance dates) for a limited range of pollutants. Subsequent amendments were made to the AQR in 2001 and 2002 to incorporate 'limit values' and 'target values' for a wider range of pollutants as defined in European Union (EU) Directives.

These amendments were consolidated by the Air Quality Standards Regulations 2010 (AQSR) (with subsequent amendments most notably in 2016 and for the devolved administrations), which transposed the EU's Directive on ambient air quality and cleaner air for Europe (2008/50/EC)¹.

Following the Transition Period after the UK's departure from the EU in January 2020, the Air Quality (Amendment of Domestic Regulations) (EU Exit) Regulations 2019 (and subsequent amendments for the devolved administrations) have amended the Air Quality Standards Regulations 2010 to reflect the fact that the UK has left the EU. The Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020 amended the PM_{2.5} limit value in the AQSR to 20 µg/m³.

The Air Quality Strategy (AQS)² sets out the government's policies and framework for improving air quality in England with the aim of meeting the requirements of above legislation. The AQS also outlines the Limit Values, Target Values, Standards, Objectives, Critical Levels and Exposure Reduction Targets for the protection of human health and the environment (collectively termed Air Quality Assessment Levels (AQALs)) throughout this report. Those relevant to this assessment are provided below, in Table 1:

Table 1: National AQALs

Pollutant	Averaging Period	AQALs	
NO₂	1 Hour Mean	200 µg/m ³	Not to be exceeded more than 18 times in a year.
	Annual Mean	40 µg/m ³	
PM₁₀	24 Hour Mean	50 µg/m ³	Not to be exceeded more than 35 times in a year.
	Annual Mean	40 µg/m ³	
	Annual Mean	20 µg/m ³	
PM_{2.5}	Annual Mean Concentration Target ('AMCT')	10 µg/m ³	To be met across England by 2040
	-	Population Exposure Reduction Target ('PERT')	35% reduction in population exposure by 2040 (compared to a base year of 2018).

¹ Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe

² <https://www.gov.uk/government/publications/the-air-quality-strategy-for-england/air-quality-strategy-framework-for-local-authority-delivery>



With reference to the AMCT for PM_{2.5}, it should be noted that the date for compliance is 2040. However, in line with the Defra “PM_{2.5} Interim Planning Guidance”³ this AQA will consider the 2040 AMCT for PM_{2.5}, identify key sources of PM_{2.5} air pollution from the Proposed Development, and outline the measures proposed to minimise emissions of PM_{2.5} and its precursors as far as is reasonably practicable.

Further PM_{2.5} targets are outlined in the Environmental Improvement Plan 2023⁴, which provides interim targets stating that by January 2028 annual mean concentrations must be 12µg/m³ or lower and the population exposure must be reduced by at least 22% compared to 2018.

Defra's Local Air Quality Management Technical Guidance 2022 (LAQM.TG(22))⁵ provides guidance on where the above AQAL's should apply. This is summarised below, in Table 2.

Table 2: Summary of where AQALs 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 other 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 objective would apply, together with hotels. Gardens of residential properties	Kerbside sites (as opposed to other 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 apply. Kerbside site (for example, pavements of busy shopping streets). Those parts of car parks, bus stations and railways stations etc. which are not fully enclosed, where members of the public might be expected to spend one hour or more. Any outdoor locations where members of the public might reasonably expect to spend one hour or longer.	Kerbside sites where the public would not be expected to have regular access.

³ <https://uk-air.defra.gov.uk/pm25targets/planning>

⁴ HM Government, Environmental Improvement Plan 2023 <https://www.gov.uk/government/publications/environmental-improvement-plan>

⁵ Defra, “LAQM Technical Guidance (TG22)” (Department for Food, Environment and Rural Affairs (Defra), August 2022), <https://laqm.defra.gov.uk/wp-content/uploads/2022/08/LAQM-TG22-August-22-v1.0.pdf>



Averaging Period	Objectives should apply at:	Objectives should generally NOT apply at:
15 Minute Mean	All locations where member of the public might reasonably be exposed for a period of 15 minutes	

2.2 Local Air Quality Management

Obligations under the Environment Act 2021⁶ (which provides an amendment to the Environment Act 1995⁷) requires local authorities to review and assess air quality in their administrative boundaries. Where AQALs are predicted to be exceeded, the local authority must declare an Air Quality Management Area (AQMA) at sensitive receptor locations and formulate an Air Quality Action Plan (AQAP) to reduce pollution concentrations to values below AQALs.

MCC declared AQMAs, Clean Air Plan (CAP), and published AQAP are discussed in Section 4.1.

2.3 National Planning Policy Framework

The National Planning Policy Framework (NPPF)⁸ sets out the Government's planning policy for England. It requires planning decisions for any new development to prevent new and existing development from contributing to, or being put at risk from, unacceptable levels of air pollution (paragraph 187). It also states that planning decisions should sustain and contribute towards compliance with relevant limit values or national objectives for air pollutants, taking into account the presence of AQMAs and Clean Air Zones (CAZ)s (paragraph 199), and the cumulative impacts from other sites (paragraph 198).

Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. Furthermore, planning decisions should ensure that any new development in AQMAs and CAZs is consistent with the local air quality action plan.

Also, to help reduce congestion and emissions, to improve air quality and public health, significant development should be focused on locations which are / can be made sustainable through limiting the need to travel (paragraph 110).

⁶ <https://bills.parliament.uk/bills/2593/publications>

⁷ Environment Agency, "Environment Act 1995" (The Environment Agency, 2002), <http://www.legislation.gov.uk/ukpga/1995/25/contents>.

⁸ Department for Levelling Up, Housing & Communities. National Planning Policy Framework (December, 2024). [online] Available: <https://assets.publishing.service.gov.uk/media/675abd214cbda57cacd3476e/NPPF-December-2024.pdf>



2.4 Planning Practice Guidance

Reference ID 32 (Air Quality) of the National Planning Practice Guidance (NPPG)⁹ provides guiding principles on how planning can take account of the impact of new development on air quality. The NPPG summarises the importance of air quality in planning and the key legislation relating to it.

2.5 Local Planning Policy

The Development Plan in Manchester consists of the Core Strategy (adopted 2012) and Place for Everyone Joint Development Plan Document (adopted 2024).

The Core Strategy¹⁰ was adopted on 11th July 2012 and is the key document in the Manchester Local Plan. It sets out the long-term strategic policies for future development in Manchester. Within the Core Strategy Policy EN16 relates to air quality as follows:

"The Council will seek to improve the air quality within Manchester, and particularly within Air Quality Management Areas, located along Manchester's principal traffic routes and at Manchester Airport. 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.

When assessing the appropriateness of locations for new development the Council will consider the impacts on air quality, alongside other plan objectives. This includes cumulative impacts, particularly in Air Quality Management Areas."

The Core Strategy goes further in stating that:

"Whilst this policy seeks to improve air quality within Manchester's AQMA it also applies across the District in order to assist air quality across Manchester remaining at acceptable levels. It should be noted that other policies within the Core Strategy will guide the location of development in order to reduce the need for private transport and encourage the use of decentralised and renewable energy and green infrastructure to reduce both emissions and their impact still further."

Policy DM 1 'Development Management' also includes a reference to air quality, stating that:

"all development should have regard to effects on amenity, including air quality".

The Places for Everyone Plan¹¹ on 21st March 2024. Places for Everyone is a long-term plan of nine Greater Manchester districts for jobs, new homes, and sustainable growth up to 2039. The following policy relates to air quality:

*"Policy JP-S5
Clean Air*

⁹ Ministry of Housing, Communities & Local Government, "Reference ID (32) Air Quality" (Ministry of Housing, Communities & Local Government, 2019), <https://www.gov.uk/guidance/air-quality-3>.

¹⁰ Manchester City Council, "Manchester's Local Development Framework, Core Strategy Development Plan Document, July 2012, Core Strategy | Manchester City Council

¹¹ <https://www.greatermanchester-ca.gov.uk/media/9578/places-for-everyone-joint-development-plan-document.pdf>



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:

- 1. Locating and designing development, and focusing transport investment, so as to reduce reliance on forms of transport that generate air pollution;*
- 2. Determining planning applications in accordance with 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;*
- 3. 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 and development only permitted where they are acceptable and/or suitable mitigation can be provided;*
- 4. Restricting and carefully regulating developments that would generate significant point source pollution such as some types of industrial activity and energy generation;*
- 5. Significantly expanding the network of electric vehicle charging points, both for public and private use, including as part of new developments;*
- 6. Implementing the Clean Air Plan and associated measures;*
- 7. 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;*
- 8. Designing streets to avoid trapping air pollution at ground level, including through the appropriate location and scale of buildings and trees;*
- 9. Controlling traffic and parking within and around schools, early years sites and other locations that are particularly sensitive to air quality;*
- 10. 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*
- 11. 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."*



3 Methodology

3.1 Consultation

Full details of the AQA approach were sent via the MCC Environmental Health contact form to MCC in July 2025 with a request for further comment / guidance. To date no response has been received.

However, it should be noted that pre-application consultation has been undertaken with Council officers and an AQA was requested during this consultation.

3.2 Guidance

The following guidance has been used to undertake this AQA:

- Defra's LAQM.TG(22)⁵;
- Environmental Protection UK (EPUK) & Institute of Air Quality Management (IAQM) Land-use Planning & Development Control: Planning for Air Quality¹²;
- The IAQM's guidance on assessing impacts from construction¹³ and
- MCC's Air Quality & Planning Technical Guidance¹⁴.

3.3 Baseline Air Quality

The baseline air quality conditions in the vicinity of the Site have been established through the compilation and review of the following sources. The Baseline Assessment can be found in Section 4.

- Data from the National Atmospheric Emissions Inventory (NAEI)¹⁵, Environment Agency (EA)¹⁶ and Defra's Pollutant Release and Transfer Register (PRTR) data¹⁷;
- Defra's modelled background concentrations of AQS pollutants (UK-AIR)¹⁸. These estimates are produced using detailed modelling tools and are available as concentrations at central 1km² National Grid square locations across the UK. Mapped background concentrations have been obtained based upon the 2021 base year Defra update (November 2024 publication);
- Defra's predicted roadside concentrations of NO₂ produced from their pollution climate mapping (PCM)¹⁹ model;

¹² EPUK & IAQM, "Land-Use Planning & Development Control: Planning for Air Quality" (Institute for Air Quality Management (IAQM), January 2017), <http://www.iaqm.co.uk/text/guidance/air-quality-planning-guidance.pdf>.

¹³ IAQM, "Guidance on the Assessment of Dust from Demolition and Construction" (Institute of Air Quality Management (IAQM)), January 2024), <https://iaqm.co.uk/wp-content/uploads/2013/02/Construction-Dust-Guidance-Jan-2024.pdf>.

¹⁴ Manchester City Council, Air Quality & Planning Technical Guidance, August 2022, https://www.manchester.gov.uk/downloads/download/5199/information_for_developers.

¹⁵ National Atmospheric Emissions Inventory, UK Emissions Interactive Map (beis.gov.uk).

¹⁶ <https://data.gov.uk/dataset/cfd94301-a2f2-48a2-9915-e477ca6d8b7e/pollution-inventory>

¹⁷ UK Pollutant Release and Transfer Register (PRTR) <https://prtr.defra.gov.uk/map-search>

¹⁸ UK-AIR, "Background Mapping Data for Local Authorities - 20218," n.d., <https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2021>.

¹⁹ <https://uk-air.defra.gov.uk/data/gis-mapping/>



- Multi Agency Geographic Information for the Countryside (MAGIC)²⁰ which incorporates Natural England's interactive maps; and,
- MCC's latest available air quality monitoring data, derived from the latest available air quality annual status report published in 2024²¹. 2023 data for monitoring locations has been sourced from Clean Air for Greater Manchester website.

3.4 Construction Phase Assessment

3.4.1 Dust Risk Assessment

The construction dust risk assessment is provided in Section 5 and has been undertaken in line with IAQM guidance¹³. This considers the risk of impacts during the construction phase in terms of nuisance dust, human health (PM₁₀ exposure) and ecological impacts.

With regard to ecological receptors, risk assessment should be taken where high-sensitivity receptors are located within 50m of a Site boundary, or within 50m of any routes used by construction vehicles on the public highway, up to 250m from the Site entrance. The MAGIC website²⁰ has been reviewed to identify whether any statutory ecological sensitive receptors present in the area. *No receptors were identified within 50m of the Site boundary or expected Trackout route and therefore no further consideration of ecological receptors is required.*

Sensitive receptors were identified within 250m of the Site boundary. Based on the IAQM guidance residential dwellings, museums, car parks and car show room are indicative examples of high sensitivity receptors in relation to both dust soiling and health effects of PM₁₀. Indicative examples of medium sensitivity receptors include places of work and parks.

The IAQM guidance states that the potential dust emission magnitude from Demolition, Earthworks, Construction and Trackout should all be assessed individually. In addition, the sensitivity of the area to adverse dust impacts should also be defined.

The overall significance of the risk of adverse impacts during the construction phase can then be defined using the 'risk of impacts matrix' for each stage of the construction phase described above.

3.4.2 Construction Traffic Emissions

The IAQM guidance¹³ states that from experience of assessing exhaust emissions from site traffic, it is unlikely that any significant adverse impacts on local air quality would be caused and in the vast majority of cases, quantitative assessment is not needed. As such, short term effects of construction traffic emissions have not been assessed, as they are also likely to be well below the EPUK & IAQM guidance traffic criteria outlined in Table 3.

²⁰ <https://magic.defra.gov.uk/MagicMap.aspx>

²¹ Greater Manchester Combined Authority, 2023 Air Quality Annual Status Report (ASR), In fulfilment of Part IV of the Environment Act 1995 Local Air Quality Management, June 2024.



3.5 Operational Phase Assessment

3.5.1 Scope of Assessment

The scope of assessment has also been determined against the EPUK & IAQM's checklist criteria¹², which is also stated within the MCC Air Quality & Planning Technical Guidance¹⁴. The Proposed Development meets the Stage 1 Criteria for requiring an AQA whereby more than 10 parking spaces proposed and more than 1,000m² of floor space for the combined proposed uses. Accordingly, the Proposed Development has been considered against the relevant Stage 2 checklist criteria shown in Table 3, which identifies whether a detailed assessment of potential air quality impacts is required.

Stage 2 includes some criteria which are not directly relevant to the Proposed Development, such as those related to the realignment of roads within an AQMA, new road junctions and underground car parks. These have been excluded from this assessment and only relevant screening criteria have been included, as presented in Table 3.

Table 3: EPUK & IAQM Stage 2 criteria

Criteria	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. (LDV - cars and small vans <3.5t gross vehicle weight)	A change of LDV flows of: - more than 100 AADT within or adjacent to an AQMA - more than 500 AADT elsewhere.
2	Cause a significant change in Heavy Duty (HDV) flows on local roads with relevant receptors (HDV = goods vehicles + buses >3.5t gross vehicle weight).	A change of HDV flows of: - more than 25 AADT within or adjacent to an AQMA - more than 100 AADT elsewhere.
3	Have one of more substantial combustion processes, where there is a risk of impacts at relevant receptors. NB. This includes combustion plant associated with standby emergency generators (typically associated with centralised energy centres) and shipping.	Typically, any combustion plant where the single or combined NO _x emission rate is less than 5mg/sec is unlikely to give rise to impacts, provided that the emissions are released from a vent stack in a location and at a height that provides adequate dispersion. In situations where the emissions are released close to buildings with relevant receptors, or where the dispersion of the plume may be adversely affected by the size and/or height of adjacent buildings (including situation where the stack height is lower than the receptor) then consideration will need to be given to potential impacts at much lower emissions rates. Conversely, where existing nitrogen dioxide concentrations are low, and where the dispersion conditions are favourable, a much higher emission rate may be acceptable.

The proposed energy strategy comprises air source heat pumps (ASHP) and Solar PVs. No combustion will be required. Therefore, it has been assumed that the Proposed Development will not introduce additional sources of stationary / plant combustion and no further assessment has been undertaken.



The Site is not located within an AQMA, however vehicles accessing the Site will likely route through the Greater Manchester (GM) AQMA to the South. As such, the more stringent criteria from the table above apply.

Sweco, the Transport Consultants, agreed with MCC at pre-application that a full transport assessment is not required on the basis that the Proposed Development will provide a smaller re-provision of the same land use classes as the existing site (B2/B8). The existing Site comprised 12,390 m² B2/B8 use, and the Proposed Development will provide 8,511 m² of the same land use class (B2/B8). As such, it is considered that the Proposed Development will generate less vehicle trips and will therefore be below the relevant screening threshold. As such, a detailed assessment of air quality impacts from generated traffic is not required.

Based on the above, a detailed assessment of air quality impacts has been screened out in line with the EPUK & IAQM guidance¹² which states:

"If none of the criteria are met, then there should be no requirement to carry out an air quality assessment for the impact of the development on the local area, and the impacts can be considered as having an insignificant effect."



4 Baseline Air Quality Conditions

4.1 Local Air Quality Management

The GM AQMA has been declared by the GMCA of which MCC is one of the included Local Authorities. GM AQMA has been declared for exceedances of the annual mean NO₂ AQAL and covers “An Area covering the 10 districts of Greater Manchester, including arterial routes, district centres, and airport.” The Proposed Development is located 350m north of the AQMA.

The GMCA have an AQAP²² to help reduce pollutants within this designated area. Actions include, promoting sustainable transport including buses, cycling, providing resources to help raise awareness and educate and increased Electric Vehicle charging provision.

4.2 Clean Air Plan

Government approved the Greater Manchester CAP on 23 January 2025, which concluded that there was to be no CAZ or charge for any vehicles, anywhere in Greater Manchester. The original proposed CAP included plans for a GM-wide category C charging CAZ, under legal direction from Government. However, following the COVID-19 pandemic, the original CAP was no longer the right solution due to posing significant financial threats for local people, businesses and jobs. The revised and approved CAP includes measures such as:

- 117 new lower and zero-emission buses and EV infrastructure;
- Funding to support moving Greater Manchester’s taxi fleet to cleaner vehicles; and
- Local measures to manage traffic flows in Manchester and Salford.

4.3 Local Emission Sources

4.3.1 Road Traffic Emissions

The main source of air pollution in the Site locale are vehicles using the local road network, predominantly the M56, A560, M60 and A5103 to the South, West and North respectively.

4.3.2 Point Source Emissions

A review of the NAEI¹⁵, EA¹⁶ and Defra’s PRTR¹⁷ data indicates that there are no major industrial pollution sources in the immediate vicinity of the Site that will influence local air quality.

²² https://www.manchester.gov.uk/info/200075/pollution/7697/air_quality/3



4.4 DEFRA Mapped Concentrations

4.4.1 Background Concentrations

Mapped background concentrations of NO₂, PM₁₀ and PM_{2.5} were downloaded for the grid square containing the Site. Background pollutant concentrations for 2025 (current year) are displayed in Table 4.

Table 4: Defra Mapped Background Concentrations

Grid Square (x,y)	Pollutant	AQAL (µg/m ³)	2025 Annual Mean Concentration (µg/m ³)
383500, 389500	NO ₂	40	14.2
	PM ₁₀	40	12.8
	PM _{2.5}	20	7.3

The data show that annual mean background concentrations of NO₂, PM₁₀ and PM_{2.5} at the grid square within which the Site is located is below the AQALs in 2025.

Concentrations of all pollutants are predicted to decline incrementally each year. These reductions are principally due to the forecast effect of the roll out of cleaner vehicles and strategies to reduce emissions across all sectors.

4.4.2 Pollution Climate Mapping

Defra's PCM model¹⁹ provides estimates of roadside concentrations of annual mean NO₂, which are used in reporting compliance with limit values. The model provides projected roadside concentrations of pollutants, for the years 2018-2030 inclusive, based on a 2018 base year.

The closest road to the Site within the PCM model is M56 to the South of the Site. The projected 2025 roadside annual mean NO₂ concentration is 30.3 µg/m³ which is below the AQAL. Roadside concentrations within the PCM model are predicted to decline incrementally year on year.

4.5 Air Quality Monitoring Data

4.5.1 Automatic Monitoring

The UK Automatic Urban and Rural Network (AURN) is a countrywide network of air quality monitoring stations operated on behalf of the Defra. Monitoring data for AURN sites is available from the UK Air website²³.

²³ Automatic Urban and Rural Network (AURN) - Defra, UK



The closest AURN is the Manchester Sharston (UKA00617) monitor located approximately 3.3km to the Southeast of the Site. Based on this distance results from this monitoring site are not reported. This monitor is co-operated with MCC and is also the closest MCC automatic monitor to the Site.

4.5.2 Passive Monitoring

Passive NO₂ diffusion tube monitoring was undertaken at numerous locations within the GM area in 2023. The location of the closest monitoring sites in relation to the Site are shown in Figure 2 with data reported in Table 5.

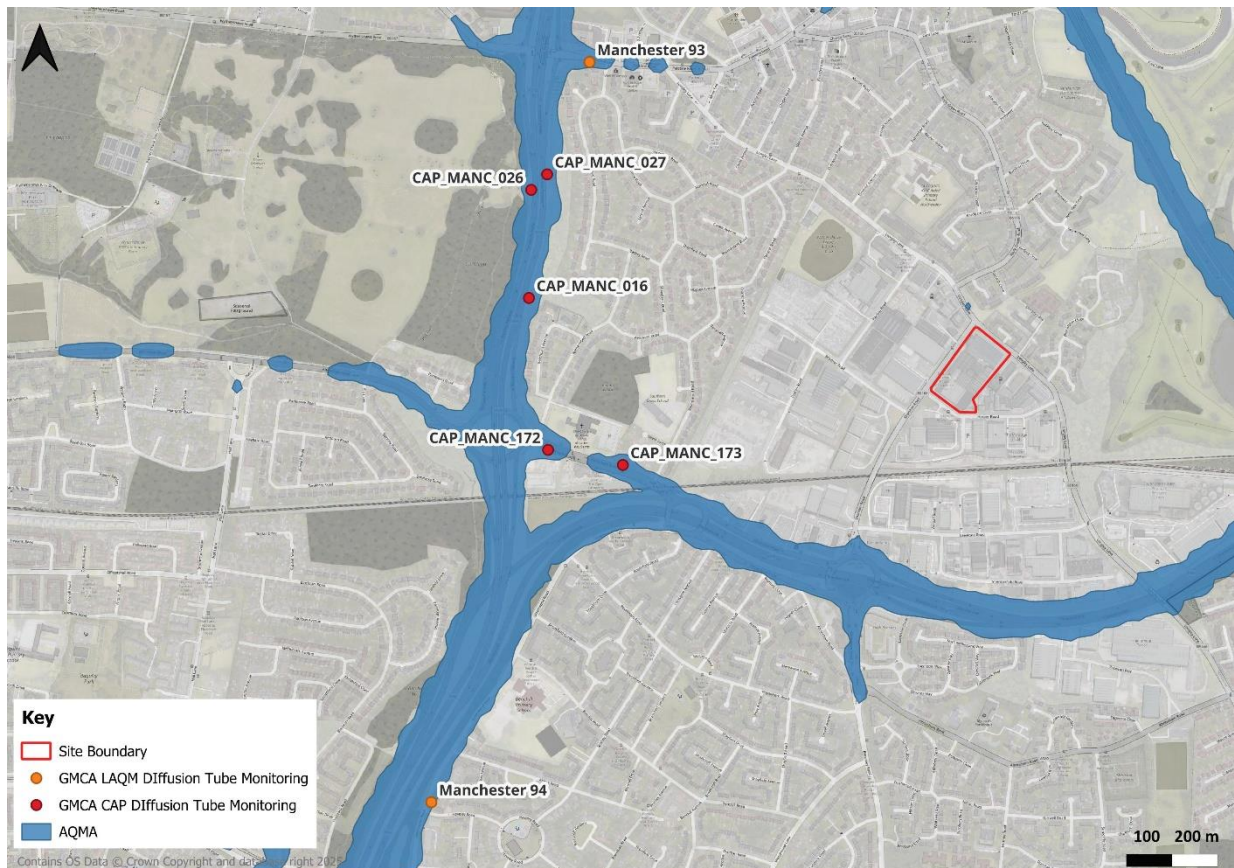


Figure 2: Local Authority Monitoring

Table 5: Passive Diffusion Tube Monitoring Concentrations

Site ID	X (m)	Y (m)	Distance from Site (km)	Annual Mean Concentration (µg/m³)				
				2019	2020	2021	2022	2023
LAQM Monitoring								
Manchester 93	382419	390010	1 – NW	42.9	29.4	33.8	34.0	31.0
Manchester 94	382072	388388	1.4 - SW	32.1	25.2	26.0	28.0	27.5
CAP Monitoring								
CAP_MANC_173	382492	389127	0.7 – SW	-	-	-	38.9	39.1
CAP_MANC_172	382328	389160	0.8 – SW	-	-	-	38.9	37.5
CAP_MANC_016	382286	389493	0.9 – W	53.2	35.5	32.3	37.5	36.9
CAP_MANC_026	382291	389730	1.0 - W	56.1	33.7	28.4	23.6	22.1



Site ID	X (m)	Y (m)	Distance from Site (km)	Annual Mean Concentration ($\mu\text{g}/\text{m}^3$)				
				2019	2020	2021	2022	2023
CAP_MANC_027	382326	389764	1.0 - W	<u>69.7</u>	42.1	38.8	49.2	49.1

Notes: **Bold** denotes an exceedance of the annual mean NO₂ AQAL. **Bold underlined** denotes a likely exceedance of the 1-hour NO₂ AQAL.

The data in Table 5 shows there have been exceedances of the NO₂ annual mean AQAL at several sites in 2019, namely Manchester 93, CAP_016, CAP_026 and CAP_027. Furthermore, the measured concentration at Cap_027 was $>60\mu\text{g}/\text{m}^3$ and therefore exceedance of the 1-hour AQAL during 2019 was likely to have occurred. With the exception of Cap_027, the remaining monitoring locations have decreased to below the AQAL. That said, measured concentrations at the CAP monitoring sites, excluding CAP_026, have remained within 10% of the AQAL and therefore there is a risk of exceedance at these locations.

All the monitoring locations presented are located within the AQMA and situated adjacent to the M56 and therefore not representative of conditions at the Site. It is expected that NO₂ concentrations at the Site would be lower than those presented above.



5 Construction Phase Assessment

5.1 Overview

The construction phase of the Proposed Development will involve several activities that will release polluting emissions to air. Predominantly, these will be emissions of dust. As such, a qualitative construction dust risk assessment has been carried out in accordance with IAQM guidance¹³. Where detailed information was unknown, the dust emission magnitude has been calculated based on professional judgement.

Construction activities will include:

- material export and import;
- temporary stockpiling of materials;
- groundwork for foundations and services;
- construction of buildings;
- landscaping works; and
- vehicle movements (with the potential to track-out material from site).

5.2 Potential Dust Emission Magnitude

The potential dust emission magnitude for each construction activity is presented in Table 6.



Table 6: Potential Dust Emission Magnitude

Activity	Potential Dust Emission Magnitude	Justification
Demolition	N/A	Demolition is being undertaken at the time of writing and therefore does not comprise part of the proposals. Demolition activities have therefore not been considered further.
Earthworks	Medium	The total area of the Site is c.16,000 sq.m, and subsequently falls into the IAQM 'medium' criteria. The prevailing soil-type at the Site is described as ' <i>Sandy and Loamy</i> ' following review of Soilscares ²⁴ . Sandy and Loamy soils have a low to moderate potential for dust as they are composed of predominantly sand with less silt content. Less than 10 heavy earth moving vehicles are expected to be active at any one time.
Construction	Large	The total volume of the completed built form of the Proposed Development is estimated to be >75,000 m ³ which falls within the IAQM's 'Large' criteria. The construction materials will likely comprise concrete, metal frames and cladding. No concrete batching will occur on-site during construction.
Trackout	Small	The expected unpaved road length required for Trackout will be <50m. Vehicles will access via the existing road network. In addition, the number of site vehicles is unlikely to exceed the IAQM's 'Small' threshold of <20 HDV (>3.5t) outward movements per day.

5.3 Sensitivity of Area

The prevailing wind direction for the closest regionally representative meteorological measurement station to the Site, at Manchester Airport, is shown for 2020 to 2024 in Appendix B. The wind rose shows that the prevailing winds are from the west-south-west.

Figure 3 shows the construction phase distance buffers (20m, 50m, 100m and 250m) around the Construction boundary, as well as identified high and medium sensitivity receptor locations within these buffers.

²⁴ <http://www.landis.org.uk/soilscares/>



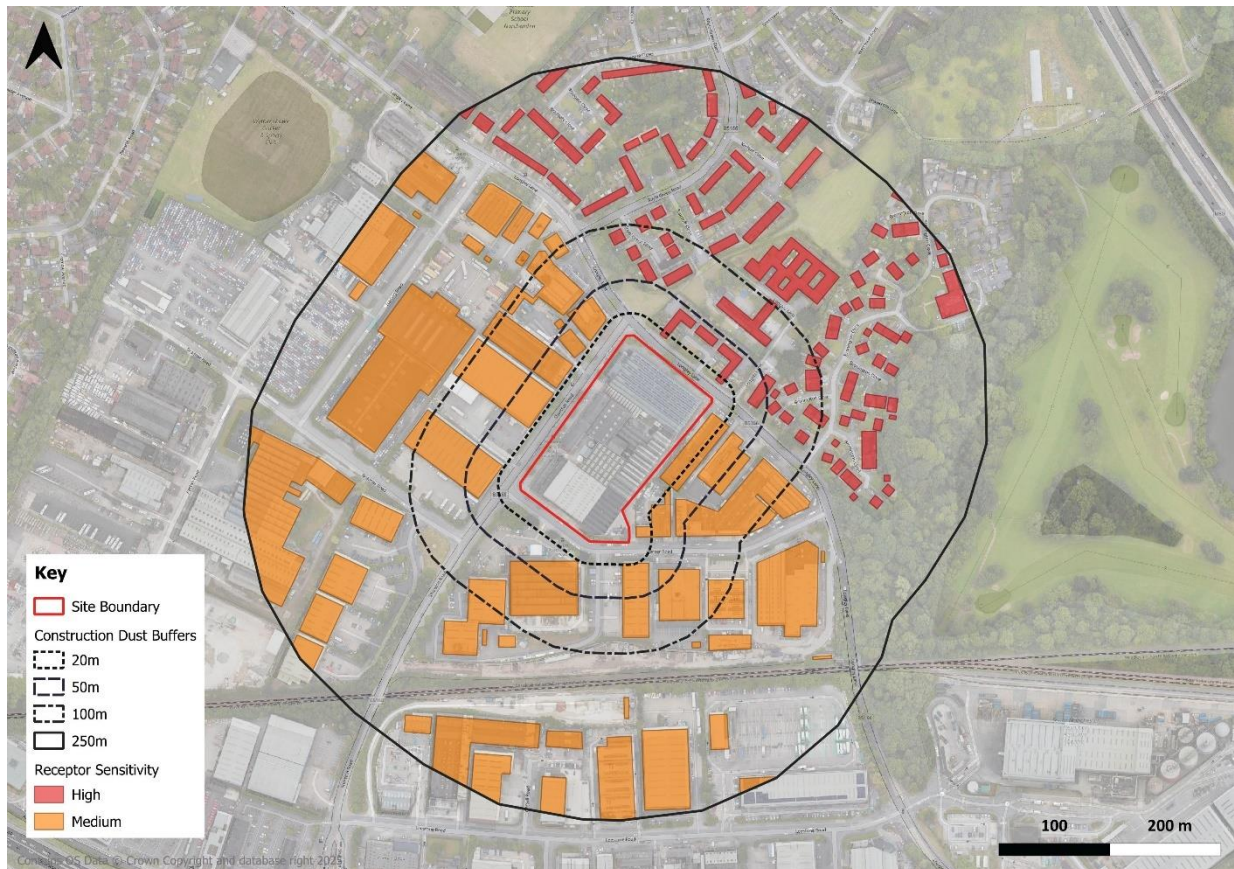


Figure 3: Construction Phase Receptors

5.3.1 Dust Soiling Impacts

Figure 3 illustrates there <10 high sensitivity receptors within 20m. As such, the overall sensitivity of the surrounding area to nuisance dust soiling effects during earthworks and construction, according to IAQM guidance, is defined as **'Medium'**.

The sensitivity for Trackout is assessed where receptors are located within 50m of Trackout routes up to 250m from the Site. All potential Trackout routes have been considered. There are more than 10 high-sensitivity receptors within 20m of potential Trackout routes from the Site and as such, the sensitivity to dust soiling impacts from Trackout is defined as **'High'**.

5.3.2 Human Health Impacts

Defra mapped background predictions (Table 4) show that annual mean concentrations of PM₁₀ are not likely to exceed 24 µg/m³ in the vicinity of the Site based on 2025 estimates. According to IAQM guidance, where PM₁₀ concentrations are <24 µg/m³ and there are less than 100 high sensitivity receptors within 20m of construction works, the overall sensitivity of the surrounding area to human health impacts is defined as **'Low'** for Earthworks, Construction and Trackout.



5.3.3 Summary of Area Sensitivity

The sensitivity of the surrounding area for the potential impacts discussed above is summarised in Table 7 below.

Table 7: Sensitivity of Local Area

Potential Impact	Sensitivity of Surrounding Area		
	Earthworks	Construction	Trackout
Dust Soiling	Medium	Medium	High
Human Health	Low	Low	Low

5.4 Risk of impacts

Using the methodology prescribed in the IAQM guidance, the overall risk of impacts can be defined by combining the sensitivity of the area with the potential dust emission magnitude of each stage of the construction phase as described above.

Table 8 below provides a summary of the construction dust risk assessment. Overall, the Proposed Development is **Medium Risk** for nuisance dust soiling effects and **Low Risk** for PM₁₀ health effect, in the absence of mitigation.

Table 8: Risk of Adverse Impacts During Construction Phase

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



6 Exposure Assessment

Due to the nature of the Proposed Development, only the short term AQALs apply. A qualitative exposure assessment below assesses the risk of exceedance of the relevant AQALs at the Site.

The data provided in Section 4 illustrates:

- Annual mean 2025 background concentrations of NO₂, PM₁₀ and PM_{2.5} are predicted to be below the AQALs by 64%, 68% and 64% respectively, with a forecasted declining trend;
- The background 2025 annual mean PM₁₀ concentration is <32 µg/m³, which is the annual mean concentration at which an exceedance of the 24-hour objective is likely in England¹³. On this basis, exceedance of the 24-hour PM₁₀ AQAL at the Site is considered unlikely.
- The Proposed Development is not located within 20m of roads expected to experience pollutant concentrations at risk of exceeding or above AQALs (determined by Defra's PCM model), and,
- The closest local passive 2023 monitoring data have been below 60µg/m³, indicating the 1-hour objective has not been exceeded at these monitoring locations in reported years.

From the evidence presented in this Section, and the data presented in Section 4, it is concluded that the risk of exceedance of the relevant AQALs at the Site is low, and future occupants of the Proposed Development will not be introduced into an area of existing poor air quality.



7 Mitigation Measures

7.1 Construction Phase

The qualitative construction dust risk assessment shows that the works are **Medium Risk** for adverse impacts during construction, in the absence of mitigation.

To effectively reduce the risk of impacts to Negligible, appropriate mitigation measures should be adopted. The IAQM's highly recommended mitigation measures for Medium-Risk sites are provided at Appendix B of this report. Implementing these measures, such as within a Construction Environment Management Plan (CEMP), should effectively reduce the risk of impacts to Negligible during the construction phase.

7.2 Operational Phase

7.2.1 Electric Vehicle Charging Infrastructure

From the 15th June 2022 onwards, Approved Document S 2021²⁵ came into force, which states;

"Where a new building which is not a residential building or a mixed-use building has more than 10 parking spaces—

(a) one of those parking spaces must have access to one electric vehicle charge point; and

(b) cable routes for electric vehicle charge points must be installed in a minimum of one fifth of the total number of remaining parking spaces."

7.2.2 Travel Plan Measures

The measures outlined in the Travel Plan (TP)²⁶, provided by the Transport Consultants, Sweco, will seek to encourage sustainable modes of transport and discourage the use of car travel. Measures within the TP include:

- Journey planning advice for staff;
- Walking, cycling and public transport routes displayed on notice boards;
- Changing and locker facilities for staff;
- Cycle to work scheme; and
- 10 car share spaces to encourage car sharing. This is specifically useful for staff who might work outside of usual work patterns when sustainable travel is not an option.

²⁵ The Building Regulations 2010, Approved Document S: Infrastructure for the charging of electric vehicles, HM Government, 15 June 2022.

²⁶ Interim Travel Plan, Trade City Sharston, Sweco, August 2025, V01



These measures provide an opportunity to promote and establish sustainable modes of transport which will help to reduce potential air quality impacts.



8 Discussion and Conclusion

Stantec were commissioned by Kier Sharston Limited to prepare an AQA for the proposed industrial and logistics development at Former Electrium Sales Ltd Site, 1934 Sharston Road, Wythenshawe.

Modelled UK-AIR background concentrations, and local air quality monitoring data have been used to establish baseline air quality at the Site and surrounding locale. Predicted background concentrations of NO₂, PM₁₀ and PM_{2.5} at the Site and surrounding locale are all below the relevant AQALs. Local air quality monitoring has shown exceedances of the annual mean AQAL for NO₂ in recent years, however the monitoring sites are located adjacent to the M56 and within the GM AQMA and therefore not considered representative of conditions at the Site.

A qualitative construction dust risk assessment has been undertaken in line with IAQM guidance¹³. Through implementation of appropriate mitigation measures as outlined at Appendix B of this report, it is expected that the release of dust would be effectively controlled and mitigated, with residual effects considered to be 'not significant'. All dust impacts are temporary and short-term in nature.

Operational phase traffic has been screened against the EPUK & IAQM guidance¹², and it has been determined that in line with this guidance detailed dispersion modelling assessment of potential air quality impacts is not required. In line with EPUK & IAQM guidance it is expected that air quality impacts should be negligible, as the guidance states:

"If none of the criteria are met, then there should be no requirement to carry out an air quality assessment for the impact of the development on the local area, and the impacts can be considered as having an insignificant effect".

A qualitative exposure assessment has also been undertaken. This shows that the Proposed Development is not expected to introduce sensitive use to an area of exceedance of relevant AQALs. Therefore, the Site is assessed to be acceptable for its proposed use, in air quality terms.

From the evidence presented, the Proposed Development is expected to comply with all relevant air quality policy. As such, air quality should not pose any significant obstacles to the planning process



Appendix A Meteorological Data

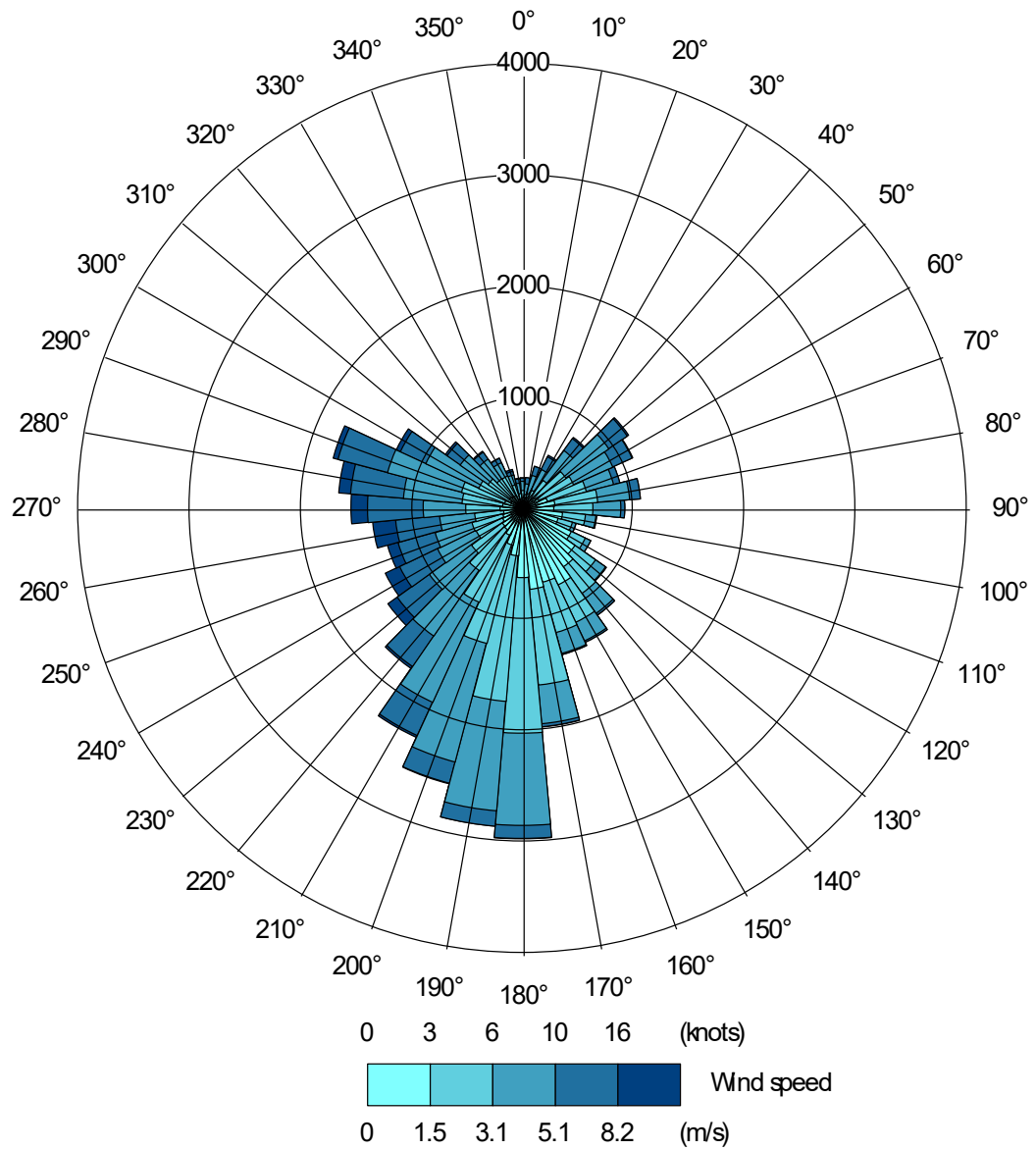


Figure 4 Wind Rose Manchester Airport 2020 – 2024



Appendix B Construction Dust Mitigation

In order to mitigate the worst-case dust impacts the following general mitigation measures are highly recommended by the IAQM for Medium Risk construction sites.

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
- 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. In London additional measures may be required to ensure compliance with the Mayor of London's guidance. The DMP may include monitoring of dust deposition, dust flux, realtime PM₁₀ 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.

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.
- Agree dust deposition, dust flux, or real-time PM₁₀ continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction.

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.
- Avoid site runoff of water or mud.
- Keep site fencing, barriers and scaffolding clean using wet methods.



- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.
- Cover, seed or fence stockpiles to prevent wind whipping.

Operating vehicle / machinery and sustainable travel

- Ensure all vehicles switch off engines when stationary - no idling vehicles.
- All construction plant and equipment should be maintained in good working order and not left running when not in use.
- Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.

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.

Waste management

- No bonfires and burning of waste materials.

Measures Specific to Earthworks

- There are no Highly Recommended earthworks measures for Medium Risk Sites

Measures Specific to Construction

- 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.

Measures Specific to 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 continuously in 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.



With every community, we redefine what's possible.



Stantec is a global leader in sustainable engineering, architecture, and environmental consulting. The diverse perspectives of our partners and interested parties drive us to think beyond what's previously been done on critical issues like climate change, digital transformation, and future-proofing our cities and infrastructure. We innovate at the intersection of community, creativity, and client relationships to advance communities everywhere, so that together we can redefine what's possible.

Stantec UK Limited
100 Barbirolli Square
Manchester
M2 3PW
UNITED KINGDOM
stantec.com