



AIR QUALITY ASSESSMENT

FOR

**LAND INCORPORATING 1A STANLEY STREET, 3-5 OGDEN LANE AND
1292 ASHTON OLD ROAD, MANCHESTER**

AQ75227

26/05/2022

Prepared For

Selassie Akua

Sterling Investment Projects Ltd on behalf of
ABP Openshaw Homes Ltd
121 Tottenham Lane,
Crouch End.
London
N8 9BJ

Prepared By

Brendan McCormack

Ensafe Consultants
Unit 9,
Orbital 24,
Oldham Street,
Denton,
Manchester
M34 3SU

DISTRIBUTION LIST

Issued To	Title / Company / Location
Selassie Akua	Sterling Investment Projects Limited

QUALITY ASSURANCE

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Date	26/05/2022		
Prepared By	Brendan McCormack		
Job Title	Undergraduate Air Quality Consultant		
Signature			
Checked By	Lewis Ellison		
Job Title	Senior Air Quality Consultant		
Signature			
Authorised By	Josh Jones		
Job Title	Senior Air Quality Consultant		
Signature			
Project Number	AQ75227		

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EXECUTIVE SUMMARY

Ensafe Consultants were commissioned by ABP Openshaw Homes Limited to undertake an Air Quality Assessment in support of a proposed residential development at the Land Incorporating 1a Stanley Street, 3-5 Ogden Lane and 1292 Ashton Old Road, Manchester.

The proposals comprises of the development of ground floor commercial land use, with above residential properties, alongside associated infrastructure and parking.

The application site is located within an area identified by the Manchester City Council as experiencing elevated pollutant concentrations. Subsequently, the Proposed Development has potential to introduce future site users to poor air quality as well as, to cause impacts during the construction and operational phases. An Air Quality Assessment is therefore required to determine the baseline conditions at the site, assess site suitability for the proposed end-use and consider effects as a result of the development.

Potential construction phase air quality impacts from fugitive dust emissions were assessed as a result of demolition, earthworks, construction and trackout activities. It is considered that the use of good practice control measures would provide suitable mitigation for a development of this size and nature and reduce potential impacts to an acceptable level.

Dispersion modelling was undertaken in order to predict annual mean pollutant concentrations across the application site to determine exposure risk to future occupiers. Results were subsequently verified using local monitoring data provided by Manchester City Council.

The dispersion modelling results indicated that annual mean pollutant concentrations across the application site were below the relevant air quality objectives at proposed sensitive locations.

The site is therefore considered suitable for proposed end use without the implementation of protective mitigation techniques.

At the time of writing, an assessment could not be undertaken using the EPUK and IAQM screening criteria to determine the potential for vehicle trips generated by the Proposed Development to affect local air quality as predicted traffic counts were not available.

Based on the assessment results the site is considered suitable for the proposed end use and complies with the MCC Local Plan and National Planning Policy Framework.

1.0 INTRODUCTION

1.1 Background

Ensafe Consultants has been commissioned by ABP Openshaw Homes Ltd, hereafter referred to as “the Client” to undertake an Air Quality Assessment in support of a proposed development, comprising of the construction of residential and commercial properties alongside associated infrastructure and parking, herein after referred to as the “Proposed Development”.

1.2 Site Location and Context

The application site is located at the land incorporating 1a Stanley Street, 3-5 Ogden Lane and 1292 Ashton Old Road, Manchester at approximate National Grid Reference (NGR) 389240, 397330. Reference should be made to Figure 1 within Appendix A for a location plan.

The application site is located within the Greater Manchester Combined Authority (GMCA) Air Quality Management Area (AQMA), which has been declared due to exceedances of the annual mean Air Quality Objective (AQO) for nitrogen dioxide (NO₂). Subsequently, the Proposed Development has the potential to introduce future residential occupants into an area of elevated NO₂ and particulate matter (PM₁₀ and PM_{2.5}) concentrations, as well as to cause impacts at sensitive receptor locations during the construction and operational phases.

An Air Quality Assessment has therefore been produced to quantify annual mean NO₂, PM₁₀ and PM_{2.5} concentrations across the site to consider suitability for the proposed end-use, and to assess potential impacts as a result of the development. The assessment will be undertaken in accordance with the requirements of the National Planning Policy Framework (NPPF) and the MCC Local Planning Policy.

1.3 Limitations

This report has been produced in accordance with Ensaf Consultants standard terms of engagement. Ensaf Consultants has prepared this report solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from Ensaf Consultants; a charge may be levied against such approval.

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2.0 LEGISLATION, GUIDANCE AND POLICY

The following legislation, guidance and policy will be considered and adhered to during the preparation of the Air Quality Assessment:

- European Union (EU) Directive 2008/50/EC;
- The NPPF, updated on 20th July 2021;
- The National Planning Practice Guidance (NPPG), relevant chapters produced on 1st November 2019;
- Section 82 of the Environment Act (Part IV), updated 9th November 2021;
- The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, Department for Environment, Food and Rural Affairs (DEFRA), 2007¹;
- The Air Quality Standards (Amendment) Regulations (2016);
- Local Air Quality Management Technical Guidance 2016 LAQM.TG(16), DEFRA, April 2021²;
- Guidance on the Assessment of Dust from Demolition and Construction, Institute of Air Quality Management (IAQM), v1.1, June 2016³;
- Land-Use Planning and Development Control: Planning for Air Quality, Environmental Protection UK (EPUK) and IAQM, January 2017⁴;
- MCC Air Quality and Planning, Technical Guidance, February 2022⁵; and
- Manchester Local Development Framework (LDF) Core Strategy 2012-2027, July 2012; and
- Greater Manchester Air Quality Action Plan 2016–2021,

2.1 UK Legislation and Guidance

The Air Quality Standards (Amendment) Regulations (2016) came into force on 31st December 2016. These Regulations amend the Air Quality Standards Regulations 2010 and transpose the EU Directive 2008/50/EC into UK law. Air Quality Limit Values (AQLVs) were published in these regulations for 7 pollutants, as well as Target Values for an additional 6 pollutants.

Part IV of the Environment Act (2021) requires UK government to produce a national Air Quality Strategy (AQS) which contains standards, objectives and measures for improving ambient air quality. The most recent AQS was produced by DEFRA and published in July 2007¹. The AQS sets out Air Quality Objectives (AQOs) that are maximum ambient pollutant concentrations that are not to be exceeded either without exception or with a permitted number of exceedances over a specified timescale. These are generally in line with the AQLVs, although the requirements for compliance vary slightly.

Table 1 presents the AQOs for pollutants considered within this assessment.

Table 1: Air Quality Objectives

Pollutant	Air Quality Objectives	
	Concentration (µg/m ³)	Averaging Periods
NO ₂	40	Annual mean
	200	1-hour mean; not to be exceeded more than 18 times a year
PM ₁₀	40	Annual mean
	50	24-hour mean; not to be exceeded more than 35 times a year
PM _{2.5}	25	Annual mean

1 The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, DEFRA, 2007

2 Local Air Quality Management Technical Guidance 2016 LAQM.TG(16), DEFRA, 2021

3 Guidance on the Assessment of Dust from Demolition and Construction, Institute of Air Quality Management, 2016

4 Land-Use Planning and Development Control: Planning for Air Quality, EPUK and IAQM, 2017

5 MCC Air Quality and Planning, Technical Guidance, 2022

Table 2 summarises the advice provided in DEFRA guidance LAQM.TG(16)² on where the AQOs for pollutants considered within this report apply.

Table 2: Examples of Where the Air Quality Objectives Apply

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

The results of the dispersion modelling assessment will also be compared against the relevant AQOs detailed in Table 1 to determine significance.

2.2 Local Planning Policy

2.2.1 Manchester City Council Local Plan

The Manchester Local Plan guides development within Manchester A review of the Core Strategy indicated the following policies in relation to air quality that are relevant to this assessment. Manchester's Core Strategy⁶ was adopted in 2012 and sets out the long term strategic policies for Manchester's future development.

- Policy EN16 – Air Quality**

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

⁶ https://secure.manchester.gov.uk/info/200074/planning/6572/local_plan

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.

Reference has been made to this policy during the undertaking of this Air Quality Assessment by assessing the impacts of road vehicle exhaust emissions on future site users and on nearby existing sensitive locations.

2.2.2 Greater Manchester Air Quality Action Plan

The Greater Manchester Air Quality Action Plan (AQAP)⁷ has involved a review of the strategies, policies and plans which tackle or are in some way related to air quality, to develop a clear, robust and meaningful set of actions which will deliver real changes in terms of air quality, whilst supporting the sustainable economic growth of the region.

The primary objectives of the AQAP are to improve air quality across Greater Manchester and to embed low-emission behaviours into the culture of our organisations and lifestyles by 2025, whilst supporting the UK Government in meeting all EU thresholds for key air pollutants. The Plan identifies 'Key Priority Areas' which are generally locations near to major roads and heavily trafficked areas in Manchester city centre, and other major urban centres across the other nine districts.

The AQAP comprises a single document including actions that will be ratified by Transport for Greater Manchester (TfGM) and district authorities to tackle air quality in Key Priority Areas, whilst supporting the sustainable economic growth of the region. This plan will allow councils to carry out their statutory duties under Part IV of the Environment Act 1995, as its implementation will help mandatory EU limit values to be met. Consideration to the action plan has been made throughout the preparation assessment.

Reference has been made to the AQAP during the undertaking of this Air Quality Assessment by assessing pollutant concentrations across the development site, and quantifying impacts associated with the construction and operation of the Proposed Development.

⁷ Greater Manchester Air Quality Action Plan 2016–2021

3.0 METHODOLOGY

There is the potential for the Proposed Development to expose future site users to elevated NO₂, PM₁₀ and PM_{2.5} concentrations, as well as to cause impacts at sensitive locations during the construction and operational phases.

This has been assessed in accordance with the following methodology, as agreed with the Environmental Health Officer (EHO) at MCC on 30/03/2022.

3.1 Construction Phase Assessment

There is the potential for fugitive dust emissions to occur as a result of construction phase activities. These have been assessed in accordance with the methodology outlined within the IAQM document 'Guidance on the Assessment of Dust from Demolition and Construction'³.

Reference should be made to Appendix C for details of the relevant IAQM construction phase assessment criteria, which were utilised in conjunction with site specific information

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 potential for dust emissions was assessed for each activity that is likely to take place and considered three separate dust effects:

- Annoyance due to dust soiling;
- Harm to ecological receptors; and
- The risk of health effects due to a significant increase in exposure to PM₁₀ and PM_{2.5}

A desk top survey will be undertaken to identify human and ecological receptors within the relevant assessment buffers specified by the IAQM guidance³. Should sensitive receptors not be present within the relevant distances then negligible impacts would be expected and further assessment is not necessary.

Following the identification of sensitive receptors, a site is then allocated a risk category which is assigned to each activity, based on the scale and nature of the works, as well as the sensitivity of the area to dust impacts.

The assigned magnitude and sensitivity will then determine the overall risk and appropriate mitigation measures to be employed during construction phase activities.

The IAQM guidance³ is provided in Appendix C, with the details of the assessor's qualifications and experience. provided in Appendix D.

3.2 Operational Phase Assessment

3.2.1 Future Exposure

The Proposed Development is located within the GMCA AQMA. As such, the proposals have the potential to introduce new receptors into an area of existing poor air quality, as well as to cause impacts upon existing pollution levels at nearby sensitive receptors within the AQMA..

Detailed dispersion modelling was therefore undertaken to quantify NO₂, PM₁₀ and PM_{2.5} pollutant exposure across the site and determine suitability for the proposed use. The following modelling scenarios were utilised during the assessment:

- 2019 as baseline year for verification against latest ratified data;
- Opening year do-something (DS) (predicted traffic flows in 2024 should the proposals be completed)

In light of expected emission improvements to the national vehicle fleet guided by government policy, it would be unrealistic not to assume a reduction to vehicle emission factors in future years, given the anticipated development year of 2024.

The 2024 scenario assumes an emission drop off based on assumptions provided by the Emission Factor Tool Kit (Eft v11.0) supported by the uptake of low emission vehicles and government incentives and targets concerning fleet proportions by 2030.

The results of the dispersion modelling assessment will also be compared against the relevant AQOs detailed in Table 1 to determine significance. Full details of data used for the modelling assessment are presented in Appendix B of this report.

3.2.2 Road Vehicle Exhaust Impact Assessment

Based on the details of the Proposed Development and anticipated trip generation a screening assessment in accordance with the EPUK and IAQM guidance⁴ was determined a suitable assessment approach. The assessment will determine road traffic exhaust and combustion emission impacts associated with the Proposed Development, and confirm the requirement for detailed assessment work. The EPUK and IAQM document states the following criteria to help establish when an air quality assessment is likely to be considered necessary:

- Proposals that will cause a change in Light Duty Vehicle (LDV) flows of more than 100 Annual Average Daily Traffic (AADT) within or adjacent to an AQMA or more than 500 elsewhere;
- Proposals that will cause a change in Heavy Duty Vehicle (HDV) flows of more than 25 AADT within or adjacent to an AQMA or more than 100 elsewhere;
- Proposals which include either a centralised plant using biofuel, a combustion plant with single or thermal input >300KWh or a standby emergency generator associated with a centralised energy centre; and
- Proposals which include combustion processes of any size.

Should the above criteria not be met, the EPUK and IAQM document considers air quality impacts associated with the scheme to be not significant and no further assessment is required. Conversely, should the criterion be exceeded it may be deemed necessary that further assessment is required.

4.0 BASELINE

Existing air quality conditions in the vicinity of the application site were identified in order to provide a baseline for assessment. These are detailed in the following sections.

4.1 Local Air Quality Management

As required by the Environment Act (2021), GMCA, of which MCC is part of, has undertaken review and assessment of air quality within their area of administration. This process has indicated that annual mean concentrations of NO₂ are above the AQO within their administration. As such, one AQMA has been declared, being described as:

- GMCA AQMA - An Area covering the 10 districts of Greater Manchester, including arterial routes, district centres, and airpor

The application site is located within GMCA AQMA. As such, there is potential for the Proposed Development to introduce future site users into an area of elevated annual mean NO₂ concentrations, and to cause air quality impacts within this sensitive area during the construction and operational phases. This has been considered within this report.

MCC has concluded that concentrations of all other pollutants considered within the AQS are currently below the relevant AQOs and as such no further AQMAs have been designated.

4.2 Air Quality Monitoring

Monitoring of pollutant concentrations is undertaken by SMBC using continuous and passive methods throughout their areas of administration. A review of MCC's most recent Air Quality Monitoring Data⁶ indicated that there is currently 3 automatic analysers operated by MCC, the closest of which is Manchester Oxford Road (kerbside), located approximately 5km west of the site at NGR: 384233, 397287. Due to the distance between the development site and automatic analyser, similar pollutant concentrations would not be expected and as such, this monitoring station has not been considered further within this assessment.

MCC monitor NO₂ concentrations across the borough using passive diffusion tubes. A review of the most recent air quality monitoring data indicated 2 diffusion tubes located within the vicinity of the application site, presented in Table 3.

Table 3: Diffusion Tube Monitoring Results

ID	Site Name	Type	NGR (m)		Dist' to Site (m)	Annual Mean Concentration (µg/m ³)		
			X	Y		2017	2018	2019
MA28NO	Ashton Old Road	Roadside	387951	397430	1,295	38.5	37.1	36.1
MA73NO	Hyde Road	Roadside	388604	396042	1,441	39.0	38.7	38.0

As indicated in Table 3, annual mean concentrations are below all relevant AQOs at all nearby diffusion tube locations.

Reference should be made to Figure 2 within Appendix A for a graphical representation of the monitoring locations.

4.3 Background Pollutant Concentrations

The total concentration of a pollutant is comprised of explicit local emission sources (such as roads and industrial sources) and the background component. The background component consists of indeterminate sources which are

transported into an area from further away by meteorological conditions. Background pollutant concentrations are therefore the ambient level of pollution that is not affected by local sources of pollution.

In reality, it is not usually practical to obtain a true representation of background levels in urban areas due to corruption by local sources; background levels used in assessments may contain a mixture of both sources.

Predictions of background pollutant concentrations on a 1km by 1km grid basis have been produced by DEFRA for the entire of the UK to assist LAs in their Review and Assessment of air quality. The Proposed Development site is located across grid square:

- NGR: 389500, 397500

Data for this location was downloaded from the DEFRA website⁸. For the purpose of this assessment, background concentrations are summarised in Table 4 for the verification year (2019) and the predicted development opening year (2024).

Table 4: Predicted Background Pollutant Concentrations

Pollutant	Predicted Background Concentration ($\mu\text{g}/\text{m}^3$)	
	2019	2024
NO _x	18.63	20.02
NO ₂	27.28	14.57
PM ₁₀	11.73	12.07
PM _{2.5}	8.24	8.35

As indicated in Table 4, background pollutant concentrations of NO₂, PM₁₀ and PM_{2.5} are below the relevant AQOs detailed in Table 1.

4.4 Sensitive Receptors

A sensitive receptor is defined as any location which may be affected by changes in air quality as a result of a development. These have been defined for construction dust impacts in the following Sections.

4.4.1 Construction Phase Sensitive Receptors

There are no nationally or European designated ecological receptors within 50m of the Site boundary, or within 50m from a route used by construction vehicles on the public highway (up to 500m from the Site entrance). Therefore, the risk of dust effects at a nationally or European designated ecological receptor site from construction impacts have not been considered further in this assessment.

Human receptors sensitive to potential dust impacts during, demolition, earthworks and construction were identified from a desk-top study of the area up to 350m from the Proposed Development boundary. These are summarised in Table 5.

Table 5: Demolition, Earthworks and Construction Dust Sensitive Receptors

Distance from Site Boundary (m)	Approximate Number of Human Receptors
Less than 20	10 - 100
20 – 50	10 - 100

⁸ <https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2018>

Distance from Site Boundary (m)	Approximate Number of Human Receptors
50 – 100	More than 100
100 – 350	More than 100

Reference should be made to Figure 3 within Appendix A for a graphical representation of demolition, earthworks, and construction dust buffer zones.

Receptors sensitive to potential dust impacts from trackout were identified from a desk-top study of the area up to 50m from the road network within 500m of the site access route. These are summarised in Table 6. The exact construction vehicle access routes were not available for the purpose of this assessment as they will depend on sourcing of materials. This is likely to be decided by the contractor. However, it was assumed that construction traffic would access the Proposed Development via Ashton Road and Ogden Lane, to ensure a worst case trackout assessment is undertaken.

Table 6: Trackout Dust Sensitive Receptors

Distance from Site Boundary (m)	Approximate Number of Human Receptors
Less than 20	More than 100
20 – 50	More than 100

Reference should be made to Figure 4 within Appendix A for a graphical representation of trackout dust buffer zones.

A number of additional factors have been considered when determining the sensitivity of the surrounding area. These are summarised in Table 7.

Table 7: Additional Area Sensitivity Factors

Guidance	Comment
Whether there is any history of dust generating activities in the area	The site is located in a residential area. There is likely to have been a history of dust generating activities due to commuting and regeneration in the locality.
The likelihood of concurrent dust generating activity on nearby sites.	A review of the MCC Planning Portal indicated that there are several planning applications within 500m of the Proposed Development. As such, there is potential for concurrent dust generation should the construction phases of the aforementioned developments overlap.
Pre-existing screening between the source and the receptors	There is no dense vegetation present along the development boundaries. Hence, there is no level of natural protective screening in any directions.
Conclusions drawn from analysing local meteorological data which accurately represent the area: and if relevant the season during which works will take place	The wind direction is predominantly from the south of the development. As such, properties to the north of the site would be most affected by dust emissions
Conclusions drawn from local topography	The topography of the area appears to be predominantly flat. As such, there are no constraints to dust dispersion.

Guidance	Comment
Duration of the potential impact, as a receptor may become more sensitive over time	Currently the duration of the construction phase is unknown.
Any known specific receptor sensitivities which go beyond the classifications given in the document.	No specific receptor sensitivities identified during the baseline.

4.4.2 Operational Phase Sensitive Receptors

A desk top study was undertaken to identify the closest receptor locations to the application site. This indicated residential locations within close proximity to all development boundaries. There is an educational facility in vicinity of the application site and affected road networks, with the nearest education facility, St Clemant's Primary School, located approximately 161m and south east of the site, respectively.

5.0 ASSESSMENT

5.1 Construction Phase Assessment

5.1.1 Step 1 – Screening

The desk-study detailed in Section 4.4.1 identified a number of receptors with a high classification of sensitivity within 350m of the site boundary, and within 50m of the anticipated trackout routes. As such, a detailed assessment of potential dust impacts was required, and summarised in the below sections.

5.1.2 Step 2A – Magnitude

The scale and nature of the works was determined to assess the magnitude of dust arising from each construction phase activity. The determination of magnitude was based upon the criteria detailed in Appendix C, with the outcome of Step 2A is summarised below in Table 8.

Demolition

Demolition will involve the removal of the existing structures, and site clearance. The volume of buildings to be demolished is likely to be less than 20,000m³. With this considered the magnitude of potential dust emissions related to demolition activities is considered small.

Earthworks

The Proposed Development site is estimated to cover an area of less than 2500m². The magnitude of potential dust emissions related to earthwork activities is therefore considered small.

Construction

The proposals comprise the construction of 25 residential units. Given the scale of the Proposed Development the total building and infrastructure volume is less than 20,000m³. The magnitude of potential dust emissions related to construction activities is therefore considered small.

Trackout

Information on the number of HDV trips to be generated during the construction phase of the Proposed Development was not available at the time of assessment. Similarly, the surface material and unpaved road length was not known at this stage of the project. Based on the site area, it is anticipated that the unpaved road length is likely to be less than 50m. The magnitude of potential dust emissions from trackout is therefore considered small.

Table 8: Dust Emission Magnitude

Magnitude of Activities			
Demolition	Earthworks	Construction	Trackout
Small	Small	Small	Small

5.1.3 Step 2B – Sensitivity

The next step (Step 2B) is to determine the sensitivity of the surrounding area, based on general principles such as amenity and aesthetics, as well as human exposure sensitivity.

Dust Soiling

As shown in Section 4.4.1, the desk top study indicated are approximately more than 100 sensitive receptors within 350m of the Proposed Development boundary and more than 100 within 50m of the anticipated trackout routes.

Based on the assessment criteria detailed in Appendix C, the sensitivity of the receiving environment to potential dust soiling impacts was considered to be high for all construction phase activities. This is because the site is situated in a predominantly residential area and the people or property would reasonably be expected to be present here for extended periods of time.

Human Health

The annual mean concentration of PM₁₀ is 11.7µg/m³ as detailed in Section 4. Based on the receptor counts provided above, the area is considered to be of low sensitivity for demolition, earthworks, construction phase activities and medium for trackout activities.

The sensitivity of the receiving environment to specific potential dust impacts, based on the criteria detailed in Appendix C is summarised in Table 9.

Table 9: Sensitivity of the Surrounding Area

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

5.1.4 Step 2C – Risk

Both the magnitude and sensitivity factors are combined in Step 2C to determine the risk of dust impacts without the application of best practice mitigation measures.

It should be noted that the potential for impacts depends significantly on the distance between the dust generating activity and receptor location. Risk was predicted based on a worst-case scenario of works being undertaken at the site boundary closest to each sensitive area. Therefore, actual risk is likely to be lower than that predicted during the majority of the construction phase. A summary of the risk from each dust generating activity is provided in Table 10.

Table 10: Summary of Potential Unmitigated Dust Risks

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

5.1.5 Step 3 – Mitigation

The IAQM guidance³ provides a number of potential mitigation measures to reduce impacts during the construction phase. These measures have been adapted for the Proposed Development site as summarised in Table 11.

Table 11: Fugitive Dust Mitigation Measures

Issue	Control 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 • Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority.
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	• Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100 m of 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 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 & Maintaining 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 time period • Avoid site runoff of water or mud • Keep site fencing, barriers and scaffolding clean using wet methods.

Issue	Control Measure
	- 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 & Sustainable Travel	- Ensure all vehicles switch off engines when stationary - no idling vehicles. - Avoid the use of diesel- or petrol-powered 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 un- surfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate) - 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 buildings 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 operations. 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 & Construction	- Avoid scabbling (roughening of concrete surfaces) if possible - Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a

Issue	Control Measure
	particular process, in which case ensure that appropriate additional control measures are in place.
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. • Record all inspections of haul routes and any subsequent action in a site log book. • Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).

5.1.6 Step 4 – Residual Impacts

Assuming the relevant mitigation measures outlined in Table 11 are implemented, the residual effect from all dust generating activities is predicted to be negligible and therefore **not significant** in accordance with the IAQM guidance³.

5.2 Operational Phase Assessment

The assessment was undertaken in accordance with the methodology detailed in Section 3.2.

5.2.1 Future Exposure

Annual mean NO₂, PM₁₀ and PM_{2.5} concentrations were predicted across the Proposed Development for the 2024 DS scenario at a height of 1.5m to represent exposure across the ground floor level, as shown in Figures 7 to 9 within Appendix A.

Background NO₂ PM₁₀ and PM_{2.5} levels are likely to be lower at elevated heights due to increased distance from emission sources, such as roads. Therefore, predicted concentrations at heights above ground floor level are considered acceptable in regards to future exposure and have not been assessed further.

Nitrogen Dioxide (NO₂)

Predicted annual mean NO₂ concentrations across the Proposed Development site during the DS scenario are summarised in Table 12.

Table 12: Modelling Results - Annual Mean NO₂ at Proposed Development

Floor Level	Predicted 2024 Annual Mean NO ₂ Concentration (µg/m ³)
Ground (1.5m)	16.3 – 21.2

The predicted concentrations shown in Table 12 indicate that there were no exceedances of the AQO across the Proposed Development. As such, it is considered that annual mean NO₂ levels at the Proposed Development site should not be viewed as a constraint to development.

Predictions of 1-hour NO₂ concentrations were not produced as part of the dispersion modelling assessment. LAQM.(TG16)² states if annual mean NO₂ concentrations are below 60µg/m³ then it is unlikely that the 1-hour AQO will be exceeded. As such, based on the results in Table 12, it is not predicted that on-site concentrations will exceed the 1-hour mean AQO for NO₂.

Based on the results of the dispersion modelling assessment, the site is considered to be suitable for residential use without the implementation of mitigation techniques to protect future site users from elevated NO₂ concentrations.

Particulate Matter (PM₁₀ & PM_{2.5})

Predicted annual mean PM₁₀ and PM_{2.5} concentrations across the Proposed Development site during the DS scenario are summarised in Table 13.

Table 13: Modelling Results - Annual Mean PM₁₀ and PM_{2.5} at Proposed Development

Floor Level	Predicted 2024 Annual Mean Concentration (µg/m ³)	
	PM ₁₀	PM _{2.5}
Ground (1.5m)	12.4 – 13.6	8.5 – 9.2

The predicted concentrations shown in Table 13 indicate that there were no exceedances of the annual mean AQOs for PM₁₀ or PM_{2.5} throughout the modelling area. As such, it is considered that annual mean PM₁₀ or PM_{2.5} levels at the Proposed Development site should not be viewed as a constraint to development.

Based on the results of the dispersion modelling assessment, the site is considered to be suitable for proposed end use without the implementation of mitigation techniques to protect future site users from elevated PM₁₀ and PM_{2.5} concentrations.

5.2.2 Road Vehicle Exhaust Emission Impacts

Any additional vehicle movements associated with the Proposed Development will generate exhaust emissions, such as NO₂, PM₁₀ and PM_{2.5} on the local and regional road networks.

At the time of undertaking the assessment, there was no Transport Consultant appointed for this project. As such, the maximum AADT flow on the local network was not available. Therefore, further assessment may be required to assess the potential impacts on nearby sensitive receptors during the operational phase of the development.

6.0 CONCLUSION

Ensaf Consultants were commissioned by the Client to undertake an Air Quality Assessment in support of a proposed residential development at the Land Incorporating 1a Stanley Street, 3-5 Ogden Lane And 1292 Ashton Old Road, Manchester.

During the construction phase of the Proposed Development there is the potential for air quality impacts as a result of fugitive dust emissions from the site. These were assessed in accordance with the IAQM methodology. Assuming good practice dust control measures are implemented, the residual potential air quality impacts from dust generated by construction, earthworks and trackout activities was predicted to be **not significant**.

Dispersion modelling was undertaken to quantify annual mean NO₂, PM₁₀ and PM_{2.5} concentrations across the application to assess suitability for proposed use. Modelling results were subsequently verified using MCC local monitoring data.

The dispersion modelling results indicated that annual mean NO₂, PM₁₀ and PM_{2.5} concentrations across the application site were below the relevant AQOs at the proposed sensitive use.

The site is therefore considered suitable for the proposed end-use without the implementation of protective mitigation techniques to protect future amenity.

At the time of writing, an assessment could not be undertaken using the EPUK and IAQM screening criteria to determine the potential for vehicle trips generated by the Proposed Development to affect local air quality as predicted traffic counts were not available.

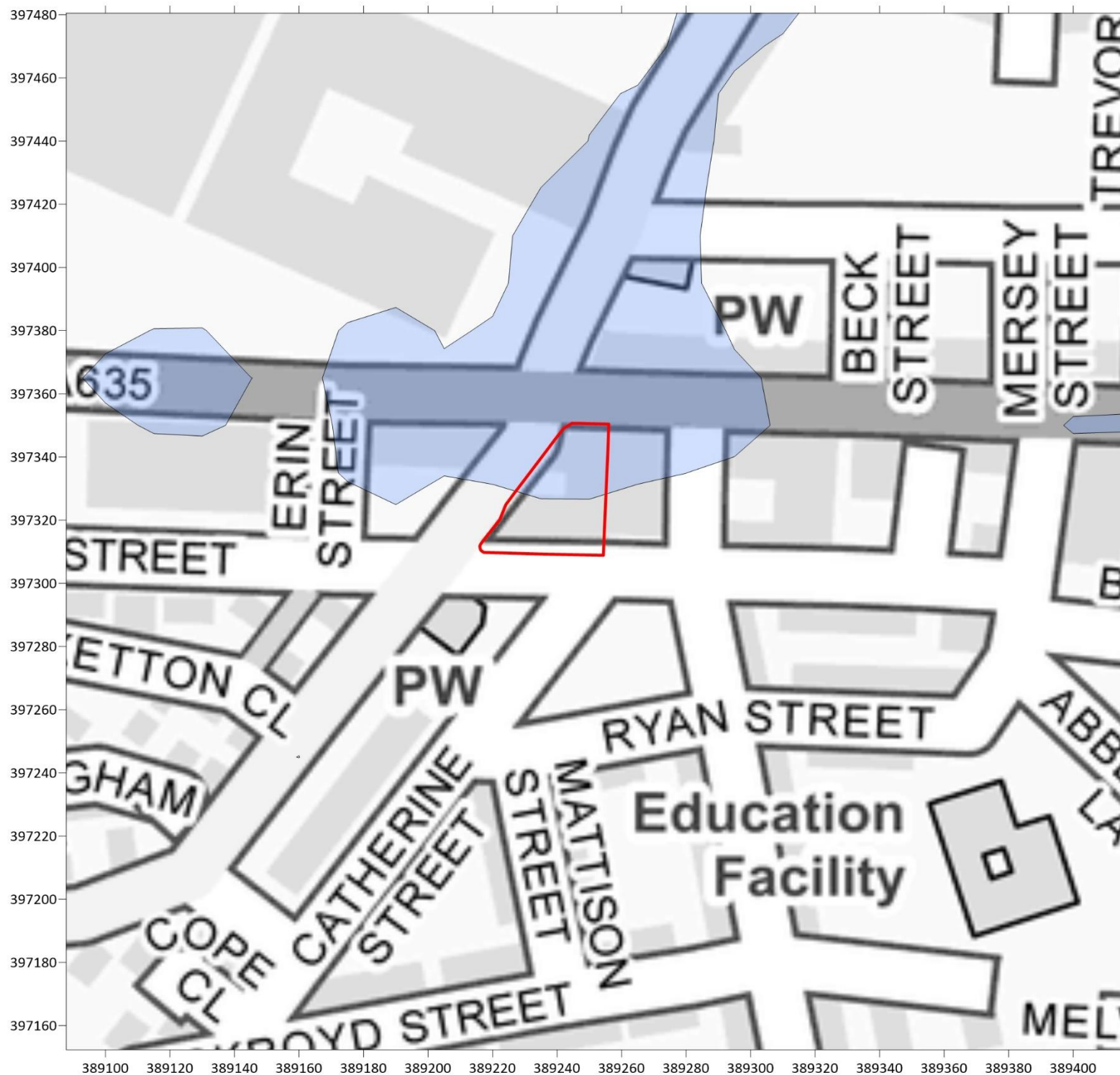
Based on the assessment results the site is considered suitable for the proposed end use and complies with the MCC Local Plan and NPPF.

7.0 ABBREVIATIONS

AADT	Annual Average Daily Traffic
ADM	Atmospheric Dispersion Modelling
AQAP	Air Quality Action Plan
AQLV	Air Quality Limit Value
AQMA	Air Quality Management Area
AQO	Air Quality Objectives
AQS	Air Quality Strategy
CERC	Cambridge Environmental Research Consultants
DEFRA	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
DS	Do Something
DMP	Dust Management Plan
EHO	Environmental Health Officer
EPUK	Environmental Protection UK
EU	European Union
GMCA	Greater Manchester Combined Authority
HDV	Heavy Duty Vehicle
IAQM	Institute of Air Quality Management
LAQM	Local Air Quality Management
LA	Local Authority
LDV	Light Duty Vehicle
MCC	Manchester City Council
NGR	National Grid Reference
NO ₂	Nitrogen dioxide
NO _x	Oxides of nitrogen
NPPF	National Planning Policy Framework
NPPG	National Planning Practice Guidance
PM _{2.5}	Particulate matter with an aerodynamic diameter of less than 2.5µm
PM ₁₀	Particulate matter with an aerodynamic diameter of less than 10µm
TEMPRO	Trip End Model Presentation Program
z ₀	Roughness Length

END OF REPORT

APPENDIX A - FIGURES



Legend
 Site Boundary
 Air Quality Management Area
Title Figure 1 Site Location
Project Land Incorporating 1A Stanley Street, 3-5 Ogden Lane and 1292 Ashton Old Road
Project Number AQ75227
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Legend

-  Site Boundary
-  Diffusion Tube Monitoring Locations

Title

Figure 2
Diffusion Tube Monitoring Locations

Project

Land Incorporating 1A Stanley Street,
3-5 Ogden Lane and 1292 Ashton Old Road

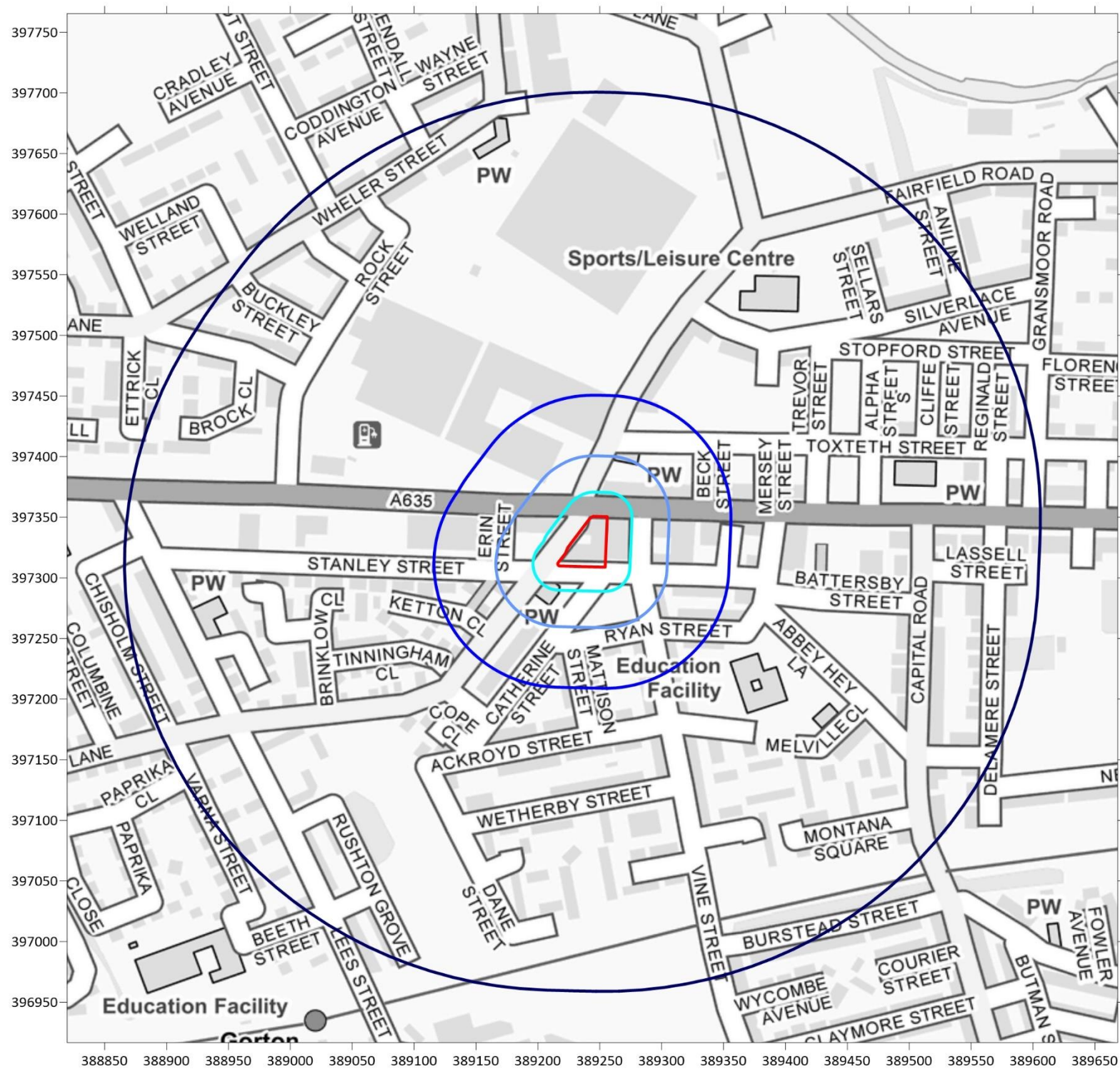
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 Site Boundary
 20m from Site Boundary
 50m from Site Boundary
 100m from Site Boundary
 350m from Site Boundary

Figure 3

Demolition, Earthworks and Construction Dust Buffer Zones

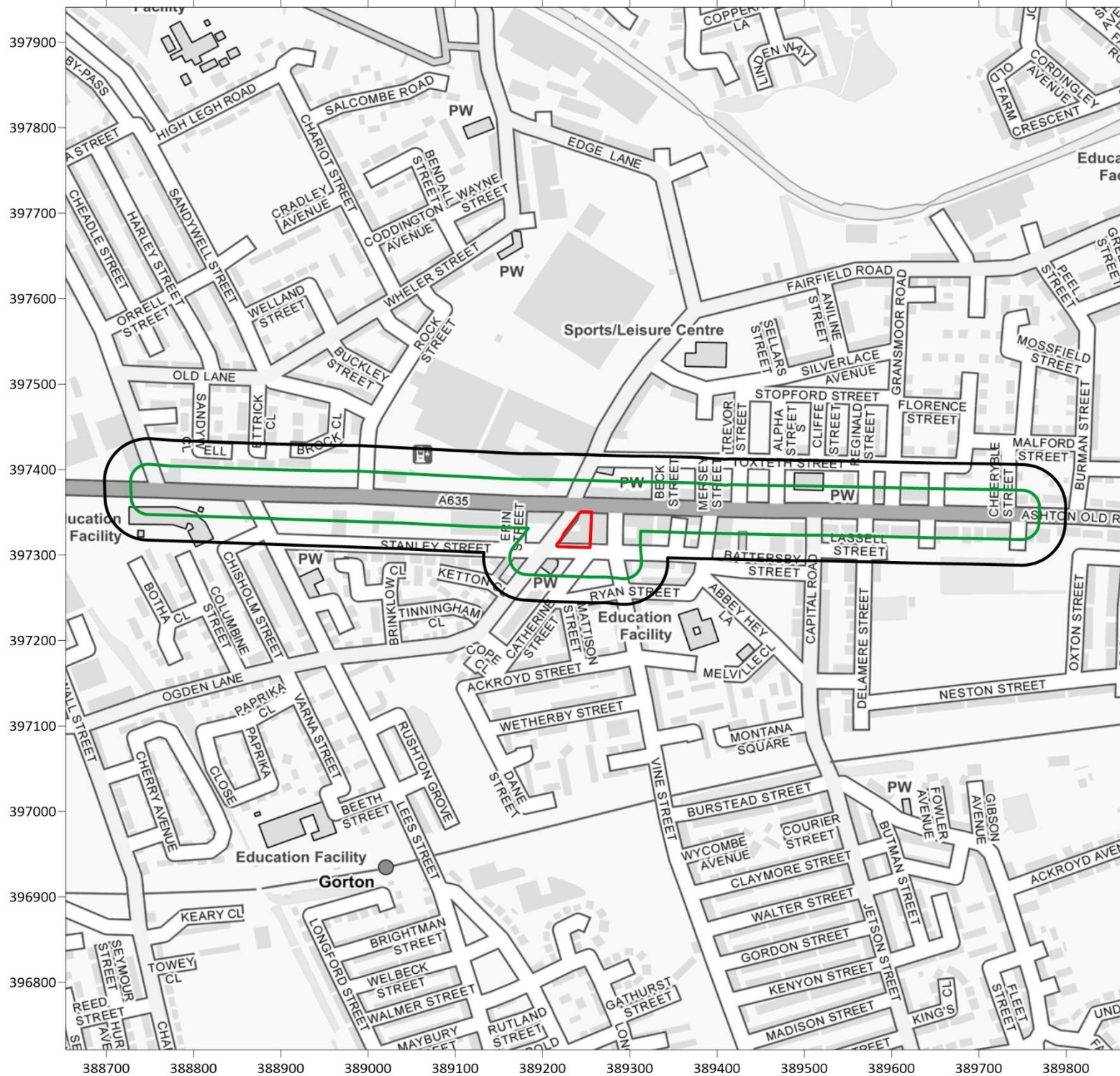
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Legend

-  Site Boundary
-  20m from Site Access Route
-  50m from Site Access Route

Title

Figure 4

Trackout Dust Buffer Zones

Project

Land Incorporating 1A Stanley Street,
3-5 Ogden Lane and 1292 Ashton Old Road

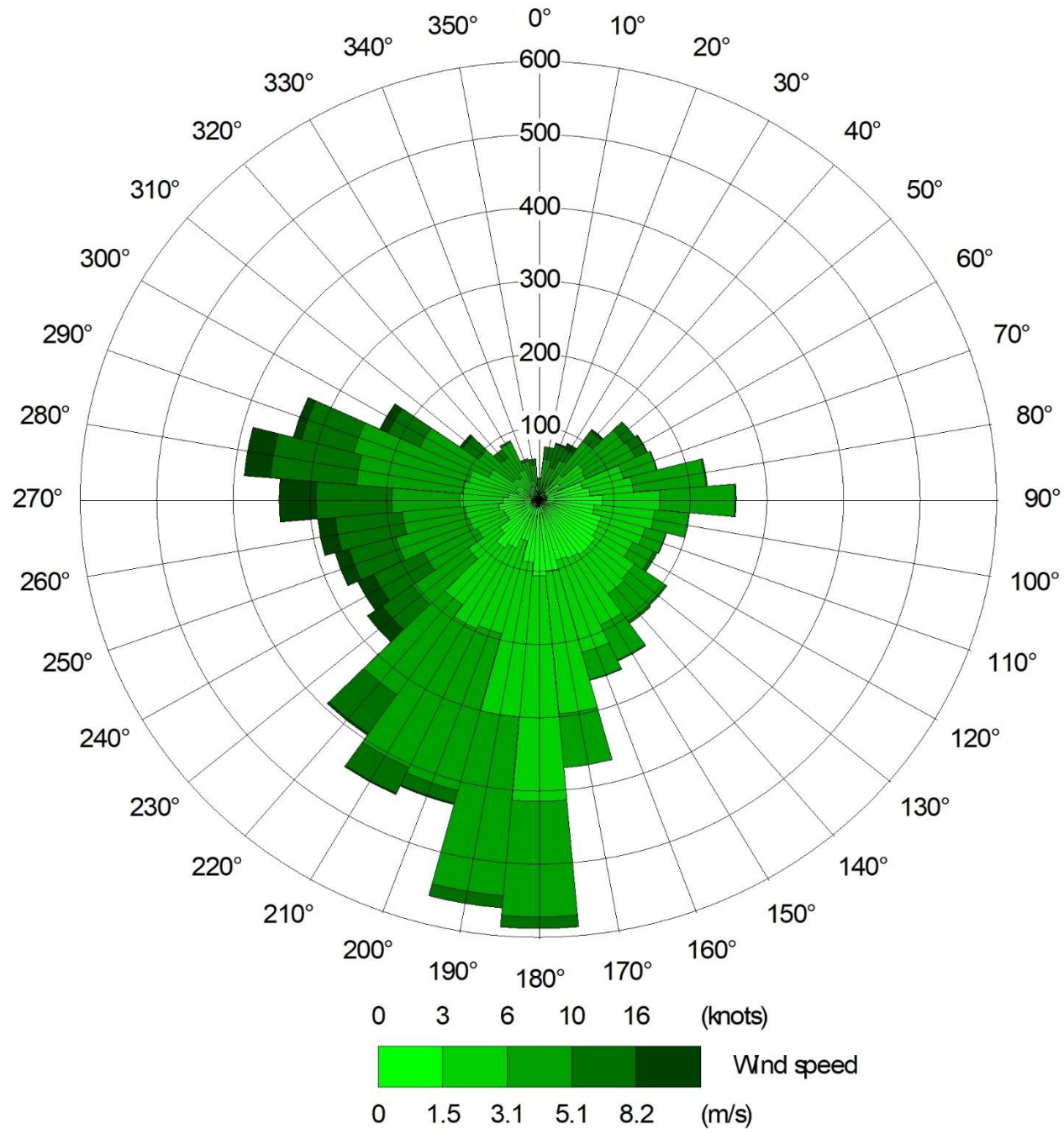
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Title
Figure 5
Wind Rose
Manchester Ringway Meteorological Station

Project
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3-5 Ogden Lane and 1292 Ashton Old Road

Project Number
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Legend

-  Site Boundary
-  Modelled Road Link
-  Cartesian Grid
-  Diffusion Tube Monitoring
-  GMCA AQMA

Title

Figure 6

ADMS-Roads Input

Project

Land Incorporating 1A Stanley Street,
3-5 Ogden Lane and 1292 Ashton Old Road

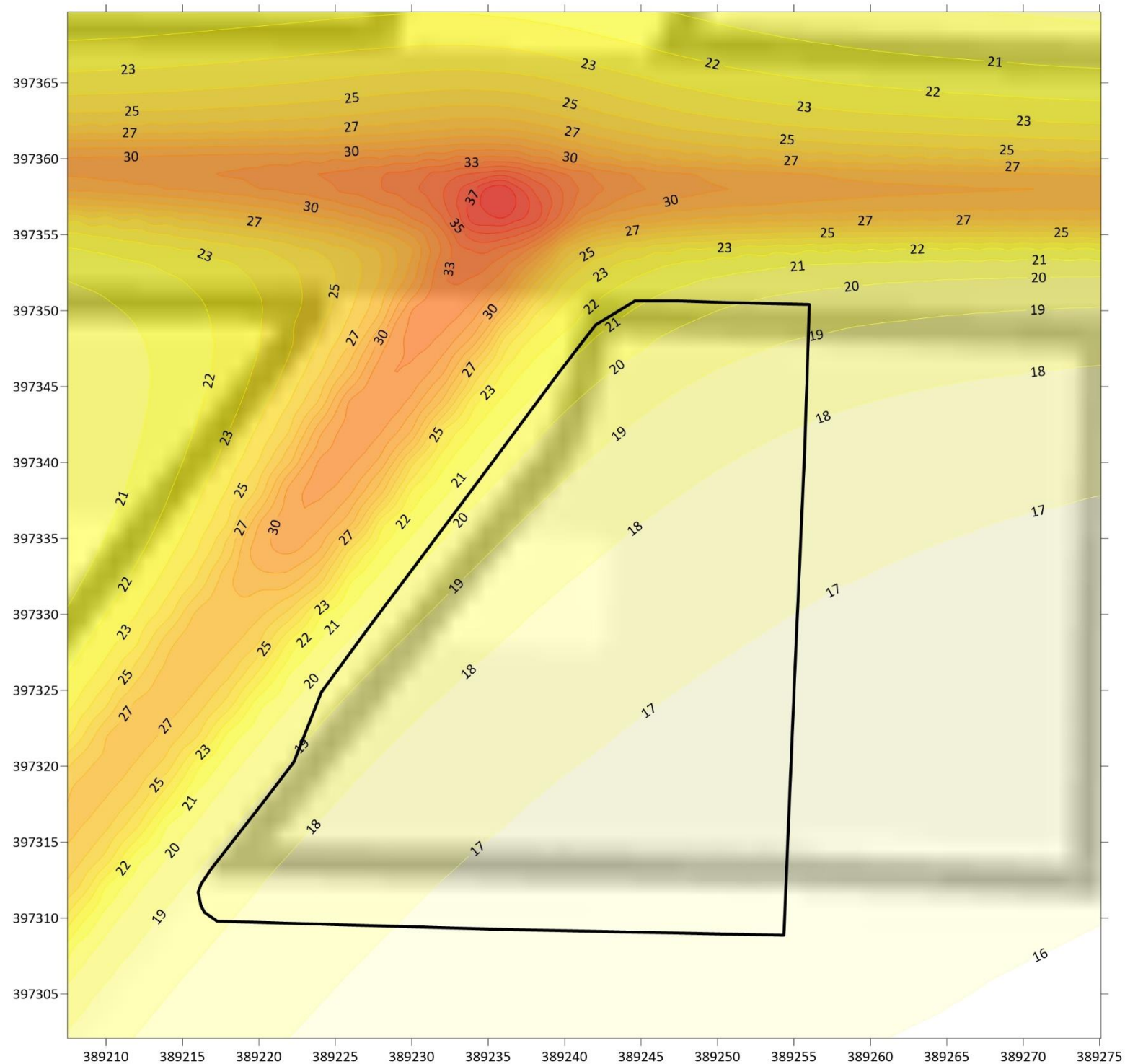
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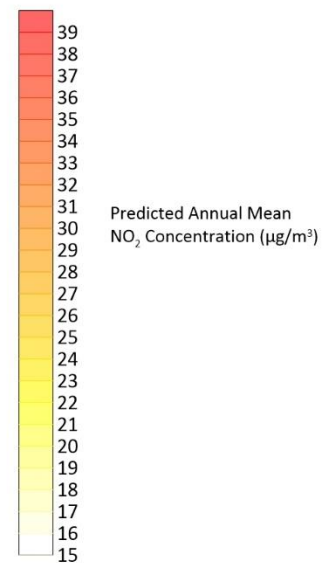


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Legend

 Site Boundary



Title

Figure 7

Predicted Annual Mean NO₂
Concentrations (µg/m³)

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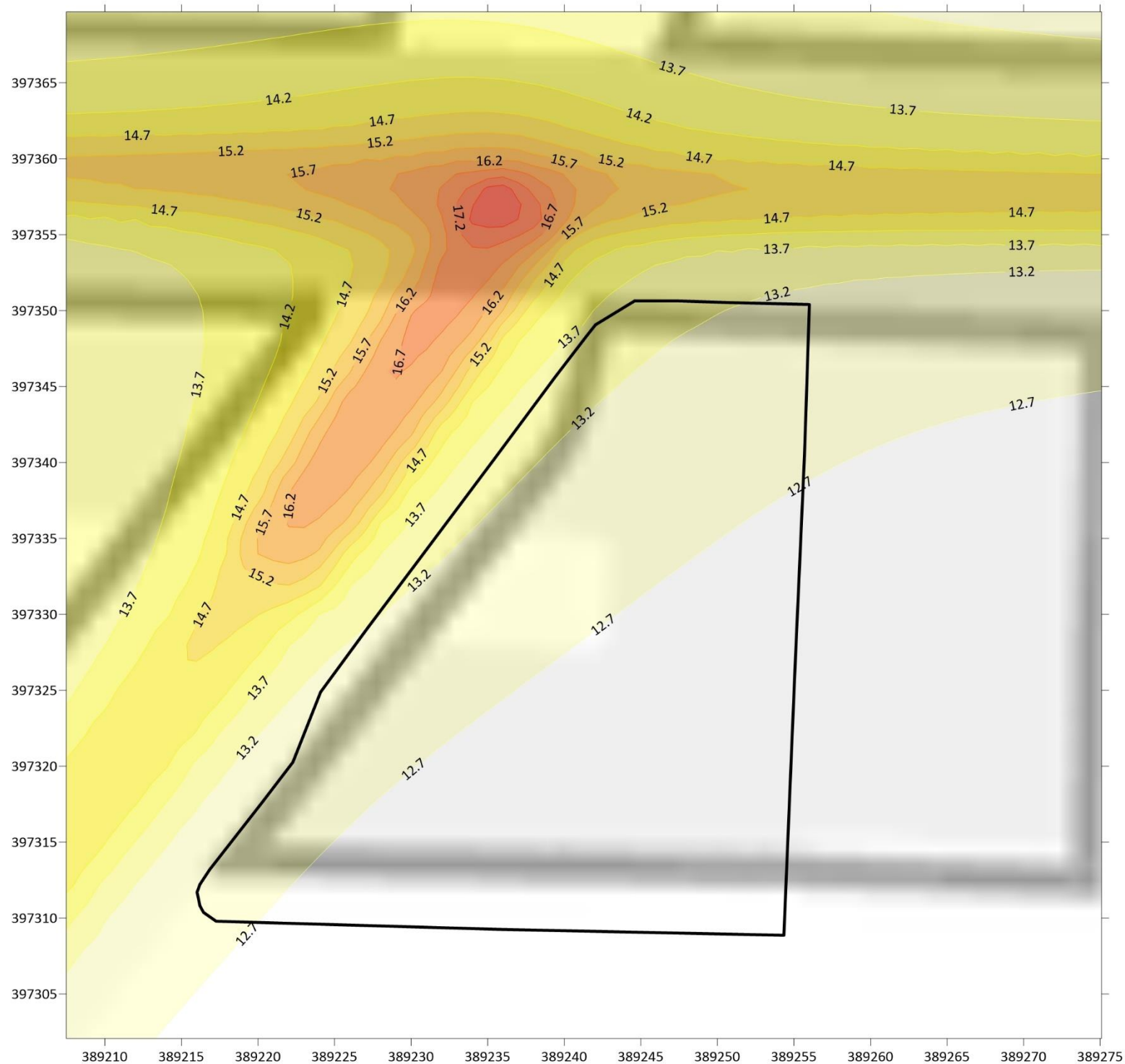
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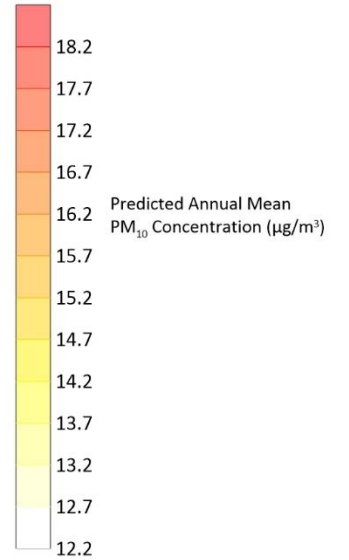


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Legend

 Site Boundary



Title

Figure 8

Predicted Annual Mean PM₁₀
Concentrations (µg/m³)

Project

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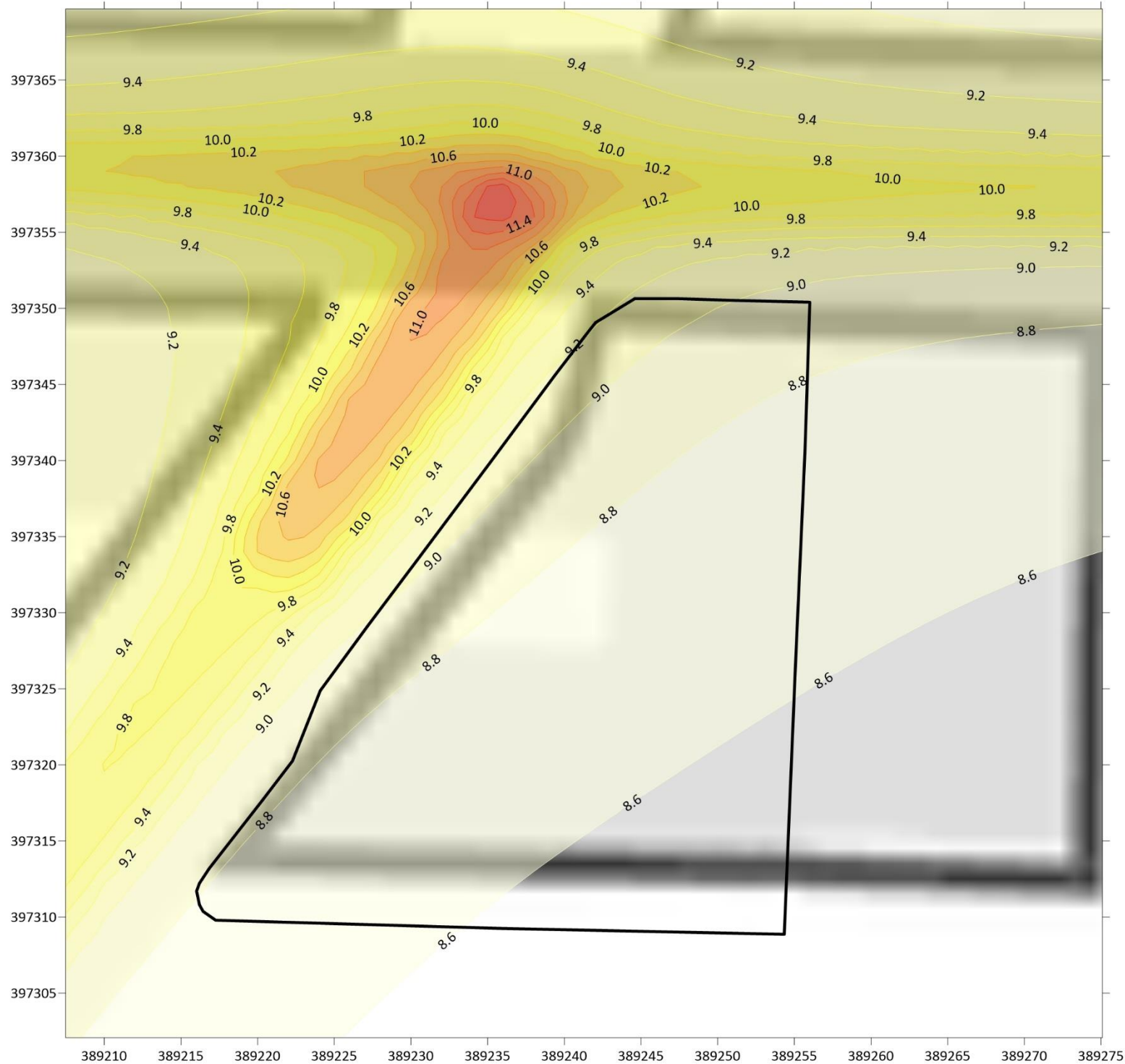
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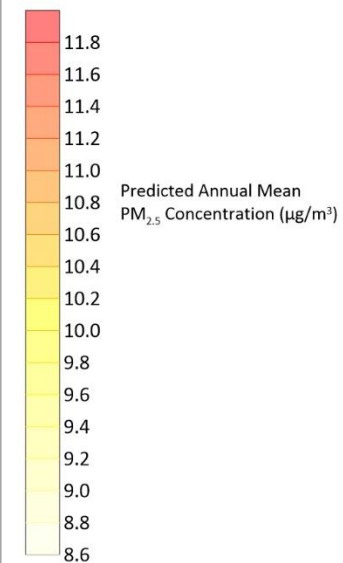


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Legend

 Site Boundary



Title

Figure 9

Predicted Annual Mean PM_{2.5}
Concentrations (µg/m³)

Project

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APPENDIX B – ASSESSMENT INPUTS

ASSESSMENT INPUTS

The Proposed Development has the potential to introduce future site users to poor air quality. Dispersion modelling using ADMS Roads was therefore undertaken to predict pollutant concentrations across the site to consider site suitability for the proposed end-use.

The assessment was undertaken in accordance with the guidance contained within the DEFRA document LAQM.TG(16)² and the EPUK and IAQM guidance⁴.

Dispersion Model

Dispersion modelling was undertaken using the ADMS-Roads dispersion model (version 5.0). ADMS-Roads is developed by Cambridge Environmental Research Consultants (CERC) and is routinely used throughout the world for the prediction of pollutant dispersion from road sources. Modelling predictions from this software package are accepted within the UK by the Environment Agency and DEFRA.

The model requires input data that details the following parameters:

- Assessment area;
- Traffic flow data;
- Vehicle emission factors;
- Spatial co-ordinates of emissions;
- Street width;
- Meteorological data;
- Roughness length; and
- Monin-Obukhov length.

Assessment Area

Ambient concentrations were predicted over the Proposed Development site and surrounding highway network. One Cartesian grid was included in the model over the area at approximately NGR: 389200, 397300 and 389280, 397380 at height of 1.5m to represent the proposed ground floor level for the 2024 opening year scenario.

Results were subsequently used to produce contour plots within the Surfer software package. Reference should be made to Figure 6 within Appendix A for a graphical representation of the verification inputs and operation phase DS extents, respectively.

Traffic Flow Data

Baseline traffic data for the road links utilised within the assessment were obtained from the Department for Transport (DfT):

The DfT Matrix web tool enables the user to view and download traffic flows on every link of the A-road and motorway network in Great Britain for the years 1999 to 2019. The DfT matrix is referenced in DEFRA guidance LAQM.TG(16)² as being a suitable source of data for air quality assessments and is therefore considered to provide a reasonable representation of traffic flows in the vicinity of the site.

Growth factors provided by the Trip End Model Presentation Program (TEMPRO) software package were utilised to allow for conversion from the obtained 2019 traffic flow to 2024 which was used to represent the opening year scenario. Vehicle speeds were estimated based on the free flow potential of each link and local speed limits. Road widths were estimated from aerial photography and UK highway design standards.

A summary of the traffic data used in the verification scenario is provided in Table B1.

Table B1: 2019 Verification Traffic Data

Road Link		Road Width (m)	24 Hour AADT Flow	HDV Pop (%)	Mean Vehicle Speed (km/hr)	Data Source
L1	Pottery Lane, Southbound - North of Gorton Lane	6.8	15,309	514	40	DfT
L2	Pottery Lane, Southbound - South of Gorton Lane	6.6	15,309	514	40	DfT
L3	Gorton Lane Slowdown towards Junction	9.6	10,205	342	25	DfT
L4	Pottery Lane, Northbound, South of Gorton Lane	6.7	12,192	503	40	DfT
L5	Pottery Lane, Northbound, South of Gorton Lane Slowdown	8.1	12,192	503	40	DfT
L6	Pottery Lane, Northbound - North of Gorton Lane	6.5	12,192	503	30	DfT
L7	A6010 Junction Southbound	7.2	6,585	149	30	DfT
L8	A6010 Junction Northbound	7.7	6,073	238	25	DfT
L9	Junction onto Pottery Lane Northbound	11	8,128	336	25	DfT
L10	Hyde Road East Slowdown	4.1	11,799	548	25	DfT
L11	Hyde Road East Junction Approach	6.8	3,932	183	25	DfT
L12	Hyde Road onto Pottery Lane	4.4	3,932	183	30	DfT
L13	Junction Exit onto Hyde Road	4.4	12,123	584	30	DfT
L14	Junction Exit onto Hyde Road	7.0	8,081	389	30	DfT
L15	Pottery Lane onto Hyde Road	4.4	5,103	171	30	DfT
L16	Junction onto A57	3.9	6,462	300	30	DfT
L17	Junction Exit onto A57	6.7	9,694	450	30	DfT
L18	A57 Junction Approach	6.8	9,224	514	25	DfT
L19	A57 onto Junction	3.4	6,149	342	25	DfT
L20	A57 onto Pottery Lane	4.1	3,074	171	30	DfT
L21	Kirkmanshulme onto A57	4.0	3,036	119	30	DfT
L22	Hyde Road West of Pottery Lane	12.5	18,918	963	35	DfT
L23	Hyde Road East of Pottery Lane	10.5	23,922	1,132	40	DfT
L24	Kirkmanshulme Southbound	6.9	9,878	223	40	DfT
L25	Kirkmanshulme Lane Northbound	7.7	9,110	358	40	DfT
L26	Pottery Lane Southbound - South of Ashton Old Road	7.0	15,309	514	40	DfT
L27	Pottery Lane, Southbound - Slowdown at Ambrose Street	6.9	15,309	514	25	DfT
L28	Pottery Lane, Northbound - Slowdown at Ambrose Street	9.4	12,192	503	25	DfT
L29	Pottery Lane, Northbound - North of Ambrose Street	10.7	12,192	503	40	DfT
L30	Pottery Lane, Northbound - Slowdown at Ashton Old Road	7.5	8,128	336	25	DfT
L31	Junction Exit onto Pottery Lane North of Ashton Old Road	6.8	4,716	163	30	DfT

Road Link		Road Width (m)	24 Hour AADT Flow	HDV Pop (%)	Mean Vehicle Speed (km/hr)	Data Source
L32	Pottery Lane, Northbound - North of Ashton Old Road	6.1	14,148	489	40	DfT
L33	Pottery Lane, Southbound - Exit onto Ashton Old Road	7.2	10,205	342	30	DfT
L34	Pottery Lane Slowdown, onto Junction	7.2	9,144	356	25	DfT
L35	Pottery Lane, Southbound - North of Ashton Old Road	6.2	13,717	534	40	DfT
L36	Ashton Old Road, West - Eastbound	8.9	13,717	534	30	DfT
L37	Ashton Old Road, West - Slowdown	10.7	13,717	534	25	DfT
L38	Ashton Old Road West, Westbound	7.3	13,837	634	35	DfT
L39	Ashton Old Road West, Junction Exit	8.2	13,837	634	25	DfT
L40	Ashton Old Road, East Slowdown	10.1	12,732	634	25	DfT
L41	Ashton Old Road East - Slowdown	9.8	8,487	422	25	DfT
L42	Ashton Old Road East onto Pottery Lane Southbound	4.2	4,244	211	30	DfT
L43	Pottery Lane Northbound onto Ashton Old Road West	4.0	4,064	168	30	DfT
L44	Ashton Old Road West onto Pottery Lane Northbound	4.6	4,727	204	30	DfT
L45	Junction Exit onto Ashton Old Road East	7.9	11,693	545	30	DfT
L46	Ashton Old Road East Junction Exit	7.3	7,795	363	25	DfT
L47	Pottery Lane onto Ashton Old Road East	4.0	4,572	178	30	DfT
L48	Ashton Old Road West	11.5	28,019	1,245	40	DfT
L49	A635 Westbound Slowdown	6.0	13,837	634	25	DfT
L50	A635 Westbound	8.9	13,837	634	40	DfT
L51	Ashton Old Road East	11.0	24,425	1,178	40	DfT
L52	Ashton Old Road East, Traffic Lights	11.2	24,425	1,178	15	DfT
L53	Ashton Old Road East of Traffic Lights	12.3	24,425	1,178	40	DfT
L54	Wilson Street Junction Northbound Slowdown	6.3	14,148	489	25	DfT
L55	Alan Turing Way Northbound	6.7	14,148	489	40	DfT
L56	Alan Turing Way Southbound	6.8	13,717	534	40	DfT
L57	Wilson Street Junction Southbound Slowdown	6.3	13,717	534	25	DfT
L58	Hyde Road East of Knutsford Road	15.5	23,922	1,132	15	DfT
L59	Hyde Road at Superstore Junction	19.9	23,922	1,132	10	DfT
L60	Hyde Road East of Oakfield Grove	10.3	23,922	1,132	15	DfT
L61	Hyde Road East of Wellington Street	10.2	23,922	1,132	40	DfT
L62	A635 Eastbound Slowdown	8.7	14,182	611	25	DfT
L63	A635 Eastbound	6.1	14,182	611	30	DfT
L64	Ashton Old Road West of Site	10.3	28,019	1,245	35	DfT
L65	A635 East onto Fairfield Street	9.6	9,339	415	25	DfT
L66	Fairfield Street Junction onto Fairfield Street	6.4	7,633	424	30	DfT

Road Link		Road Width (m)	24 Hour AADT Flow	HDV Pop (%)	Mean Vehicle Speed (km/hr)	Data Source
L67	Fairfield Street Westbound	9.4	11,451	636	35	DfT
L68	Chancellor Lane Northbound Slowdown	7.4	6,006	320	25	DfT
L69	Ashton Old Road onto Chancellor Lane	6.4	9,339	415	25	DfT
L70	Chancellor Lane	9.6	18,020	961	40	DfT
L71	Mancunian Way Northbound	7.5	20,918	691	55	DfT
L72	Mancunian Way Northbound Slowdown	13.4	20,918	691	25	DfT
L73	Mancunian Way North of Fairfield Street, Northbound	6.4	11,451	636	40	DfT
L74	Mancunian Way Northbound Slowdown onto Pin Mill Brow	8.0	11,451	636	25	DfT
L75	Fairfield Street onto Mancunian Way Southbound	7.4	3,817	212	25	DfT
L76	Pin Mill Brow onto Mancunian Way Southbound	6.3	11,205	666	30	DfT
L77	Mancunian Way North of Fairfield Street, Southbound	7.0	11,205	666	40	DfT
L78	Mancunian Way North of Fairfield Street, Southbound - Slowdown	6.3	11,205	666	25	DfT
L79	Fairfield Street Eastbound	6.0	11,205	666	35	DfT
L80	Fairfield Street Eastbound - Slowdown	6.9	11,205	666	25	DfT
L81	Fairfield Street Junction onto Ashton Old Road	6.5	9,339	415	30	DfT
L82	Mancunian Way Southbound	7.1	20,984	707	55	DfT
L83	Pin Mill Brow Northbound	6.2	11,205	666	35	DfT
L84	Pin Mill Brown Slowdown at Mancunian Way	7.0	11,205	666	25	DfT
L85	Pin Mill Brow Northbound North of Mancunian Way	7.0	17,762	510	35	DfT
L86	Pin Mill Brow Southbound North of Mancunian Way	7.4	15,323	466	35	DfT
L87	Pin Mill Brow onto A635	7.3	1,145	64	30	DfT
L88	Pin Mill Brow Southbound South of Mancunian Way	8.1	11,451	636	35	DfT
L89	Pin Mill Brown Slowdown	7.2	11,451	636	25	DfT
L90	Fairfield Street Junction onto Chancellor Lane	6.3	6,006	320	30	DfT
L91	Devonshire Street North Slowdown	7.4	18,020	961	25	DfT
L92	A57 Slowdown	18.0	17,334	1,465	25	DfT
L93	A57 West of Devonshire Street North	10.5	17,334	1,465	40	DfT
L94	Devonshire Street	10.0	17,930	637	40	DfT
L95	Devonshire Street Slowdown	9.9	17,930	637	25	DfT
L96	A57 onto Devonshire Street	5.8	1,892	96	25	DfT
L97	Great Ancoats Street	15.8	33,085	976	35	DfT
L98	Gable Street	7.0	2,674	294	40	DfT
L99	Gorton Road Along Site	7.3	2,674	294	40	DfT
L100	Gorton Road Site Access to Stainforth Street	7.1	2,674	294	40	DfT

Road Link		Road Width (m)	24 Hour AADT Flow	HDV Pop (%)	Mean Vehicle Speed (km/hr)	Data Source
L101	Stainforth Street	7.0	2,460	197	40	DfT
L102	North of Stainforth Street Site Access	7.2	2,460	197	40	DfT
L103	Gorton Road East of Stainforth Street	7.4	4,606	415	40	DfT
L104	Gorton Road Slowdown	10.4	2,303	104	25	DfT
L105	Pottery Lane onto Gorton Road	7.6	2,303	104	30	DfT
L106	Ashton Road	5.0	14,148	489	40	DfT
L107	Cornwall Street	4.3	4,280	453	15	DfT
L108	Cornwall Street	6.6	4,280	453	25	DfT
L109	Ogden Lane Slow Down	7.9	4,280	453	15	DfT
L110	Ogden lane	7.2	4,280	453	30	DfT
L111	Ogden lane Slow Down	6.4	4,280	453	15	DfT
L112	Chapmen Street	6.1	8,559	907	30	DfT
L113	Chapmen Street	8.6	8,559	907	15	DfT

Reference should be made to Figure 6 within Appendix A for a graphical representation of the road link locations used within the verification assessment. The road width and mean vehicle speed shown in Table B1 remained the same for the 2024 scenarios.

A summary of the 2024 traffic data is shown in Table B2.

Table B2: 2024 Traffic Data

Road Link		DS Scenario	
		24 Hr AADT Flow	HDV Prop (%)
L1	Pottery Lane, Southbound - North of Gorton Lane	16,370	3.4
L2	Pottery Lane, Southbound - South of Gorton Lane	16,370	3.4
L3	Gorton Lane Slowdown towards Junction	10,912	3.4
L4	Pottery Lane, Northbound, South of Gorton Lane	13,037	4.1
L5	Pottery Lane, Northbound, South of Gorton Lane Slowdown	13,037	4.1
L6	Pottery Lane, Northbound - North of Gorton Lane	13,037	4.1
L7	A6010 Junction Southbound	7,041	2.3
L8	A6010 Junction Northbound	6,494	3.9
L9	Junction onto Pottery Lane Northbound	8,691	4.1
L10	Hyde Road East Slowdown	12,616	4.6
L11	Hyde Road East Junction Approach	4,205	4.6
L12	Hyde Road onto Pottery Lane	4,205	4.6
L13	Junction Exit onto Hyde Road	12,963	4.8
L14	Junction Exit onto Hyde Road	8,641	4.8

Road Link		DS Scenario	
		24 Hr AADT Flow	HDV Prop (%)
L15	Pottery Lane onto Hyde Road	5,456	3.4
L16	Junction onto A57	6,910	4.6
L17	Junction Exit onto A57	10,366	4.6
L18	A57 Junction Approach	9,863	5.6
L19	A57 onto Junction	6,575	5.6
L20	A57 onto Pottery Lane	3,287	5.6
L21	Kirkmanshulme onto A57	3,247	3.9
L22	Hyde Road West of Pottery Lane	20,229	5.1
L23	Hyde Road East of Pottery Lane	25,580	4.7
L24	Kirkmanshulme Southbound	10,563	2.3
L25	Kirkmanshulme Lane Northbound	9,741	3.9
L26	Pottery Lane Southbound - South of Ashton Old Road	16,370	3.4
L27	Pottery Lane, Southbound - Slowdown at Ambrose Street	16,370	3.4
L28	Pottery Lane, Northbound - Slowdown at Ambrose Street	13,037	4.1
L29	Pottery Lane, Northbound - North of Ambrose Street	13,037	4.1
L30	Pottery Lane, Northbound - Slowdown at Ashton Old Road	8,691	4.1
L31	Junction Exit onto Pottery Lane North of Ashton Old Road	5,042	3.5
L32	Pottery Lane, Northbound - North of Ashton Old Road	15,129	3.5
L33	Pottery Lane, Southbound - Exit onto Ashton Old Road	10,912	3.4
L34	Pottery Lane Slowdown, onto Junction	9,778	3.9
L35	Pottery Lane, Southbound - North of Ashton Old Road	14,668	3.9
L36	Ashton Old Road, West - Eastbound	14,668	3.9
L37	Ashton Old Road, West - Slowdown	14,668	3.9
L38	Ashton Old Road West, Westbound	14,796	4.6
L39	Ashton Old Road West, Junction Exit	14,796	4.6
L40	Ashton Old Road, East Slowdown	13,614	5.0
L41	Ashton Old Road East - Slowdown	9,075	5.0
L42	Ashton Old Road East onto Pottery Lane Southbound	4,538	5.0
L43	Pottery Lane Northbound onto Ashton Old Road West	4,345	4.1
L44	Ashton Old Road West onto Pottery Lane Northbound	5,055	4.3
L45	Junction Exit onto Ashton Old Road East	12,504	4.7
L46	Ashton Old Road East Junction Exit	8,335	4.7
L47	Pottery Lane onto Ashton Old Road East	4,889	3.9
L48	Ashton Old Road West	29,961	4.4
L49	A635 Westbound Slowdown	14,796	4.6
L50	A635 Westbound	14,796	4.6

Road Link		DS Scenario	
		24 Hr AADT Flow	HDV Prop (%)
L51	Ashton Old Road East	26,118	4.8
L52	Ashton Old Road East, Traffic Lights	26,118	4.8
L53	Ashton Old Road East of Traffic Lights	26,118	4.8
L54	Wilson Street Junction Northbound Slowdown	15,129	3.5
L55	Alan Turing Way Northbound	15,129	3.5
L56	Alan Turing Way Southbound	14,668	3.9
L57	Wilson Street Junction Southbound Slowdown	14,668	3.9
L58	Hyde Road East of Knutsford Road	25,580	4.7
L59	Hyde Road at Superstore Junction	25,580	4.7
L60	Hyde Road East of Oakfield Grove	25,580	4.7
L61	Hyde Road East of Wellington Street	25,580	4.7
L62	A635 Eastbound Slowdown	15,165	4.3
L63	A635 Eastbound	15,165	4.3
L64	Ashton Old Road West of Site	29,961	4.4
L65	A635 East onto Fairfield Street	9,986	4.4
L66	Fairfield Street Junction onto Fairfield Street	8,162	5.6
L67	Fairfield Street Westbound	12,245	5.6
L68	Chancellor Lane Northbound Slowdown	6,422	5.3
L69	Ashton Old Road onto Chancellor Lane	9,986	4.4
L70	Chancellor Lane	19,269	5.3
L71	Mancunian Way Northbound	22,368	3.3
L72	Mancunian Way Northbound Slowdown	22,368	3.3
L73	Mancunian Way North of Fairfield Street, Northbound	12,245	5.6
L74	Mancunian Way Northbound Slowdown onto Pin Mill Brow	12,245	5.6
L75	Fairfield Street onto Mancunian Way Southbound	4,081	5.6
L76	Pin Mill Brow onto Mancunian Way Southbound	11,982	5.9
L77	Mancunian Way North of Fairfield Street, Southbound	11,982	5.9
L78	Mancunian Way North of Fairfield Street, Southbound - Slowdown	11,982	5.9
L79	Fairfield Street Eastbound	11,982	5.9
L80	Fairfield Street Eastbound - Slowdown	11,982	5.9
L81	Fairfield Street Junction onto Ashton Old Road	9,986	4.4
L82	Mancunian Way Southbound	22,438	3.4
L83	Pin Mill Brow Northbound	11,982	5.9
L84	Pin Mill Brown Slowdown at Mancunian Way	11,982	5.9
L85	Pin Mill Brow Northbound North of Mancunian Way	18,993	2.9
L86	Pin Mill Brow Southbound North of Mancunian Way	16,384	3.0

Road Link		DS Scenario	
		24 Hr AADT Flow	HDV Prop (%)
L87	Pin Mill Brow onto A635	1,224	5.6
L88	Pin Mill Brow Southbound South of Mancunian Way	12,245	5.6
L89	Pin Mill Brown Slowdown	12,245	5.6
L90	Fairfield Street Junction onto Chancellor Lane	6,422	5.3
L91	Devonshire Street North Slowdown	19,269	5.3
L92	A57 Slowdown	18,535	8.5
L93	A57 West of Devonshire Street North	18,535	8.5
L94	Devonshire Street	19,172	3.6
L95	Devonshire Street Slowdown	19,172	3.6
L96	A57 onto Devonshire Street	2,023	5.1
L97	Great Ancoats Street	35,377	2.9
L98	Gable Street	2,859	11.0
L99	Gorton Road Along Site	2,859	11.0
L100	Gorton Road Site Access to Stainforth Street	2,859	11.0
L101	Stainforth Street	2,631	8.0
L102	North of Stainforth Street Site Access	2,631	8.0
L103	Gorton Road East of Stainforth Street	4,925	9.0
L104	Gorton Road Slowdown	2,463	4.5
L105	Pottery Lane onto Gorton Road	2,463	4.5
L106	Ashton Road	15,129	3.5
L107	Cornwall Street	4,576	10.6
L108	Cornwall Street	4,576	10.6
L109	Ogden Lane Slow Down	4,576	10.6
L110	Ogden lane	4,576	10.6
L111	Ogden lane Slow Down	4,576	10.6
L112	Chapmen Street	9,152	10.6
L113	Chapmen Street	9,152	10.6

Reference should be made to Figure 6 within Appendix A for a graphical representation of the road link locations used within the operation phase assessment.

Emission Factors

Emission factors for each link were calculated using the relevant traffic flows and the Emissions Factor Toolkit (version 11.0) released in November 2021, which incorporates updated COPERT 5.3 vehicle emissions factors for NO_x, PM₁₀ and PM_{2.5} and EURO 6 vehicle fleet sub-categories.

NO_x to NO₂ Conversion

Predicted annual mean NO_x concentrations from the dispersion model were converted to NO₂ concentrations using the NO_x to NO₂ Calculator (v.8.1) provided by DEFRA, which is the method detailed within LAQM.TG(16)².

Meteorological Data

Meteorological data used in this assessment was taken from Manchester Ringway meteorological station over the period 1st January 2019 to 31st December 2019 (inclusive).

Manchester Ringway meteorological station is located at approximate NGR: 381745,383960 which is approximately 15km South of the Proposed Development. Although there is a large distance between the application site and Manchester Ringway the use of this data has prior approval from the Environmental Health Department at MCC and is therefore considered to provide a reasonable representation of conditions at the development site.

All meteorological records used in the assessment were provided by Atmospheric Dispersion Modelling (ADM) Ltd, which is an established distributor of data within the UK. Reference should be made to Figure 5 within Appendix A for a wind rose of utilised meteorological data.

Roughness Length

The specific roughness length (z_0) values used to represent conditions during the verification process, DS scenario, as well as conditions at the Manchester Ringway meteorological station are summarised in Table B3.

Table B3: Utilised Roughness Lengths

Scenario	Roughness Length (m)	ADMS Description
Verification, DM and DS Scenarios	1	Cities, Woodlands
Manchester Ringway	0.3	Agricultural areas (max)

These values of z_0 are considered appropriate for the morphology of the assessment area.

Monin-Obukhov Length

The Monin-Obukhov length provides a measure of the stability of the atmosphere within certain urban or rural contexts. The specific length values used to represent conditions during the verification process, DS scenario, as well as conditions at the Manchester Ringway are summarised in Table B4.

Table B4: Utilised Monin-Obukhov Lengths

Scenario	Monin-Obukhov Length (m)	ADMS Description
Verification, DM and DS Scenarios	30	Cities and large towns
Manchester Ringway	30	Mixed Urban/Industrial

This Monin-Obukhov value is considered appropriate for the morphology of the assessment area.

Background Concentrations

The 2024 annual mean background concentrations detailed in Table 4, was used in the dispersion modelling assessment to represent annual mean pollutant levels at the Proposed Development site and local monitoring sites.

Table B5 displays the specific background concentrations as predicted by DEFRA, utilised to represent the condition at the monitoring locations used within the verification process.

Table B5: Predicted Background Pollutant Concentrations for Monitoring Locations

Monitoring Location	DEFRA Grid Square	Pollutant	2024 Predicted Background Concentration ($\mu\text{g}/\text{m}^3$)
MA28NO	388500,396500	NO _x	20.48
		NO ₂	14.86
		PM ₁₀	12.19
		PM _{2.5}	8.39
MA73NO	387500,397500	NO _x	23.88
		NO ₂	16.94
		PM ₁₀	11.93
		PM _{2.5}	7.98

Verification

The predicted results from a dispersion model may differ from measured concentrations for a large number of reasons, including:

- Estimates of background concentrations;
- Uncertainties in source activity data such as traffic flows and emission factors;
- Variations in meteorological conditions;
- Overall model limitations; and
- Uncertainties associated with monitoring data, including locations.

Model verification is the process by which these and other uncertainties are investigated and where possible minimised. In reality, the differences between modelled and monitored results are likely to be a combination of all of these aspects.

For the purpose of this assessment model verification was undertaken for 2019, using traffic data, meteorological data and monitoring results from this year.

MCC undertakes periodic monitoring of NO₂ concentrations at 2 roadside monitoring location within the assessment extents. The road contribution to total NO_x concentration was calculated from the monitored NO₂ result for use in the verification process. This was undertaken following the methodology contained within DEFRA guidance LAQM.TG(16)². The monitored annual mean NO_x concentration and calculated road NO_x concentration are summarised in Table B6.

Table B6: NO_x Concentrations

Site ID	Monitored Road NO _x Concentration ($\mu\text{g}/\text{m}^3$)	Modelled Road NO _x Concentration ($\mu\text{g}/\text{m}^3$)	% Difference ((Monitored - Modelled)/Monitored) * 100
MA28NO	29.54	14.84	50%
MA73NO	38.61	14.81	62%

The monitored and modelled NO_x road contribution concentrations were graphed and the equation of the trend line based on the linear progression through zero was calculated, as shown in Graph 1

This indicated that a verification factor of **2.2979** was required to be applied to all NO_x modelling results, showing the model overestimated pollutant concentrations throughout the assessment extents.

Graph 1 is provided below.

Graph 1 - Verification Adjustment Factor

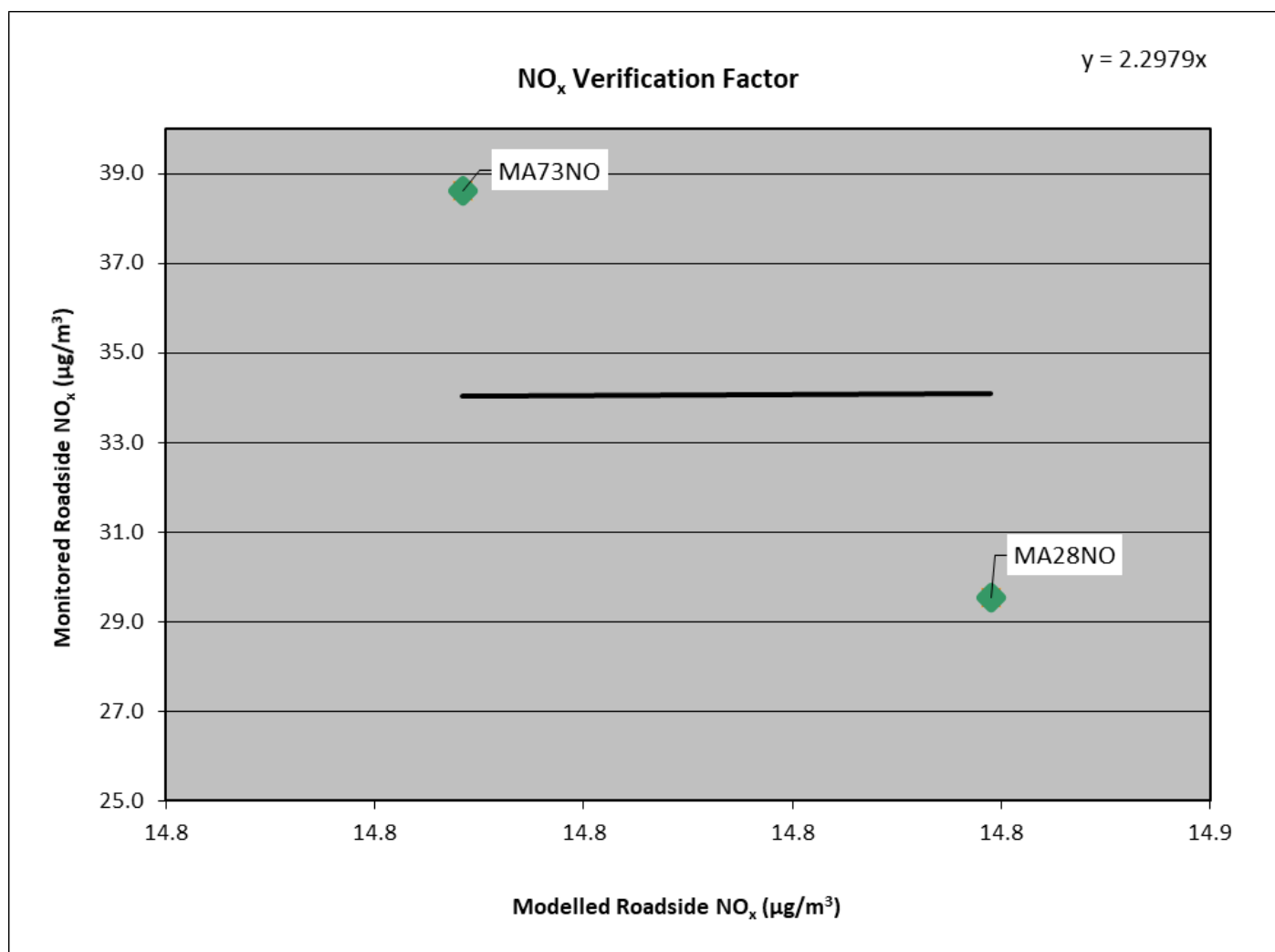


Table B7 presents the monitored annual mean NO₂ concentrations and the adjusted modelled total NO₂ concentration based on the above verification factor. Exceedances of the annual mean NO₂ AQO are highlighted in **bold**.

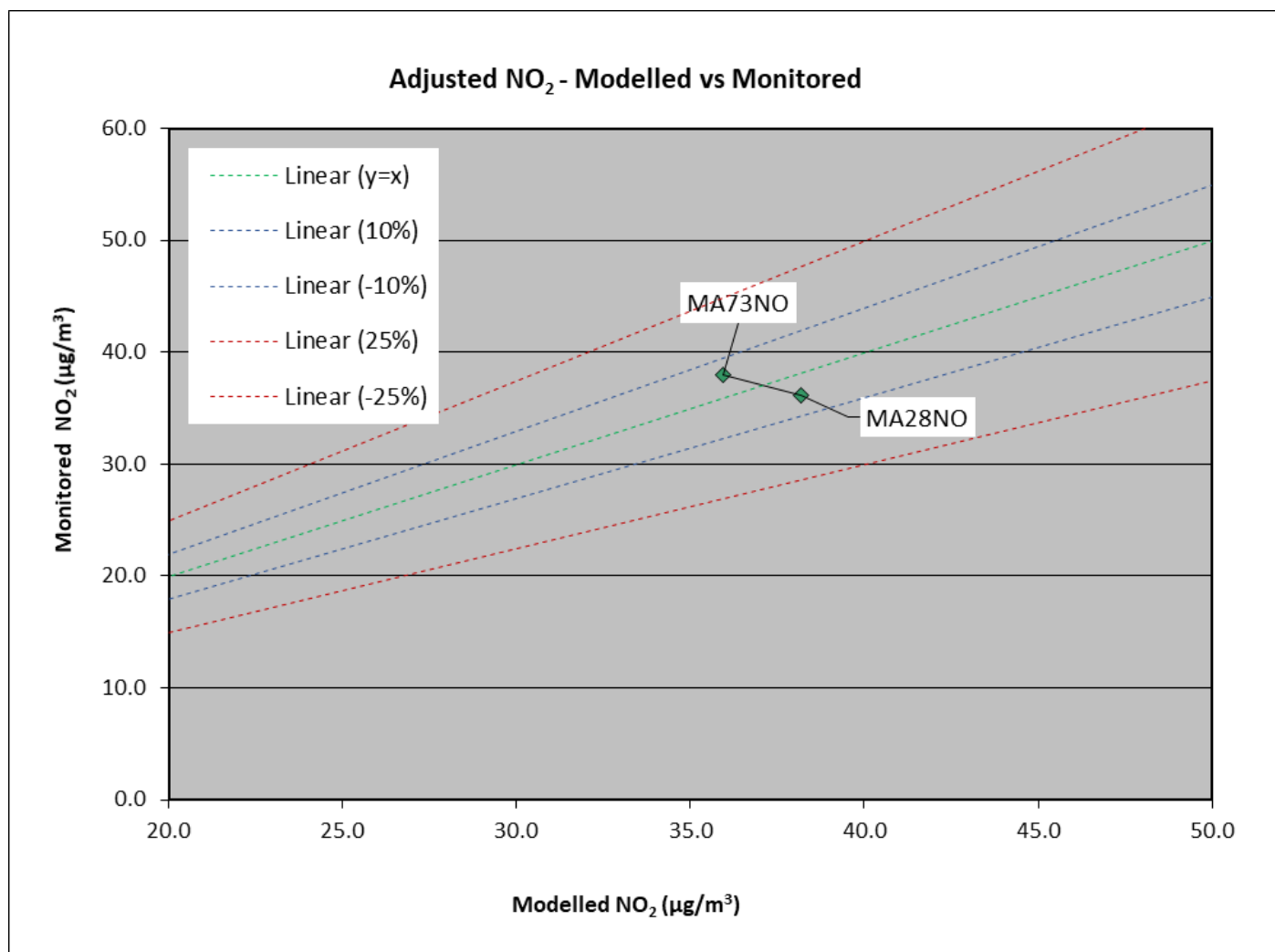
Table B7: NO₂ Concentrations

Site ID	Monitored Road NO ₂ Concentration (µg/m ³)	Adjusted Modelled Road NO ₂ Concentration (µg/m ³)	% Difference ((Monitored - Modelled)/Monitored) * 100
MA28NO	36.10	38.19	-6%
MA73NO	38.00	35.93	5%

As demonstrated in Table B7, the percentage difference between modelled and monitored concentrations is deemed acceptable and is less than 25% in all cases, and less than 10% at 2 locations. This reduces uncertainties in the model predictions and provide a robust representation of pollutant concentrations in accordance with the guidance suggested in LAQM.TG(16)².

A graphical representation of the adjusted NO₂ concentrations is provided within Graph 2.

Graph 2 – Modelled vs Monitored NO₂



As PM₁₀ and PM_{2.5} monitoring is not undertaken within the assessment extents, the NO_x adjustment factor of **2.2979** was utilised to adjust model predictions of PM₁₀ and PM_{2.5} in accordance with the guidance provided within LAQM.TG(16)².

APPENDIX D – CONSTRUCTION PHASE ASSESSMENT CRITERIA

CONSTRUCTION PHASE METHODOLOGY

There is the potential for fugitive dust emissions to occur as a result of construction phase activities. These have been assessed in accordance with the methodology outlined within the Institute of Air Quality Management (IAQM) document 'Guidance on the Assessment of Dust from Demolition and Construction'³.

Activities are divided into four types to reflect their different potential impacts. These are:

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

The potential for dust emissions was assessed for each activity that is likely to take place and considered three separate dust effects:

- Annoyance due to dust soiling;
- Harm to ecological receptors; and
- The risk of health effects due to a significant increase in exposure to PM₁₀ and PM_{2.5}.

The assessment steps are detailed below.

Step 1

Step 1 screens the requirement for a more detailed assessment. Should human receptors be identified within 350m from the site boundary or 50m from the construction vehicle route up to 500m from the site entrance, then the assessment should proceed to Step 2. Additionally, should ecological receptors be identified within 50m of the boundary site or 50m from the construction vehicle route up to 500m from the site entrance, then the assessment should also proceed to Step 2.

Should sensitive receptors not be present within the relevant distances then negligible impacts would be expected and further assessment is not necessary.

Step 2

Step 2 assesses the risk of potential dust impacts. A site is allocated to a risk category based on two factors:

- The scale and nature of the works, which determines the magnitude of dust arising as: small, medium or large (Step 2A); and
- The sensitivity of the area to dust impacts, which can be defined as low, medium or high sensitivity (Step 2B).

The two factors are combined in Step 2C to determine the risk of dust impacts without mitigation applied. Step 2A defines the potential magnitude of dust emission through the construction phase. The relevant criteria are summarised in Table C1.

Table C1: Construction Dust - Magnitude of Emission

Magnitude	Activity	Criteria
Large	Demolition	• Total building volume greater than 50,000m³ • Potentially dusty construction material (e.g. concrete) • On-site crushing and screening • Demolition activities greater than 20m above ground level
	Earthworks	• Total site area greater than 10,000m² • Potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size) • More than 10 heavy earth moving vehicles active at any one time

Magnitude	Activity	Criteria
		- Formation of bunds greater than 8m in height - More than 100,000 tonnes of material moved
	Construction	- Total building volume greater than 100,000m³ - On site concrete batching - Sandblasting
	Trackout	- More than 50 Heavy Duty Vehicle (HDV) trips per day - Potentially dusty surface material (e.g. high clay content) - Unpaved road length greater than 100m
Medium	Demolition	- Total building volume 20,000m³ to 50,000m³ - Potentially dusty construction material - Demolition activities 10m to 20m above ground level
	Earthworks	- Total site area 2,500m² to 10,000m² - Moderately dusty soil type (e.g. silt) 5 to 10 heavy earth moving vehicles active at any one time - Formation of bunds 4m to 8m in height - Total material moved 20,000 tonnes to 100,000 tonnes
	Construction	- Total building volume 25,000m³ to 100,000m³ - Potentially dusty construction material (e.g. concrete) - On site concrete batching
	Trackout	10 to 50 HDV trips per day - Moderately dusty surface material (e.g. high clay content) - Unpaved road length 50m to 100m
Small	Demolition	- Total building volume under 20,000m³ - Construction material with low potential for dust release (e.g. metal cladding or timber) - Demolition activities less than 10m above ground level - Demolition during wetter months
	Earthworks	- Total site area less than 2,500m² - Soil type with large grain size (e.g. sand) - Less than 5 heavy earth moving vehicles active at any one time - Formation of bunds less than 4m in height - Total material moved less than 20,000 tonnes - Earthworks during wetter months
	Construction	- Total building volume less than 25,000m³ - Construction material with low potential for dust release (e.g. metal cladding or timber)
	Trackout	<10 HDV (3.5t) outward movements in any one day - Surface material with low potential for dust release - Unpaved road length <50m

Step 2B defines the sensitivity of the area around the development site for construction, earthworks and trackout. The factors influencing the sensitivity of the area are shown in Table C2.

Table C2: Examples of Factors Defining Sensitivity of an Area

Sensitivity	Examples	
	Human Receptors	Ecological Receptors
High	- Users expect of high levels of amenity - High aesthetic or value property - People expected to be present continuously for extended periods of time	Internationally or nationally designated site e.g. Special Area of Conservation

Sensitivity	Examples	
	Human Receptors	Ecological Receptors
	Locations where members of the public are exposed over a time period relevant to the AQO for PM₁₀ e.g. residential properties, hospitals, schools and residential care homes	
Medium	- Users would expect to enjoy a reasonable level of amenity - Aesthetics or value of their property could be diminished by soiling - People or property wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land e.g. parks and places of work	Nationally designated site e.g. Sites of Special Scientific Interest
Low	- Enjoyment of amenity would not reasonably be expected - Property would not be expected to be diminished in appearance - Transient exposure, where people would only be expected to be present for limited periods. e.g. public footpaths, playing fields, shopping streets, playing fields, farmland, footpaths, short term car park and roads	Locally designated site e.g. Local Nature Reserve

The guidance also provides the following factors to consider when determining the sensitivity of an area to potential dust impacts during the construction phase:

- Any history of dust generating activities in the area;
- The likelihood of concurrent dust generating activity on nearby sites;
- Any pre-existing screening between the source and the receptors;
- Any conclusions drawn from analysing local meteorological data which accurately represent the area; and if relevant the season during which works will take place;
- Any conclusions drawn from local topography;
- Duration of the potential impact, as a receptor may become more sensitive over time; and
- Any known specific receptor sensitivities which go beyond the classifications given in the document.

These factors were considered in the undertaking of this assessment.

The sensitivity of the area to dust soiling effects on people and property is shown in Table C3.

Table C3: Sensitivity of the Area to Dust Soiling Effects on People and Property

Receptor Sensitivity	Number of Receptors	Distance from the Source (m)			
		Less than 20	Less than 50	Less than 100	Less than 350
High	More than 100	High	High	Medium	Low
	10 - 100	High	Medium	Low	Low
	1 - 10	Medium	Low	Low	Low
Medium	More than 1	Medium	Low	Low	Low
Low	More than 1	Low	Low	Low	Low

Table C4 outlines the sensitivity of the area to human health impacts.

Table C4: Sensitivity of the Area to Human Health Impacts

Receptor Sensitivity	Annual Mean PM ₁₀ Concentration	Number of Receptors	Distance from the Source (m)				
			Less than 20	Less than 50	Less than 100	Less than 200	Less than 350
High	Greater than 32µg/m ³	More than 100	High	High	High	Medium	Low
		10 - 100	High	High	Medium	Low	Low
		1 - 10	High	Medium	Low	Low	Low
	28 - 32µg/m ³	More than 100	High	High	Medium	Low	Low
		10 - 100	High	Medium	Low	Low	Low
		1 - 10	High	Medium	Low	Low	Low
	24 - 28µg/m ³	More than 100	High	Medium	Low	Low	Low
		10 - 100	High	Medium	Low	Low	Low
		1 - 10	Medium	Low	Low	Low	Low
	Less than 24µg/m ³	More than 100	Medium	Low	Low	Low	Low
		10 - 100	Low	Low	Low	Low	Low
	Less than 24µg/m ³	More than 100	Medium	Low	Low	Low	Low
		10 - 100	Low	Low	Low	Low	Low
		1 - 10	Low	Low	Low	Low	Low
Medium	Greater than 32µg/m ³	More than 10	High	Medium	Low	Low	Low
		1 - 10	Medium	Low	Low	Low	Low
	28 - 32µg/m ³	More than 10	Medium	Low	Low	Low	Low
		1 - 10	Low	Low	Low	Low	Low
	24 - 28µg/m ³	More than 10	Low	Low	Low	Low	Low
		1 - 10	Low	Low	Low	Low	Low
	Less than 24µg/m ³	More than 10	Low	Low	Low	Low	Low
		1 - 10	Low	Low	Low	Low	Low
Low	-	More than 1	Low	Low	Low	Low	Low

Table C5 outlines the sensitivity of the area to ecological impacts.

Table C5: Sensitivity of the Area to Ecological Impacts

Receptor Sensitivity	Distance from the Source (m)	
	Less than 20	Less than 50
High	High	Medium
Medium	Medium	Low
Low	Low	Low

Step 2C combines the dust emission magnitude with the sensitivity of the area to determine the risk of unmitigated impacts.

Table C6 outlines the risk category from demolition activities.

Table C6: Dust Risk Category from Demolition

Receptor Sensitivity	Dust Emission Magnitude		
	Large	Medium	Small
High	High	Medium	Medium
Medium	High	Medium	Low
Low	Medium	Low	Negligible

Table C7 outlines the risk category from earthworks and construction activities.

Table C7: Dust Risk Category from Earthworks and Construction

Receptor Sensitivity	Dust Emission Magnitude		
	Large	Medium	Small
High	High	Medium	Low
Medium	Medium	Medium	Low
Low	Low	Low	Negligible

Table C8 outlines the risk category from trackout.

Table C8: Dust Risk Category from Trackout

Receptor Sensitivity	Dust Emission Magnitude		
	Large	Medium	Small
High	High	Medium	Low
Medium	Medium	Low	Negligible
Low	Low	Low	Negligible

Step 3

Step 3 requires the identification of site-specific mitigation measures within the IAQM guidance to reduce potential dust impacts based upon the relevant risk categories identified in Step 2. For sites with negligible risk mitigation measures beyond those required by legislation are not required. However, additional controls may be applied as part of good practice.

Step 4

Once the risk of dust impacts has been determined and the appropriate mitigation measures identified, the final step is to determine the significance of any residual impacts. For almost all construction activity, the aim should be to control effects through the use of effective mitigation. Experience shows that this is normally possible. Hence the residual effect will normally be 'not significant'.

APPENDIX D – ASSESSORS CURRICULUM VITAE

Lewis Ellison | Senior Air Quality & Lighting Consultant

PROFESSIONAL PROFILE

Lewis has 5 years' experience within the Air Quality and Lighting sectors, working on a wide range of projects across a varied client base.

CORE SKILLS

- Production of bespoke Air Quality, Dust Risk and Odour Impact Assessments suitable for submission as part of a planning application
- Creation of detailed computational modelling
- Client and Sub Contractor Management.
- Provision of CPD events
- Production of bespoke Artificial Lighting, and Daylight, Sunlight and Overshadowing Assessments suitable for submission as part of a planning application
- Project Management
- Complex Data Analysis

INDUSTRY EMPLOYMENT HISTORY

TIME SPENT IN INDUSTRY

5 YEARS

OVERVIEW OF INDUSTRY

Senior Air Quality and Lighting Consultant, Ensaf Consultants

May 2021 - Present

- Lyle Park West – production of an Air Quality ES chapter in support of a mixed-use development at Lyle Park, Newham.
- Arundel Street – Production of a Daylight, Sunlight and Overshadowing Assessment for a large-scale residential development in the centre of Portsmouth
- Gowanbank, Forfar – Production of an Odour Impact Assessment with 'Sniff Test' for a residential scheme in close proximity to a landfill.
- Aldens Farm East, Alphington – Production of an artificial lighting, Air Quality and Dust Risk Assessment for a proposed residential development in Exeter.

Air quality Consultant, Ensaf Consultants (Formerly REC Ltd)

January 2017 - May 2021

- AGFA Works, Seagate – Air Quality Assessment using ADMS-Roads in support of an 83 residential unit development with the potential to cause air quality impacts at sensitive locations.
- Bower Farm, Bridgewater – Production of an Air Quality Assessment with relevant mitigation measures for inclusion in an EIA report for part of the east Sedgemoor development.
- ALDI, Hertford – Air Quality Assessment for the Proposed Aldi Superstore at Hertfordshire using ADMS-Roads.
- Wren Park Care Home, Shefford – Qualitative Odour Assessment of industrial units in the vicinity of a proposed extension to the current care home.
- Coldharbour Land, Lambeth – Air Quality Assessment for a proposed mixed-use development with the implementation of mitigation measures.

QUALIFICATIONS (INDUSTRY SPECIFIC/ADDITIONAL & TRAINING)

2016	MOcean, Geological Oceanography
2018	Odour Acuity Test
2021	Associate Member of the Institute of Environmental Science (IES)
2021	Member of the Institute Air Quality Management (IAQM)