



Air Quality Assessment

New Smithfield Market, Manchester

Russells Limited

MAN.1969.AQ.001.R.002



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Air Quality Assessment

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Contents

1.0	Introduction	5
1.1	Background	5
1.2	Site Location and Context	5
2.0	Legislation Guidance and Policy	6
2.1	UK Legislation and National Strategy.....	6
2.2	Local Planning Policy	8
3.0	Methodology	9
3.1	Construction Phase Impacts	9
3.2	Operational Phase Site Exposure	9
3.3	Operational Phase Impacts	9
4.0	Baseline Conditions	11
4.1	Emission Sources.....	11
4.2	Air Quality Management Areas.....	11
4.3	Air Quality Monitoring	11
4.4	DEFRA Background Concentrations	12
4.5	Sensitive Receptors.....	13
5.0	Assessment	15
5.1	Construction Phase Impact Assessment	15
5.2	On-site Exposure	16
5.3	Road Traffic Exhaust Impacts.....	17
6.0	Mitigation	18
6.1	Construction Phase	18

7.0	Conclusions.....	21
8.0	Abbreviations.....	22

Tables and Figures

Table 1	Air Quality Objectives	7
Table 2	Where Air Quality Objectives Apply	7
Table 3	EPUK and IAQM Assessment Significance Criteria.....	10
Table 4	Roadside Diffusion Tube Monitoring Results.....	12
Table 5	DEFRA Background Pollutant Concentrations	12
Table 6	Existing Sensitive Human Receptors	13
Table 7	Sensitive Receptor Counts	15
Table 8	Dust Emission Magnitude	16
Table 9	Receptor Sensitivity	16
Table 10	Summary of Unmitigated Dust Risk	16
Table 11	Summary of Impacts at Sensitive Receptors.....	17
Table 12	Fugitive Dust Mitigation Measures.....	18
Table B1:	2019 Verification Traffic Data	31
Table B2:	2023 Traffic Data	33
Table B3:	Roughness Lengths	35
Table B4:	Monin-Obukhov Lengths.....	35
Table B5:	Predicted Background Pollutant Concentrations for Monitoring Locations.....	35
Table B6:	Predicted Background Pollutant Concentrations at Sensitive Receptors	36
Table B7:	NO _x Results.....	37
Table B8:	Adjusted Modelled and Monitored NO ₂ Concentrations	37
Table B9:	Modelled Uncertainty	38
Table C1:	Predicted Annual Mean NO ₂ Concentrations	40
Table C2:	Predicted NO ₂ Impacts	41
Table C3:	Predicted Annual Mean PM ₁₀ Concentrations	41
Table C4:	Predicted PM ₁₀ Impacts	42
Table C5:	Predicted Annual Mean PM _{2.5} Concentrations	43

Table C6: Predicted PM _{2.5} Impacts.....	44
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Drawings and Appendices

Appendix A – Figures	23
Appendix B – Assessment Inputs	31
Appendix C - Assessment Results	40
Appendix D – IAQM Construction Phase Methodology.....	46

Non-Technical Summary

- i. This report provides a consideration of potential impacts relating to a proposed industrial development at New Smithfield Market, Manchester.
- ii. Due to the nature and scale of the proposals there is the potential for impacts to occur at nearby sensitive receptors during the construction and operational phases. Impacts could arise following fugitive dust emissions generated by construction phase activities, as well as road vehicle exhaust emissions associated with vehicle movements generated during operation. Potential impacts were therefore assessed against industry standard guidance.
- iii. Construction phase impacts were assessed in accordance with the Institute of Air Quality Management methodology. Assuming the implementation of good practice dust control measures, air quality impacts relating to fugitive dust emissions are predicted to be not significant.
- iv. Operational road vehicle exhaust emissions impacts were modelled and assessed against the significance criteria provided by the Environmental Protection UK and Institute of Air Quality Management guidance. The dispersion modelling indicated that predicted impacts as a result of operational phase emissions were predicted to be not significant at all sensitive locations in the vicinity of the site.
- v. In summary and considering all the above, it is predicted with confidence that air quality impacts associated with the proposed development are deemed not significant and should not form a constraint to planning consent.

1.0 Introduction

1.1 Background

- 1.1.1 Enzygo Limited was commissioned by Russells Limited to produce an Air Quality Assessment in support of a planning application for an industrial development at New Smithfield Market, Manchester, referred to as the 'Proposed Development'.
- 1.1.2 Enzygo understands that the Proposed Development comprises the demolition of existing buildings and the erection of two warehouse units totalling 11,563 m² (Classes B8 with ancillary offices), alongside associated infrastructure and access.
- 1.1.3 Pollutant emissions associated with construction activities and traffic generated during operation have potential to cause impacts at sensitive locations within the vicinity of the site. An Air Quality Assessment has been undertaken to assess the significance of these impacts in line with the requirements of the National Planning Policy Framework (NPPF).

1.2 Site Location and Context

- 1.2.1 The Proposed Development is located within the New Smithfield Market, Manchester which is sited in a well-established commercial/industrial area. The proposed site is located at approximate National Grid Reference (NGR): 388520, 397170.
- 1.2.2 The site will occupy an area of approximately 3.5 ha bounded to by existing industrial and commercial land uses adjacent to Ashton Old Road and Cornwall Street. The closest 'highly' sensitive receptor locations are situated approximately 70 m southeast of the site boundary along Cherry Street, residential properties are also located further afield adjacent to the local A-road network.
- 1.2.3 With regards to significant emission source the Greater Manchester Authority Air Quality Management Area (AQMA) is located 90 m north of the site, which covers arterial traffic routes, including A635 Ashton Old Road.
- 1.2.4 Reference should be made to Figure 1 within Appendix A for a map of the site location and AQMA extents.

2.0 Legislation Guidance and Policy

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

- European Union (EU) Directive 2008/50/EC;
- The National Planning Policy Framework (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 (1995) (Part IV);
- 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, DEFRA, April 2021;²
- Guidance on the Assessment of Dust from Demolition and Construction, Institute of Air Quality Management (IAQM), v1.1, June 2016³; and
- Land-Use Planning and Development Control: Planning for Air Quality, Environmental Protection UK and IAQM, January 2017⁴

2.1 UK Legislation and National Strategy

2.1.1 Government policy requires the Secretary of State to publish a national Air Quality Strategy (AQS). The national AQS¹ produced by the Department for Environment, Food and Rural Affairs (DEFRA) sets out the framework to reducing adverse impacts of air pollution upon human health, vegetation, and ecosystems. To achieve this the AQS defines air quality objectives (AQOs) for 10 key pollutant species, including Nitrogen Dioxide (NO₂), fine Particulate Matter (PM₁₀ and PM_{2.5}), Carbon Monoxide (CO), Sulphur Dioxide (SO₂), Benzene (C₆H₆), Lead (Pb), Ozone (O₃), polycyclic aromatic hydrocarbons (PAHs) and 1,3- butadiene.

2.1.2 In accordance with the Environment Act (1995), Local Authorities (LAs) have an obligation to periodically review and assess air quality within their administration to determine if specified pollutants are exceeding relevant objectives. This review involves the assessment of present and likely future air quality and is termed Local Air Quality Management (LAQM).

2.1.3 Should the LAQM process identify areas which are predicted to or currently exceeding relevant AQOs the LA is required to designate an Air Quality Management Area (AQMA). The AQMA is then accompanied by an Air Quality Action Plan (AQAP) which sets various measures and polices to improve air quality with the goal of restoring compliance with the AQOs. The process of LAQM is informed by DEFRA's Technical Guidance LAQM (TG16)².

2.1.4 European Directive 2008/50/EC also sets out a similar approach to the AQS and defines limit values for the protection of human health and ecosystems. The Environmental Permitting

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

² Local Air Quality Management Technical Guidance 2016 LAQM.(TG16), DEFRA, April 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, January 2017.

(England and Wales) (Amendment) (EU Exit) Regulations 2019 ensures that the Environmental Permitting (EP) regime can continue following the UK's exit from the European Union (EU).

2.1.5 The regulations state also that exceedances of the objectives should be assessed in relation to air quality at locations which are situated outside of buildings or other natural or man-made structures, above or below ground, and where members of the public are regularly present"

2.1.6 The limits values, objectives and target values which are applicable to this assessment are summarised in Table 1 with relation to human health receptors.

Table 1 Air Quality Objectives

Pollutant	Air Quality Objectives	
	Concentration ($\mu\text{g}/\text{m}^3$)	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

2.1.7 LAQM (TG16)² specifies locations where the AQOs should be applied as detailed in Table 2.

Table 2 Where Air Quality Objectives Apply

Averaging Period	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 facades of offices and 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	As above together with hotels, and 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	As above, and 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

2.1.8 Based on the B8 land use the Proposed Development would be sensitive to 24 hour and 1 hour mean objectives as detailed in Table 2.

2.2 Local Planning Policy

Manchester City Council Core Strategy

2.2.1 Manchester City Council (MCC) has produced their local planning strategy, on 11th July 2012 which sets out the council's vision and strategy for the district until 2027. A review of the Core Strategy document highlighted the following policy text in relation to air quality:

- **Policy DM1: Development Management**

All development should have regard to the following specific issues for which more detailed guidance may be given within a supplementary planning document:-

Effects on amenity, including privacy, light, noise, vibration, air quality, odours, litter, vermin, birds, road safety and traffic generation. This could also include proposals which would be sensitive to existing environmental conditions, such as noise.

- **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 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.*

- **Policy T1: Sustainable Transport**

To deliver a sustainable, high quality, integrated transport system to encourage modal shift away from car travel to public transport, cycling and walking, to support the needs of residents and businesses and to prepare for carbon free modes of transport, the Council will support proposals that:

[...]

- *Would reduce the negative impacts of road traffic, for example, congestion, air pollution and road accident casualties*

2.2.2 Reference has been made to these policies during the undertaking of this Air Quality Assessment by assessing effects on amenity and the impacts of construction dust and road vehicle exhaust emissions on nearby existing sensitive locations and the Greater Manchester Authority AQMA.

3.0 Methodology

Emissions generated by the Proposed Development during construction and operation have potential to cause impacts at sensitive locations. These have been assessed in accordance with the following methodology.

3.1 Construction Phase Impacts

3.1.1 There is potential for fugitive dust impacts to occur at sensitive locations as a result of demolition, earthworks, construction and trackout activities during the construction phase of the Proposed Development. A qualitative assessment will be undertaken in accordance with the methodology outlined within the IAQM document 'Guidance on the Assessment of Dust from Demolition and Construction'³.

3.1.2 The assessment will identify specific control measures to be implemented on site which aim to reduce residual fugitive dust impacts.

3.1.3 Appendix D details the IAQM methodology.

3.2 Operational Phase Site Exposure

3.2.1 The suitability of the site with regards to future pollutant exposure will be determined by a review of the latest air quality monitoring data provided by MCC⁵, predicted background pollutant concentrations produced by DEFRA⁶, and location of AQMAs and significant emission sources.

3.2.2 The proposed industrial site does not include any relevant exposure to long term pollutant concentrations. In accordance with LAQM (TG16)² only 1-hour and 24-hour objectives will be considered with relation to onsite pollutant exposure.

3.3 Operational Phase Impacts

3.3.1 Potential operational impacts associated with vehicles travelling to and from the site will be defined by predicting pollutant concentrations at sensitive locations with and without the Proposed Development in place using dispersion modelling and the following assessment scenarios:

- 2019 as baseline year for verification against latest ratified data;
- Opening year do-minimum (DM) – Traffic flows for 2023 should the proposals not proceed; and
- Opening year do-something (DS) – Traffic flows for 2023 should the proposals be completed, in combination with addition of traffic generated by the Proposed Development.

EPUK and IAQM Impact Significance Criteria

3.3.2 Receptors potentially sensitive to changes in pollutant concentrations were identified within the assessment extents. LAQM (TG16)² provides the following examples of where annual mean AQOs should apply:

⁵ <https://cleanairgm.com/data-hub/monitoring-reports/>

⁶ <https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2018>

- Residential properties;
- Schools;
- Hospitals; and
- Care homes.

3.3.3 The sensitivity impact significance of each receptor was defined in accordance with the criteria shown in Table 3. These are based upon the guidance provided within the EPUK and IAQM guidance⁴.

Table 3 EPUK and IAQM Assessment Significance Criteria

Long Term Average Concentration	% Change in Concentration Relative to AQO			
	1	2-5	6-10	>10
75% or less of AQO	Negligible	Negligible	Slight	Moderate
76 - 94% of AQO	Negligible	Slight	Moderate	Moderate
95 - 102% of AQO	Slight	Moderate	Moderate	Substantial
103 - 109% of AQO	Moderate	Moderate	Substantial	Substantial

3.3.4 The criteria shown in Table 3 is adapted from the EPUK and IAQM guidance⁴ with sensitivity descriptors included to allow comparisons of various air quality impacts. It should be noted that changes of 0%, i.e. less than 0.5%, will be described as negligible in accordance with the EPUK and IAQM guidance⁴.

3.3.5 Following the prediction of impacts at discrete receptor locations utilising the criteria in Table 3 the EPUK and IAQM guidance⁴ states that this framework is to be used as a starting point to make a judgement on significance of effect but other influences might need to be accounted for. Whilst impacts might be determined as 'slight', 'moderate' or 'substantial' at individual receptors, overall effect might not necessarily be deemed as significant in some circumstances.

3.3.6 Full details of data used for the modelling assessment and results are presented in Appendix B and Appendix C, respectively.

4.0 Baseline Conditions

Available air quality data and the surrounding context was reviewed to provide a baseline for assessment. These are detailed in the following sections.

4.1 Emission Sources

4.1.1 The main sources pollutant emissions within the vicinity of the Proposed Development site are road emissions associated with the A635 (Ashton Old Road), with the site located approximately 85 m south of the A635 at the nearest point. Therefore, the site can be considered as being close to a significant source of road vehicle exhaust emissions.

4.1.2 The Proposed Development is located within an Industrial/commercial area and processes associated with business in the vicinity are likely regulated by either the Environment Agency (EA) (Part A1 processes) or MCC (Part A2 and Part B processes). As such, the planning regime must therefore assume that the permitting regime will ensure the processes comply with their permits and will not lead to significant emission impacts at the Proposed Development.

4.2 Air Quality Management Areas

4.2.1 DEFRA's AQMA database ⁷ indicates that the Greater Manchester AQMA is located approximately 90 m north of the Proposed Development. It is therefore considered that impacts from the Proposed Development could affect sensitive receptors in this area. Similarly, the proximity of the AQMA could be an indication of elevated on-site NO₂ concentrations.

4.2.2 The Greater Manchester AQMA has therefore been considered further during the preparation of the assessment. This has been achieved by modelling impacts at worse case discrete receptor locations within the AQMA and assessing significance.

4.3 Air Quality Monitoring

4.3.1 To provide further context to existing air quality within the vicinity of the site the latest MCC monitoring data⁸ was reviewed which indicated that MCC undertake an extensive monitoring network with three automatic analysers and forty-four passive diffusion tubes across the city.

4.3.2 A review of this data indicated the closest automatic analyser as the Oxford Road (MAN1) station, located 4.3 km west of the Proposed Development. Given the city centre location of the analyser, within a street canyon, this station is unlikely to provide comparable conditions when compared to the Proposed Development setting and has not considered a reliable source of baseline data for the site.

4.3.3 A review of the diffusion tube monitoring locations identified indicated seven sites which provide good representations of the surrounding environment. Data is presented in Table 3 with exceedances of the annual mean AQO highlighted in **bold**.

⁷ https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=123

⁸ <https://cleanaigm.com/data-hub/diffusion-tubes/>

Table 4 Roadside Diffusion Tube Monitoring Results

Site ID and Name	NGR (m)		Distance to Site (m)	Annual Mean Concentration ($\mu\text{g}/\text{m}^3$)		
	X	Y		2017	2018	2019
MAN28 – Ashton Old Road	387951	397430	622	38.5	37.1	36.1
MAN73 – Hyde Road	388601	396048	1,116	39.0	38.7	38.0
MAN86 - Pottery Lane	387150	396808	1,406	35.7	32.0	33.6
MAN87 - Hyde Road/Pottery Lane	387020	396561	1,607	36.7	33.5	34.0
MAN89 - Wenlock Way	386681	396806	1,864	34.9	30.6	30.3
MAN95 – Ashton Old Road	386568	397580	1,988			43.4
MAN88- Hyde Road/Clowes Street Way	386536	396699	2,028	47.7	45.3	43.3

*All monitoring locations classified as 'Urban Traffic' sites.

4.3.4 NO₂ diffusion tube monitoring data from 2017 to 2019 indicate historical exceedances of the annual mean AQO at two locations (MAN95 and MAN88), which are well above the 40 $\mu\text{g}/\text{m}^3$ objective. The historical data does however present marginal improvements to annual mean NO₂ concentrations with the majority of the results decreasing from 2017.

4.3.5 The closest location to the site (MAN28) indicates that A635 roadside concentrations are marginal to the annual mean AQO for NO₂. Considering that the Proposed Development is setback by 90 m from the A635 it is not expected that future site occupiers would be exposed to similar or unacceptable NO₂ concentrations.

4.3.6 Figure 2 within Appendix A for a graphical representation of the passive monitoring locations.

4.4 DEFRA Background Concentrations

4.4.1 To assist LA their air quality Review and Assessments, DEFRA have produced background concentration maps for NO₂, PM₁₀ and PM_{2.5}. Predictions are based on a 1 km by 1 km grid basis across the entire UK with the Proposed Development located within the NGR: 388500, 397500.

4.4.2 Data for this location was downloaded for the most reliable baseline year (2019) and the predicted development opening year (2023). Table 5 presents the data with comparisons against the relevant AQO.

Table 5 DEFRA Background Pollutant Concentrations

Pollutant	Predicted Background Concentration ($\mu\text{g}/\text{m}^3$)		Percentage of Annual Mean AQO	
	2019	2023	2019	2023
NO ₂	19.03	16.43	48%	41%
PM ₁₀	12.58	12.00	31%	30%
PM _{2.5}	8.53	8.11	34%	32%

4.4.3 Based on DEFRA background predictions, concentrations of NO₂ and PM do not exceed the relevant AQOs during the baseline or predicted opening year. Background concentrations are well below the AQOs and provide suitable headroom with relation to road vehicle exhaust emissions from the adjacent road network. The data also indicates a reduction to predicted concentrations in future years and suggest an improvement to local air quality.

4.4.4 The review of available data provided by MCC and DEFRA suggests that air quality within the vicinity of the site is favourable with annual concentrations achieving relevant AQOs. It is therefore considered unlikely that future site users would be subjected to unacceptable exposure and associated operational impacts are unlikely to lead to significant effects given baseline background conditions are well below 75% of the AQOs.

4.5 Sensitive Receptors

4.5.1 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.

Construction Phase Sensitive Receptors

4.5.2 No national or European ecological designations are located 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 are not considered further in this assessment.

4.5.3 Human receptors sensitive to potential dust impacts during construction activities were identified from a desk-top study of the area up to 350m from the development boundary. These are summarised in Section 5.1.

4.5.4 Reference should be made to Figure 3 and 4 within Appendix A for a graphical representation of construction phase dust buffer zones.

Operational Phase Sensitive Receptors

4.5.5 A desk-top study was undertaken to identify any sensitive receptor locations in the vicinity of the site that require specific consideration during the assessment and are summarised Table 6.

Table 6 Existing Sensitive Human Receptors

Receptor Name		NGR (m)		Height (m)
		X	Y	
R1	Varna Community Primary School	388776.9	397352.9	1.5
R2	Ettrick Close	388871.0	397402.0	1.5
R3	Ashton Old Road	389355.7	397365.1	1.5
R4	Ashton Old Road	389395.8	397365.1	1.5
R5	Florence House Medical Practice	389409.7	397342.5	1.5
R6	Capital Road	389585.9	397334.7	1.5
R7	South Street	388368.7	397457.4	1.5
R8	Godley Close	388281.2	397487.9	1.5
R9	Silkstone Street	388219.7	397460.1	1.5
R10	Ashton Old Road	388211.5	397425.9	1.5
R11	St Barnabas C of E Primary Academy	387799.8	397541.6	1.5
R12	Manchester College	387593.8	397399.8	1.5
R13	Turing Close	387268.3	397542.6	1.5
R14	Alan Turing Way	387223.3	397541.5	1.5

Receptor Name		NGR (m)		Height (m)
		X	Y	
R15	Churchfield Walk	387248.9	397693.6	1.5
R16	Five Oak Family Practice	387205.7	397688.2	1.5
R17	The Cornerstone Centre	387155.0	397532.6	1.5
R18	Falconwood Way	387103.5	397539.7	1.5
R19	Bridge College	387255.9	397350.9	1.5
R20	Miles Street	387184.7	397031.2	1.5
R21	Bridge End Close	387214.8	396861.5	1.5
R22	Pottery Lane	387133.7	396844.0	1.5

4.5.6 Receptors modelled at 1.5m to represent the average UK “breathing height” above ground level. Reference should be made to Figure 6 within Appendix A for a graphical representation of operational phase emission sensitive human receptor locations.

5.0 Assessment

There is the potential for air quality impacts as a result of the construction and operation phases of the Proposed Development. These are assessed in the following Sections.

5.1 Construction Phase Impact Assessment

5.1.1 A desk top screening assessment (Step 1) identified sensitive receptors within 350m of the site boundary, and within 50m of the anticipated trackout. These are summarised in Table 7.

Table 7 Sensitive Receptor Counts

Distance from Site or Trackout Routes (m)	Approximate Number of Receptors
Demolition, Earthworks and Construction	
Less than 20	10 - 100
20 – 50	More than 100
50 – 100	More than 100
100 – 350	More than 100
Trackout	
Less than 20	More than 100
20 – 50	More than 100

5.1.2 A detailed assessment of potential dust impacts is therefore required. This is detailed in the following sections. Reference should be made to Figure 3 and 4 within Appendix A for receptor buffer zones.

Magnitude

5.1.3 The scale and nature of the works has been determined to assess the magnitude (Step 2A) of fugitive dust emissions arising from each construction phase activity. The determination of magnitude was based upon the criteria detailed in Appendix D.

Demolition

5.1.4 The proposed development will include the demolition of the existing buildings. Existing structures provide a low potential for dust release (e.g. metal cladding or timber) and the magnitude is considered **small**.

Earthworks

5.1.5 The Proposed Development site is unlikely to require significant imports or exports of material to prepare for construction. Based on the estimated site area of 35,000m² combined with the limited material movements the magnitude of potential dust emissions related to earthwork activities is considered **medium**.

Construction

5.1.6 The proposed development comprises the construction of two 15 m tall industrial units totalling 11,563 m². Combined with construction materials with a low potential for dust release (e.g. metal cladding or timber) the magnitude is considered **medium**.

Trackout

5.1.7 Information on the number of HDV trips generated during the construction phase was not available at the time of assessment. Based on the site area, it is anticipated that the unpaved road length is likely to be less than 50 m which provides a **small** magnitude.

5.1.8 A summary of the construction phase magnitudes is detailed in Table 8.

Table 8 Dust Emission Magnitude

Demolition	Earthworks	Construction	Trackout
Small	Medium	Medium	Small

Sensitivity

5.1.9 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. Commercial and industrial businesses are adjacent to all boundaries, with the closest residential properties located 70 m from potential activities. To ensure a worse case the surrounding area was defined at highly sensitive. Specific receptor sensitivities for both dust soiling and human health is summarised below.

Table 9 Receptor Sensitivity

Impact	Demolition	Earthworks	Construction	Trackout
Dust Soiling	High	High	High	High
Human Health	Low	Low	Low	Medium

Risk

5.1.10 The next stage of the assessment (Step 2C) combines the dust magnitude and receptor sensitivity defined above to determine the overall risk with no mitigation applied. This is summarised in Table 10.

Table 10 Summary of Unmitigated Dust Risk

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

5.1.11 Following the determination of risk for each activity, the final step (Step 3) is to details necessary mitigation measures to reduce impacts during the construction phase. These measures have been adapted for the Proposed Development and summarised in Table 12 within Section 6.1.

5.2 On-site Exposure

5.2.1 The proposed industrial warehouse units do not present any relevant exposure to long term pollutant concentrations. 1-hour NO₂ and 24-hour PM₁₀ short term pollutant averaging periods were therefore reviewed to determine site suitability.

5.2.2 A review of representative MCC monitoring data indicates that on site NO₂ concentrations are likely to be below the annual mean AQO during occupation. The Ashton Old Road (MAN28) diffusion monitor, located with the AQMA and 1 m from the A653, measured a maximum annual mean concentration of 36.1 µg/m³ during 2019.

- 5.2.3 In the absence of 1-hour NO₂ monitoring data, section 7.91 of LAQM (TG16) guidance states 1-hour mean exceedance are unlikely to occur where annual mean concentrations are below 60 µg/m³. Given the worst-case monitoring results provided by MAN28 (36.1 µg/m³) it is very unlikely that the 1-hour AQO for NO₂ would be exceeded across the site.
- 5.2.4 No 24-hour PM₁₀ monitoring data is currently available from MCC within the vicinity of the Proposed Development. However, Section 6.34 of the EPUK and IAQM guidance⁴, suggests that annual mean PM₁₀ concentrations above 32 µg/m³ equates to exceedances of the 24-hour mean AQO. The predicted background concentrations provided by DEFRA show a maximum annual mean concentration of 12.38 µg/m³ which is expected to improve in future years. It is therefore unlikely that the 24-hour mean AQO for PM₁₀ would be exceeded at proposed sensitive use.
- 5.2.5 When considering MCC monitoring results, DEFRA background concentrations and distances to the closest A-road and the AQMA, it is not expected that unacceptable pollutant exposure would be present across the Proposed Development during occupation.

5.3 Road Traffic Exhaust Impacts

- 5.3.1 The Proposed Development has the potential to cause impacts at nearby sensitive locations. This was assessed through dispersion modelling, with the results presented in the following Sections.
- 5.3.2 Based on data from Eddison's, it is expected that there will be a maximum of 816 AADT trips with 324 HDV trips (39.7%). Based on the anticipated AADT trip generation a dispersion modelling assessment was undertaken to quantify potential changes in pollutant concentrations at sensitive locations in the vicinity of the site.
- 5.3.3 Predicted impact significance at individual receptors on annual mean NO₂, PM₁₀ and PM_{2.5} concentrations based on the criteria given in Table 3 are summarised below.

Table 11 Summary of Impacts at Sensitive Receptors

Pollutant and Period	Receptors	Significance of Impact
Annual Mean NO ₂	All Receptors	Negligible
Annual Mean PM ₁₀	All Receptors	Negligible
Annual Mean PM _{2.5}	All Receptors	Negligible

- 5.3.4 As shown in Table 11 the significance of impacts was predicted to be negligible at all sensitive receptors.
- 5.3.5 The overall significance of potential impacts was determined to be **not significant** in accordance with the EPUK and IAQM guidance⁴. The use of robust assumptions was considered to provide sufficient results confidence for an assessment of this nature.
- 5.3.6 Full assessment results can be found in Appendix C.

Impact Significance

- 5.3.7 The overall significance of operational phase road traffic emission impacts for 2023 was determined as **not significant** and no further mitigation is required to offset development generated impacts. This was based on the predicted impacts at discrete receptor locations and the considerations outlined in Section 5.2.

6.0 Mitigation

6.1 Construction Phase

6.1.1 The IAQM guidance³ provides several control measures to reduce fugitive dust impacts during the construction phase. These measures have been adapted based on professional judgment for the Proposed Development site and summarised in Table 12.

Table 12 Fugitive Dust Mitigation Measures

Impact	Control Measure and Requirement		
Communications	1	Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.	H
	2	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.	H
	3	Display the head or regional office contact information	H
	4	Develop and implement a Dust Management Plan, which may include measures to control other emissions, approved by the Local Authority.	H
Site Management	5	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.	H
	6	Make the complaints log available to the local authority when asked	H
	7	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.	H
	8	Hold regular liaison meetings with other high-risk construction sites within 500 m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/ deliveries which might be using the same strategic road network routes.	H
Monitoring	9	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 windowsills within 100 m of site boundary, with cleaning to be provided if necessary.	H
	10	Carry out regular site inspections to monitor compliance with the Dust Management Plan, record inspection results, and make an inspection log available to the local authority when asked	H
	11	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.	H
Preparing & Maintaining Site	13	Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.	H
	14	Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.	H
	15	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	H
	16	Avoid site runoff of water or mud	H

Impact	Control Measure and Requirement		
	17	Keep site fencing, barriers and scaffolding clean using wet methods	H
	18	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.	H
	19	Cover, seed, or fence stockpiles to prevent wind whipping	H
Operating Vehicle/Machinery & Sustainable Travel	20	Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone and the London NRMM standards, where applicable	H
	21	Ensure all vehicles switch off engines when stationary - no idling vehicles	H
	22	Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.	H
	23	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)	H
	24	Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials	H
	25	Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing)	H
Operations	26	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.	H
	27	Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.	H
	28	Use enclosed chutes and conveyors and covered skips.	H
	29	Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.	H
	30	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.	H
Waste Management	31	Avoid bonfires and burning of waste materials	H
Demolition	32	Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).	D
	33	Ensure effective water suppression is used during demolition operations. Handheld 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.	H
	34	Avoid explosive blasting, using appropriate manual or mechanical alternatives	H
	35	Bag and remove any biological debris or damp down such material before demolition	H

Impact	Control Measure and Requirement		
Earthworks & Construction	36	Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.	H
	37	Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable	H
	38	Only remove the cover in small areas during work and not all at once	H
	39	Avoid scabbling (roughening of concrete surfaces) if possible	H
	40	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.	H
	41	Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.	H
	42	For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust.	D
Trackout	43	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.	D
	44	Avoid dry sweeping of large areas.	D
	45	Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.	D
	47	Record all inspections of haul routes and any subsequent action in a site logbook.	D
	49	Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).	D

*D – desired

*H – highly recommended

6.1.2 Assuming the relevant mitigation measures outlined in Table 12 are implemented, the residual effect from all dust generating activities (Step 4) is predicted to be negligible and therefore **not significant** in accordance with the IAQM guidance³.

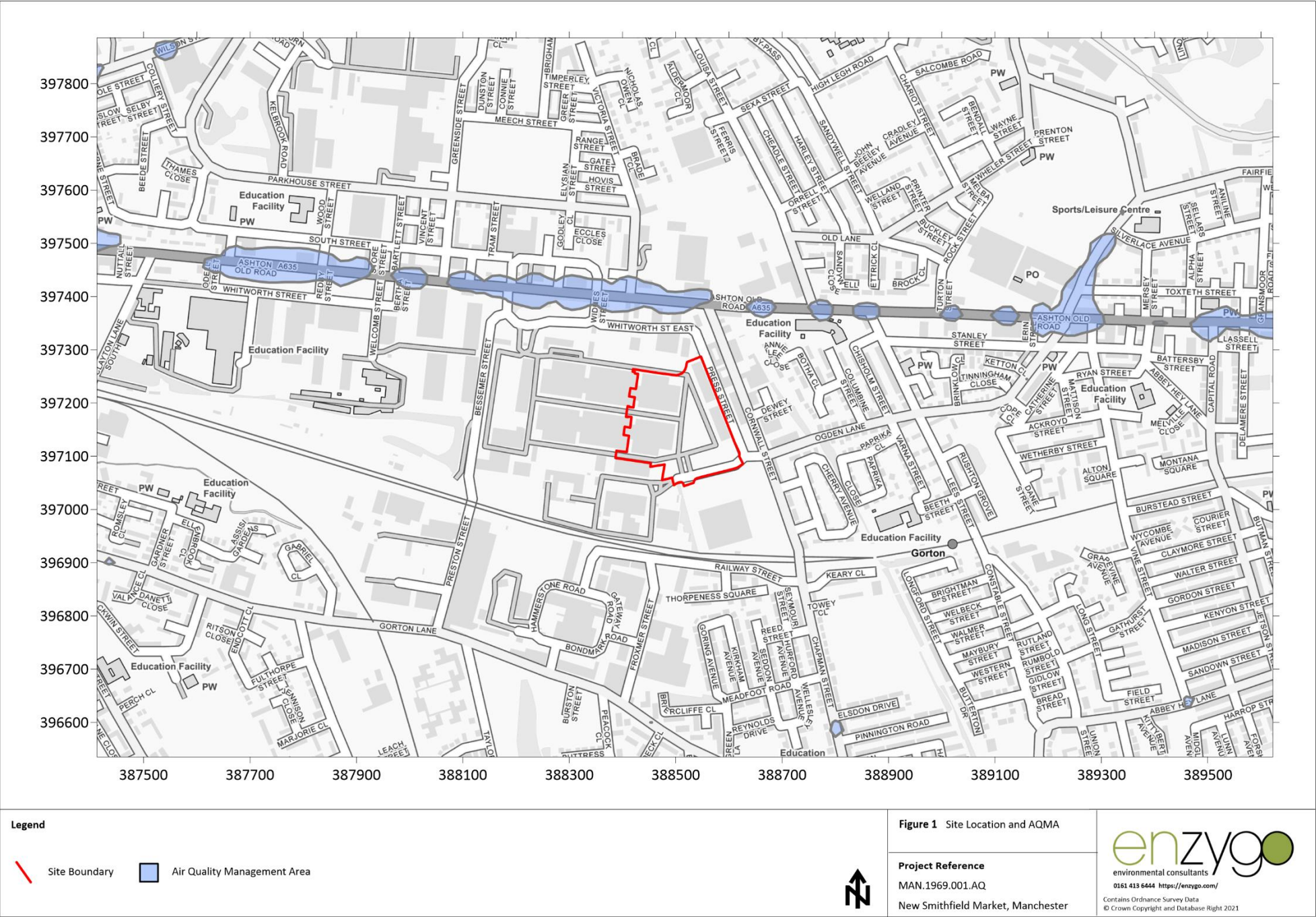
7.0 Conclusions

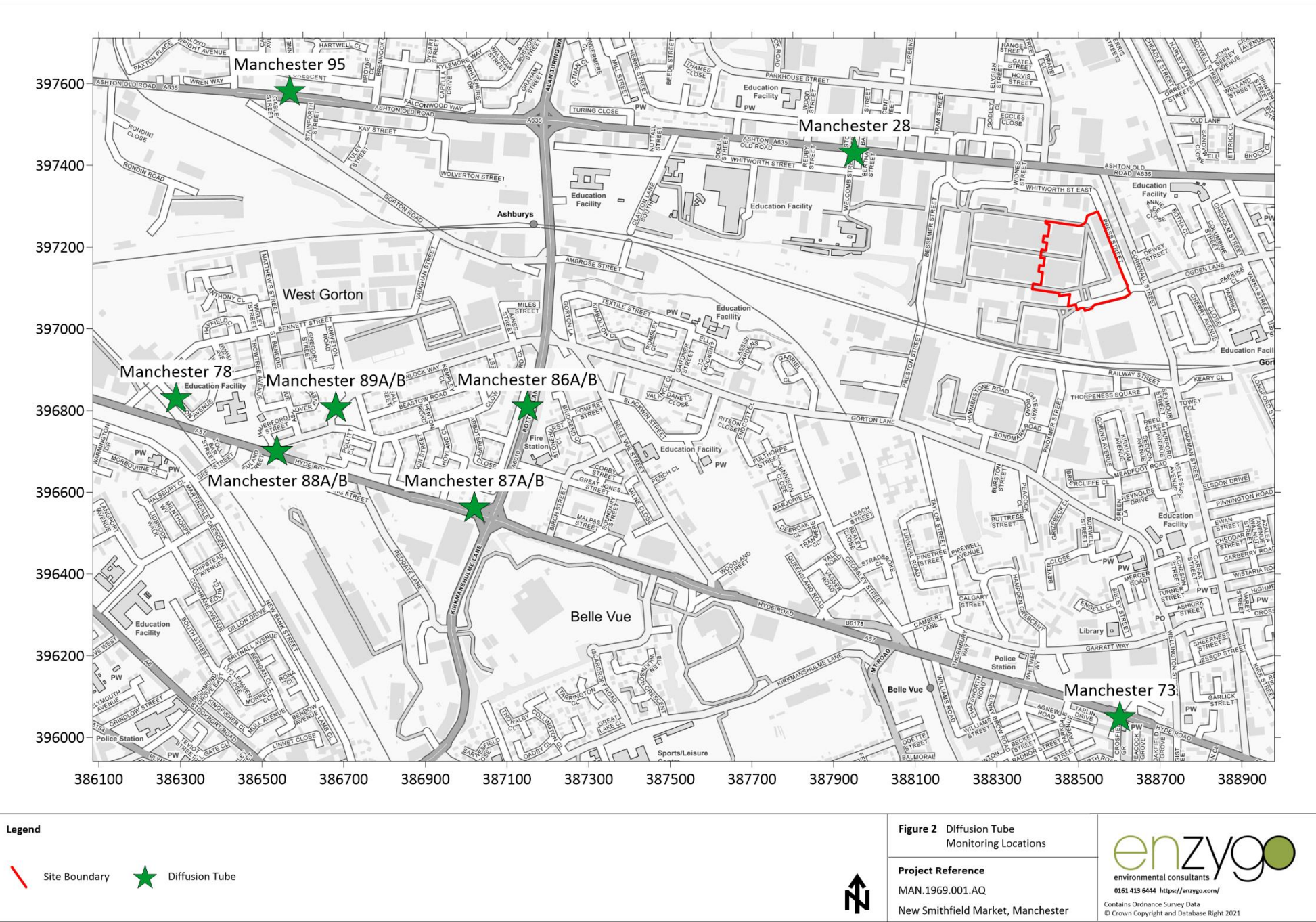
- 7.1.1 Pollutant emissions associated with construction activities and traffic generated during operation have potential to cause impacts at sensitive locations within the vicinity of the site. An Air Quality Assessment has been undertaken to assess the significance of these impacts in line with the requirements of the NPPF.
- 7.1.2 A qualitative construction dust risk assessment was undertaken in accordance with the IAQM methodology to assess impacts and recommend a mitigation strategy. Assuming good practice and the implementation of suggested dust control measures, detailed in Table 12, residual impacts are predicted to be **not significant**.
- 7.1.3 Potential impacts during the operational phase of the development may occur due to NO₂ and fine PM emissions associated with vehicles travelling to and from the site. A dispersion modelling assessment was undertaken to quantify air quality impacts at sensitive receptor locations
- 7.1.4 Modelled results were verified using monitoring results obtained from MCC.
- 7.1.5 Predicted impacts on NO₂, PM₁₀ and PM_{2.5} concentrations during the operational phase were predicted to be **negligible** at all sensitive receptor locations within the vicinity of the site with no new exceedances as a result of the Proposed Development.
- 7.1.6 The overall significance of potential impacts was determined to be **not significant**, in accordance with the EPUK and IAQM guidance⁴.
- 7.1.7 Based on the assessment results, air quality is not considered a constraint to planning consent and the Proposed Development complies with the NPPF and Policies DM1 and EN16 of the MCC Local Plan.

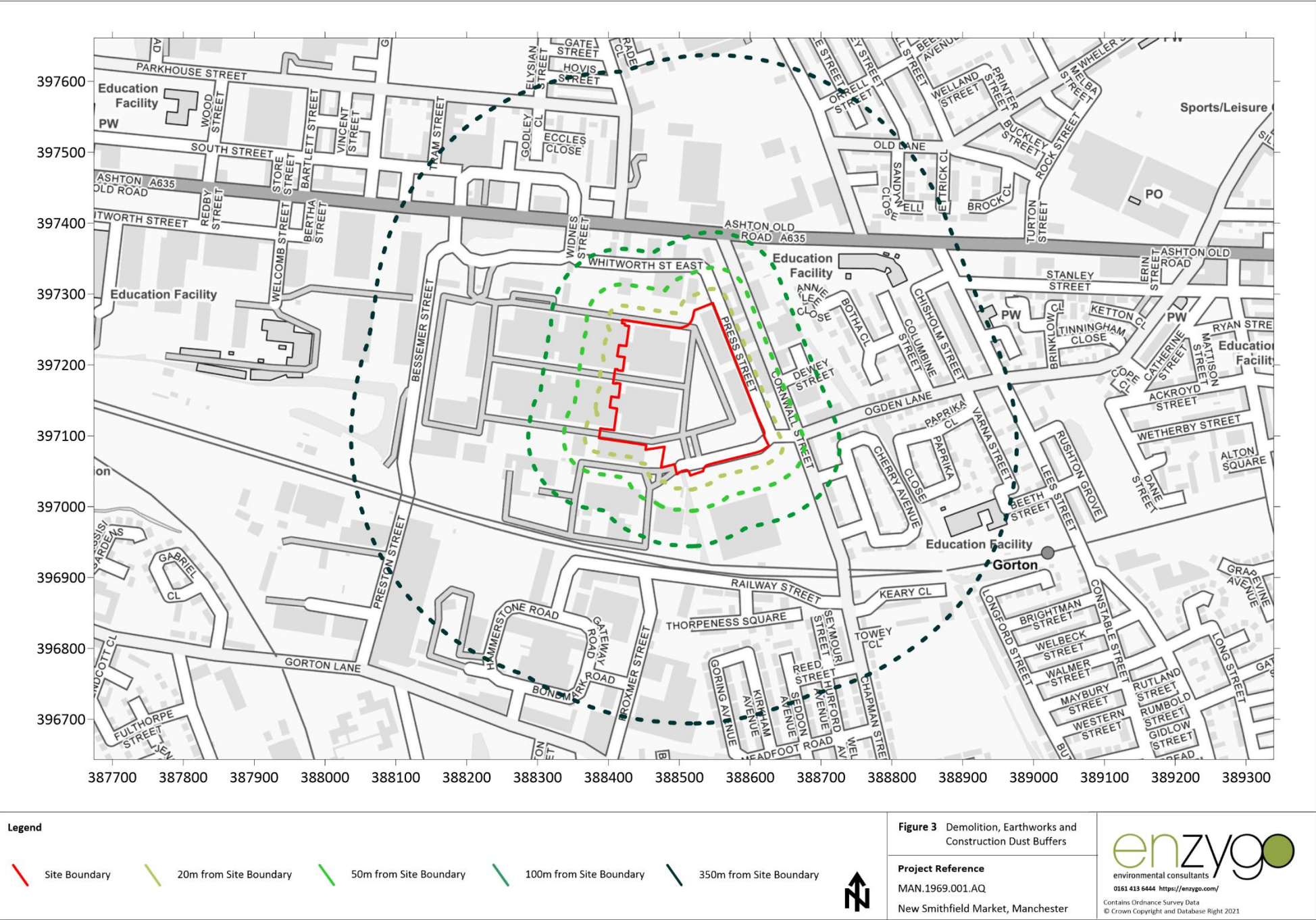
8.0 Abbreviations

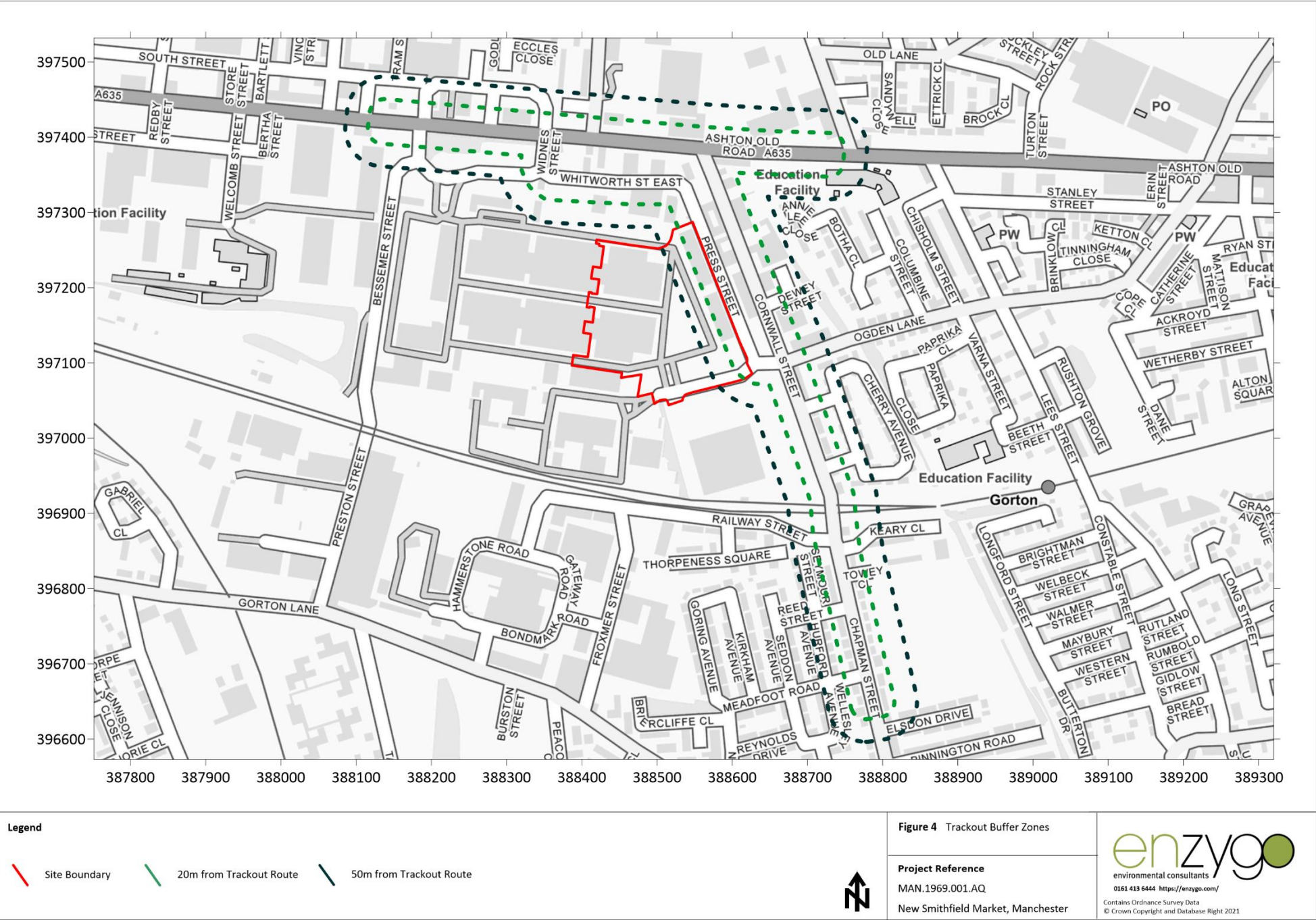
AADT	Annual Average Daily Traffic
ADM	Atmospheric Dispersion Modelling
ADMS	Atmospheric Dispersion Modelling Software
AQAP	Air Quality Action Plan
AQMA	Air Quality Management Area
AQO	Air Quality Objective
AQS	Air Quality Strategy
ASR	Annual Status Report
C ₆ H ₆	Benzene
CERC	Cambridge Environmental Research Consultants
CO	Carbon Monoxide
DEFRA	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
DM	Do Minimum
DS	Do Something
EA	Environment Agency
EPUK	Environmental Protection UK
EU	European Union
HDV	Heavy Duty Vehicle
IAQM	Institute of Air Quality Management
LA	Local Authority
LAQM	Local Air Quality Management
LDV	Light Duty Vehicle
MCC	Manchester City Planning Portal
NGR	National Grid Reference
NO ₂	Nitrogen Dioxide
NO _x	Oxides of nitrogen
NPPF	National Planning Policy Framework
NPPG	National Planning Practice Guidance
O ₃	Ozone
PAHs	Polycyclic Aromatic Hydrocarbons
Pb	Lead
PM ₁₀	Particulate Matter with an aerodynamic diameter less than 10µm
PM _{2.5}	Particulate Matter with an aerodynamic diameter less than 2.5µm
RMSE	Route Mean Square Error
SO ₂	Sulphur Dioxide
z ₀	Roughness Length

Appendix A – Figures









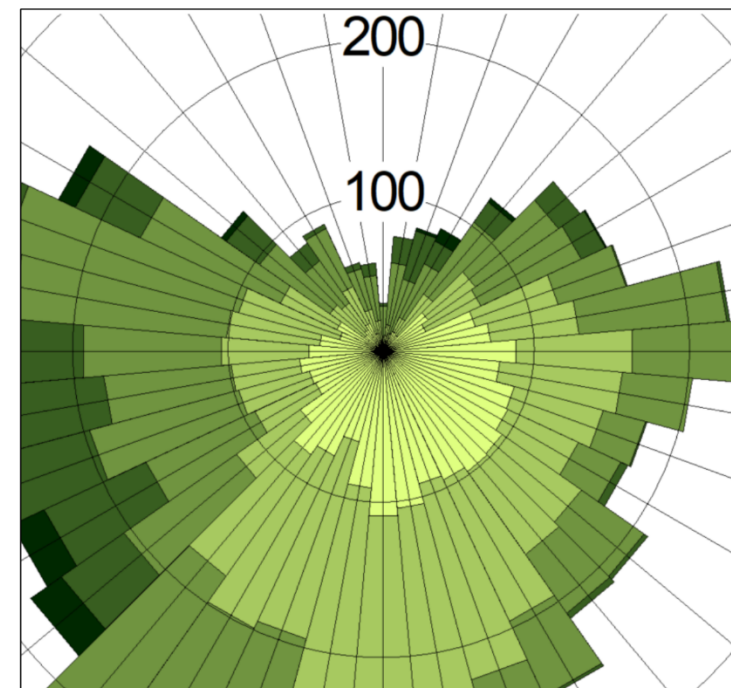
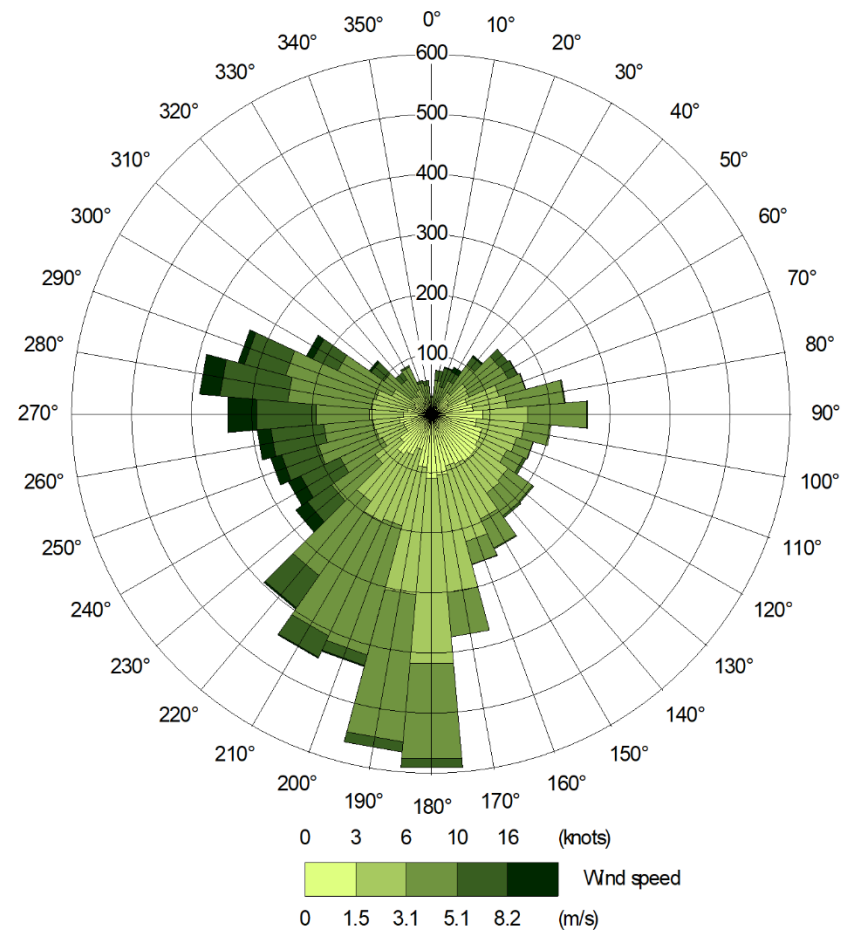
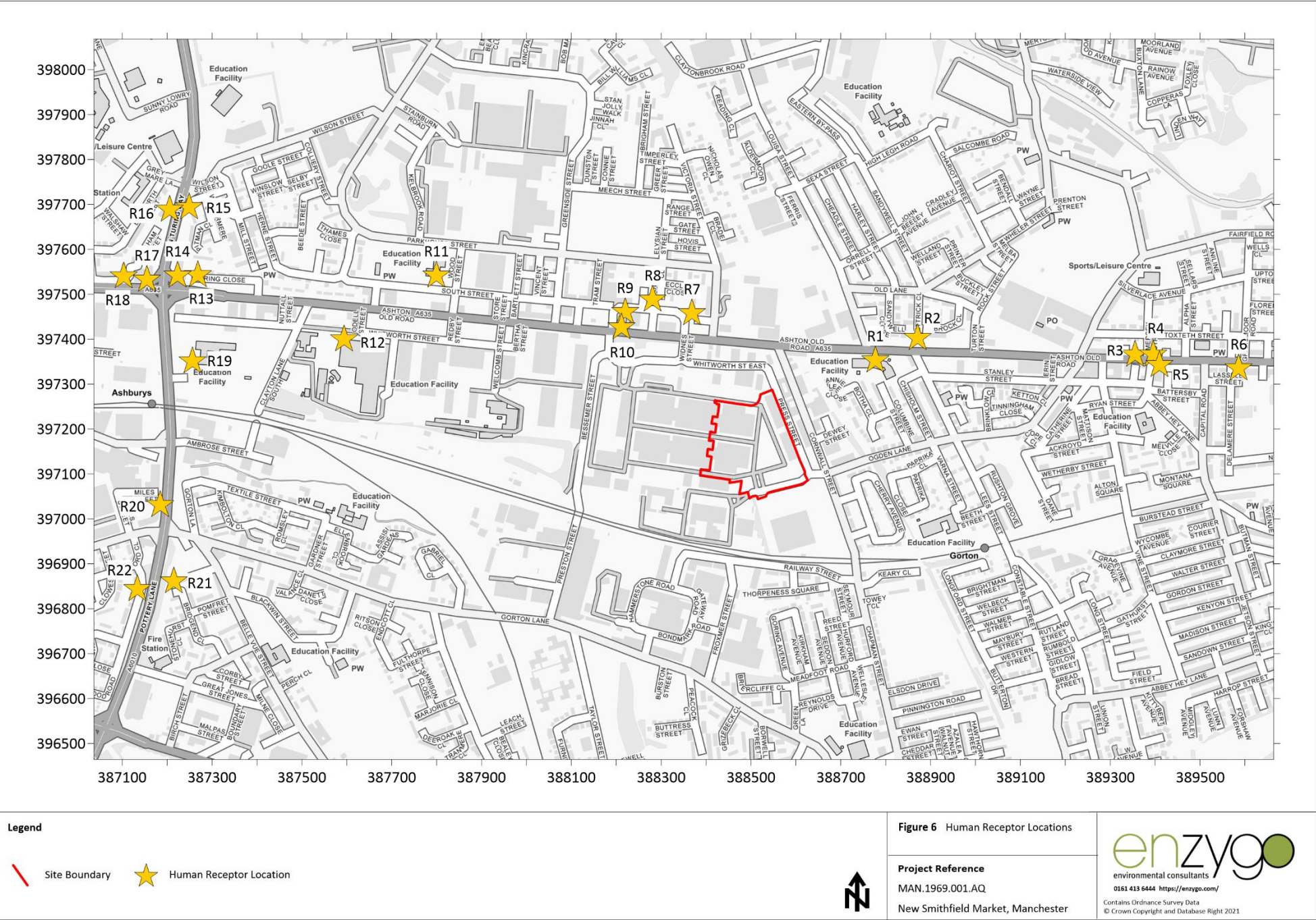


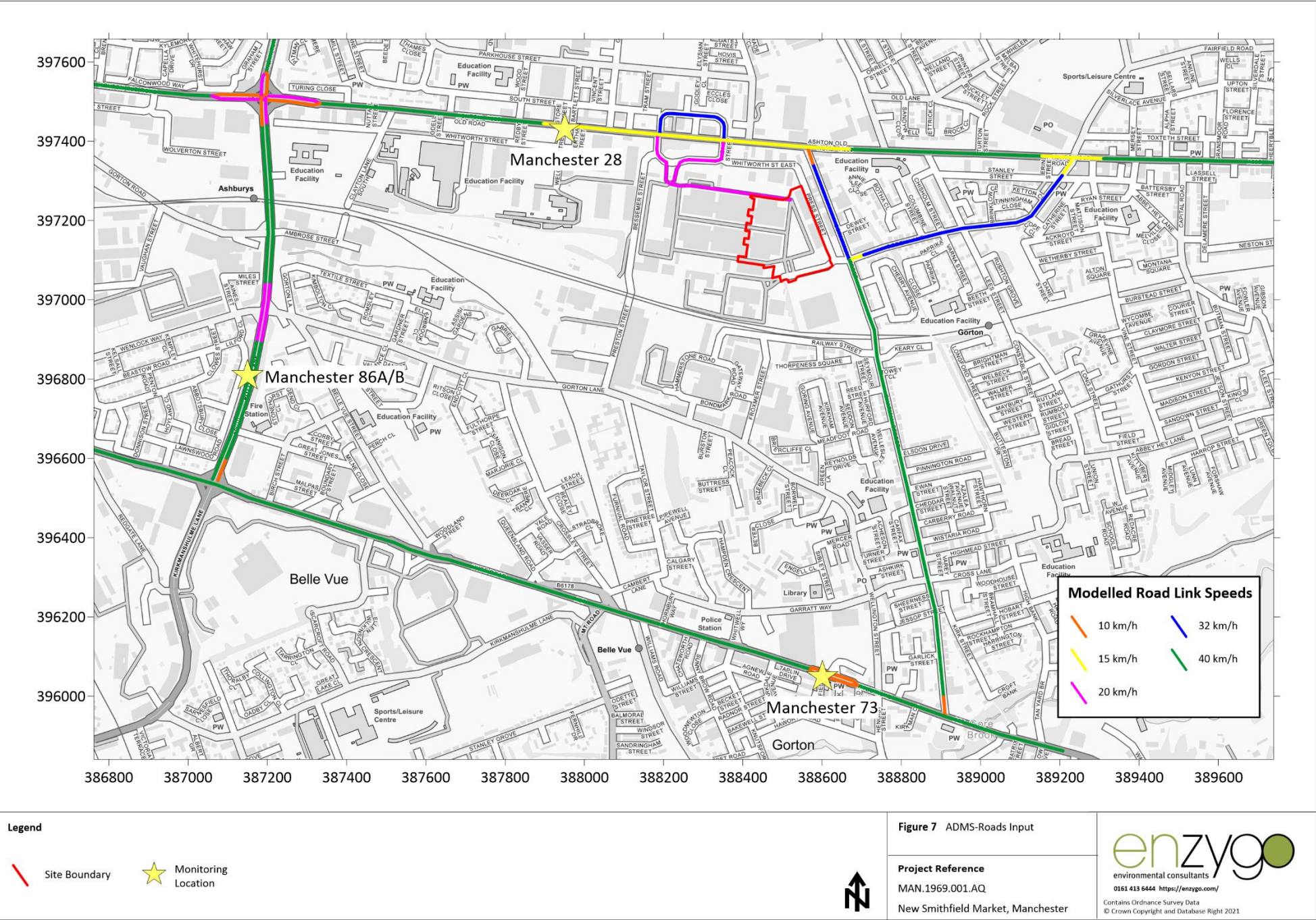
Figure 5 2019 Manchester Ringway
Meteorological Data

Project Reference

MAN.1969.001.AQ

New Smithfield Market, Manchester.





Appendix B – Assessment Inputs

ASSESSMENT INPUTS

Dispersion Model

Dispersion modelling was undertaken using the ADMS-Roads dispersion model (version 5.0) which is developed by Cambridge Environmental Research Consultants (CERC) and is routinely used throughout the UK for the prediction of pollutant dispersion from road sources.

Modelling predictions from this software package are widely accepted by the Environment Agency and DEFRA. The following sections detail the input parameters:

Assessment Area

Ambient concentrations were predicted at distinct receptor locations chosen to represent the most sensitive receptors near to roads affected by the development. Receptor locations are shown in Figure 6 in Appendix A.

Traffic Flow Data

Baseline 2019 traffic data was obtained from the Department for Transport (DfT), which is referenced in DEFRA guidance LAQM (TG16)² as being a suitable source of data for air quality assessments. Data for Cornwall Street and Ogden Lane was unavailable from the DfT and were subsequently obtained from an Air Quality Assessment accompanying a recent planning application (127742/FO/2020) to MCC. Data for South Street was similarly unavailable from the DfT network and was obtained from a road with comparable characteristics. Baseline data for the internal market roads was informed by traffic flows from the existing site use.

Development traffic flows were produced by Eddison's, the appointed traffic consultant, and include both light duty vehicles (LDV) and HDV flows. This provided an AADT of 816 with 324 HDV movements.

Vehicle speeds were also provided or 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 (%)	Vehicle Speed (km/hr)	DfT ID
L1	Cornwall Street	6.3	4,280	10.6	32	*
L2	Clapham Street - A57 Junction	8.3	4,280	10.6	40	*
L3	Clapham Street	9.0	8,589	10.6	10	*
L4	Cornwall Street - A635 Junction	3.5	8,589	10.6	10	*
L5	A635 (Ashton Old Road) - East of A6010	11.8	21,157	4.2	40	57390
L6	A635 (Ashton Old Road) - East of A6010 Signalled Junctions	11.2	21,157	4.2	15	57390
L7	A635 (Ashton Old Road) – Between n Whitworth Street East and Widnes Steet	11.2	21,157	4.2	15	57390
L8	A635 (Ashton Old Road) - East of Widnes Steet	11.2	21,157	4.2	15	57390
L9	A635 (Ashton Old Road) - East of Cornwall Street	11.2	21,157	4.2	40	57390
L10	A635 (Ashton Old Road) - Ogden Lane Road Junction	12.5	21,157	4.2	15	57390

Road Link		Road Width (m)	24 Hour AADT Flow	HDV (%)	Vehicle Speed (km/hr)	DfT ID
L11	A635 (Ashton Old Road) - East of Vine Street	8.4	21,157	4.2	40	57390
L12	A635 (Ashton Old Road East) - A6010 Junction Exit	6.8	10,949	4.3	20	57390
L13	A635 (Ashton Old Road East) - A6010 Junction Approach	10.0	10,208	4.1	10	57390
L14	A635 (Ashton Old Road) - West of A6010	11.3	27,155	4.4	40	27403
L15	A635 (Ashton Old Road West) - A6010 Junction Approach	11.0	13,744	4.3	10	27403
L16	A635 (Ashton Old Road West) - A6010 Junction Exit	7.2	13,411	4.6	20	27403
L17	A6010 (Alan Turing Way)	18.5	28,666	3.7	40	37944
L18	A6010 (Alan Turing Way North) - A635 Junction Exit	8.0	14,973	3.4	20	37944
L19	A6010 (Alan Turing Way South) - A635 Junction Approach	13.1	13,693	3.9	10	37944
L20	A57 (Hyde Road)	10.8	23,160	4.6	40	17931
L21	A57 (Hyde Road) Eastbound	7.1	11,737	4.7	10	17931
L22	A57 (Hyde Road) Westbound	6.9	11,423	4.5	10	17931
L23	A57 (Hyde Road)	11.0	23,160	4.6	40	17931
L24	A6010 (Pottery Lane North) - Free Flow Section	6.5	11,814	4.1	40	99014
L25	A6010 (Pottery Lane North) - Wenlock Way Junction	8.3	11,814	4.1	20	99014
L26	A6010 (Pottery Lane North) - Free Flow Section	6.2	11,814	4.1	40	99014
L27	A6010 (Pottery Lane North) - A635 Junction Approach	12.1	11,814	4.1	10	99014
L28	A6010 (Pottery Lane South) - A635 Junction Exit	8.0	14,838	3.3	20	99014
L29	A6010 (Pottery Lane South) - A57 Junction Approach	7.2	14,838	3.3	10	99014
L30	A6010 (Pottery Lane South) - Free Flow Section	6.5	14,838	3.3	40	99014
L31	A6010 (Pottery Lane South) - Gorton Lane Junction	6.5	14,838	3.3	20	99014
L32	A6010 (Pottery Lane South) - Free Flow Section	6.0	14,838	3.3	40	99014
L33	Ogden Lane - Cornwall Street Junction	7.5	4,280	10.6	15	*
L34	Ogden Lane	6.4	4,280	10.6	32	*
L35	Ogden Lane – A635 Street Junction	7.8	4,280	10.6	15	*
L36	South Street	6.4	675	2.8	32	941777
L37	Internal Market Road	6.3	650	39.7	20	**
L38	Site Exit (Whitworth Street East)	7.0	650	39.7	20	**
L39	Site Entrance (Widnes Street)	7.0	650	39.7	20	**

* Planning Application (127742/FO/2020)

** Baseline Data provide by Eddison's

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 2023 scenarios.

A summary of the 2023 traffic data is shown in Table B2.

Table B2: 2023 Traffic Data

Road Link		DM Scenario		DS Scenario		Additional Flow (AADT)	
		24 Hr AADT Flow	HDV (%)	24 Hr AADT Flow	HDV (%)	LDV	HDV
L1	Cornwall Street	4,610	10.6	4,610	10.6	0	0
L2	Clapham Street - A57 Junction	4,610	10.6	4,610	10.6	0	0
L3	Clapham Street	9,251	10.6	9,251	10.6	0	0
L4	Cornwall Street - A635 Junction	9,251	10.6	9,251	10.6	0	0
L5	A635 (Ashton Old Road) - East of A6010	22,788	4.2	23,115	4.7	326	129
L6	A635 (Ashton Old Road) - East of A6010 Signalled Junctions	22,788	4.2	23,115	4.7	326	129
L7	A635 (Ashton Old Road) - Between Whitworth Street East and Widnes Steet	22,788	4.2	22,788	4.2	0	0
L8	A635 (Ashton Old Road) - East of Widnes Steet	22,788	4.2	23,278	5.0	490	194
L9	A635 (Ashton Old Road) - East of Cornwall Street	22,788	4.2	23,278	5.0	490	194
L10	A635 (Ashton Old Road) - Ogden Lane Road Junction	22,788	4.2	23,278	5.0	490	194
L11	A635 (Ashton Old Road) - East of Vine Street	22,788	4.2	23,278	5.0	490	194
L12	A635 (Ashton Old Road East) - A6010 Junction Exit	11,793	4.3	11,956	4.8	163	65
L13	A635 (Ashton Old Road East) - A6010 Junction Approach	10,995	4.1	11,104	4.6	163	65
L14	A635 (Ashton Old Road) - West of A6010	29,249	4.4	29,303	4.6	109	43
L15	A635 (Ashton Old Road West) - A6010 Junction Approach	14,804	4.3	14,858	4.4	54	22
L16	A635 (Ashton Old Road West) - A6010 Junction Exit	14,445	4.6	14,554	4.7	54	22
L17	A6010 (Alan Turing Way)	30,876	3.7	30,931	3.8	109	43
L18	A6010 (Alan Turing Way North) - A635 Junction Exit	16,127	3.4	16,182	3.5	54	22
L19	A6010 (Alan Turing Way South) - A635 Junction Approach	14,749	3.9	14,749	4.1	54	22
L20	A57 (Hyde Road)	24,946	4.6	24,946	4.6	0	0
L21	A57 (Hyde Road) Eastbound	12,642	4.7	12,642	4.7	0	0
L22	A57 (Hyde Road) Westbound	12,304	4.5	12,304	4.5	0	0
L23	A57 (Hyde Road)	24,946	4.6	25,000	4.6	0	0
L24	A6010 (Pottery Lane North) - Free Flow Section	12,725	4.1	12,779	4.2	54	22

Road Link		DM Scenario		DS Scenario		Additional Flow (AADT)	
		24 Hr AADT Flow	HDV (%)	24 Hr AADT Flow	HDV (%)	LDV	HDV
L25	A6010 (Pottery Lane North) - Wenlock Way Junction	12,725	4.1	12,779	4.2	54	22
L26	A6010 (Pottery Lane North) - Free Flow Section	12,725	4.1	12,779	4.2	54	22
L27	A6010 (Pottery Lane North) - A635 Junction Approach	12,725	4.1	12,779	4.2	54	22
L28	A6010 (Pottery Lane South) - A635 Junction Exit	15,982	3.3	16,036	3.5	54	22
L29	A6010 (Pottery Lane South) - A57 Junction Approach	15,982	3.3	16,036	3.5	54	22
L30	A6010 (Pottery Lane South) - Free Flow Section	15,982	3.3	16,036	3.5	54	22
L31	A6010 (Pottery Lane South) - Gorton Lane Junction	15,982	3.3	15,982	3.5	54	22
L32	A6010 (Pottery Lane South) - Free Flow Section	15,982	3.3	15,982	3.3	0	0
L33	Ogden Lane - Cornwall Street Junction	4,610	10.6	4,610	10.6	0	0
L34	Ogden Lane	4,610	10.6	4,610	10.6	0	0
L35	Ogden Lane – A635 Street Junction	4,610	10.6	4,936	9.9	0	0
L36	South Street	727	2.8	1,543	9.7	326	129
L37	Internal Market Road	700	39.7	816	39.7	816	324
L38	Site Exit (Whitworth Street East)	700	39.7	816	39.7	816	324
L39	Site Entrance (Widnes Street)	700	39.7	816	39.7	816	324

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 were calculated using the above traffic flows and the Emissions Factor Toolkit (version 11), which incorporates updated COPERT 5.3 vehicle emissions factors for NO_x and PM and EURO 6 vehicle fleet sub-categories.

The 2023 future scenarios assume a reduction to future year emission factors guided by increasing EV fleets and future advancements to low emission technologies as provided by DEFRA's Eft v11.

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 (TG16)².

Meteorological Data

Hourly sequential data used in this assessment was obtained from Manchester Airport meteorological station, located 15 km southwest of the Proposed Development at the approximate NGR: 381745, 383960. Reference should be made to Figure 5 within Appendix B for wind roses of utilised meteorological data.

The choice of this parameter is considered a suitable representative of meteorological conditions across the modelled domain. All meteorological data used in the assessment was provided by ADM Ltd.

Roughness Length

The specific roughness length (z_0) values specified with ADMS-5 are summarised in Table B3.

Table B3: Roughness Lengths

Scenario	Roughness Length (m)	ADMS Description
Verification, DM and DS Scenarios	0.5	Parkland, open suburbia
Manchester Airport Met Station	0.3	Agricultural areas (max)

The Proposed Development is located within an area sparse of significant building structures and the meteorological station is set within an agricultural area. Values of 0.5 and 0.3 m are considered appropriate for the morphology of the assessment areas.

Monin-Obukhov Length

The Monin-Obukhov length values are summarised in Table B4.

Table B4: Monin-Obukhov Lengths

Scenario	Monin-Obukhov Length (m)	ADMS Description
Verification, DM and DS Scenarios	10	Small towns (<50,000)
Manchester Airport Met Station	30	Mixed urban, industrial

The application of Monin-Obukhov values considers the effect of heat production in populated areas which will influence atmospheric stability. The context of both the Proposed Development and meteorological site suggest a stable conditions and a value of between 10-30 m is deemed appropriate.

Background Concentrations

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	2019 Predicted Background Concentration ($\mu\text{g}/\text{m}^3$)
Manchester 28	387500, 388500	NO _x	29.79
		NO ₂	20.49
Manchester 73	387500, 387500	NO _x	25.43
		NO ₂	17.98
Manchester 86A/B	387500, 396500	NO _x	26.48
		NO ₂	18.63

Table B6 displays the predicted background concentrations by DEFRA used in the operational phase assessment for the sensitive receptor locations.

Table B6: Predicted Background Pollutant Concentrations at Sensitive Receptors

Receptor Location	DEFRA Grid Square	Pollutant	2023 Predicted Background Concentration ($\mu\text{g}/\text{m}^3$)
R1, R2, R4, R11, R16 - R18 and R20 - R22	387500, 397500	NO _x	29.79
		NO ₂	20.49
		PM ₁₀	12.61
		PM _{2.5}	8.48
R3, R5, R6, R12- R14	388500, 397500	NO _x	27.25
		NO ₂	19.03
		PM ₁₀	12.58
		PM _{2.5}	8.53
R7 – R10, R15 and R19	387500, 396500	NO _x	24.92
		NO ₂	17.67
		PM ₁₀	12.77
		PM _{2.5}	8.83

Similar to emission factors, background concentrations for 2023 were used to represent predicted background concentrations during the future year operation scenarios.

Verification

The predicted results from a dispersion model may differ from measured concentrations for many 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. DEFRA guidance LAQM (TG16)² advises that the initial verification should consider the performance of the model in predicting road sourced NO_x.

MCC undertakes periodic monitoring of NO₂ concentrations at 3 diffusion tube locations and focused on an area where development traffic data is present. Table B7 shows the initial comparison of monitored and predicted annual mean road NO_x concentrations.

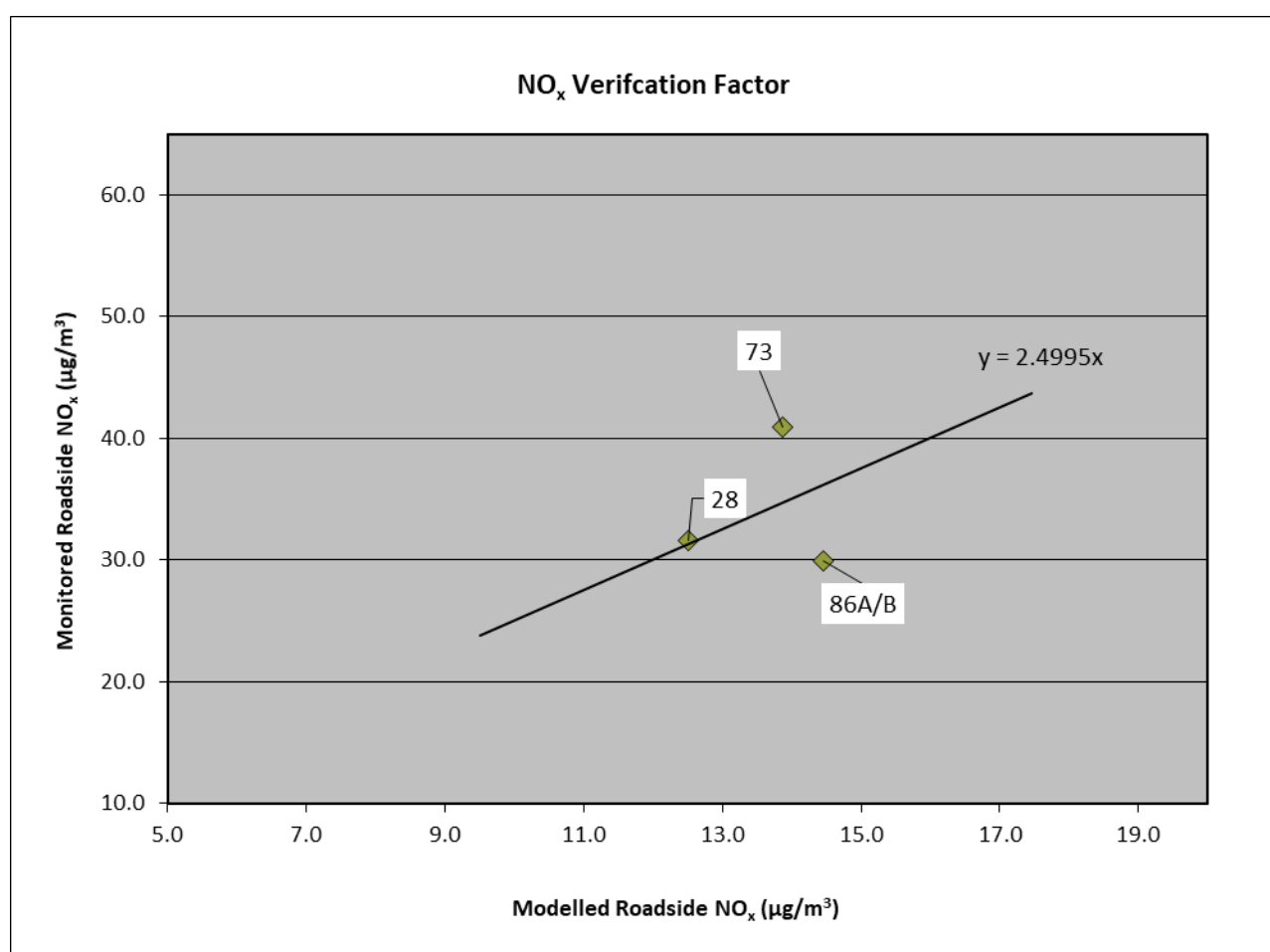
Table B7: NO_x Results

Site ID	Monitored Road NO _x Concentration (µg/m ³)	Modelled Road NO _x Concentration (µg/m ³)	% Difference ((Modelled – Monitored)/Monitored) * 100
7	31.58	12.51	-60%
14	40.88	13.87	-66%
29	29.93	14.47	-52%

The modelled NO_x results show underpredictions greater than the 25% threshold specified with LAQM (TG16). The model was therefore adjusted as far as reasonably practical including adjustments to average speeds and slow down sections.

Following adjustments to the modelling inputs 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 below.

Graph 1 – Modelled and Monitored NO_x Road Contributions



The adjustment factor of **2.4995** calculated above was applied to the modelled road NO_x contributions with results presented in Table B8.

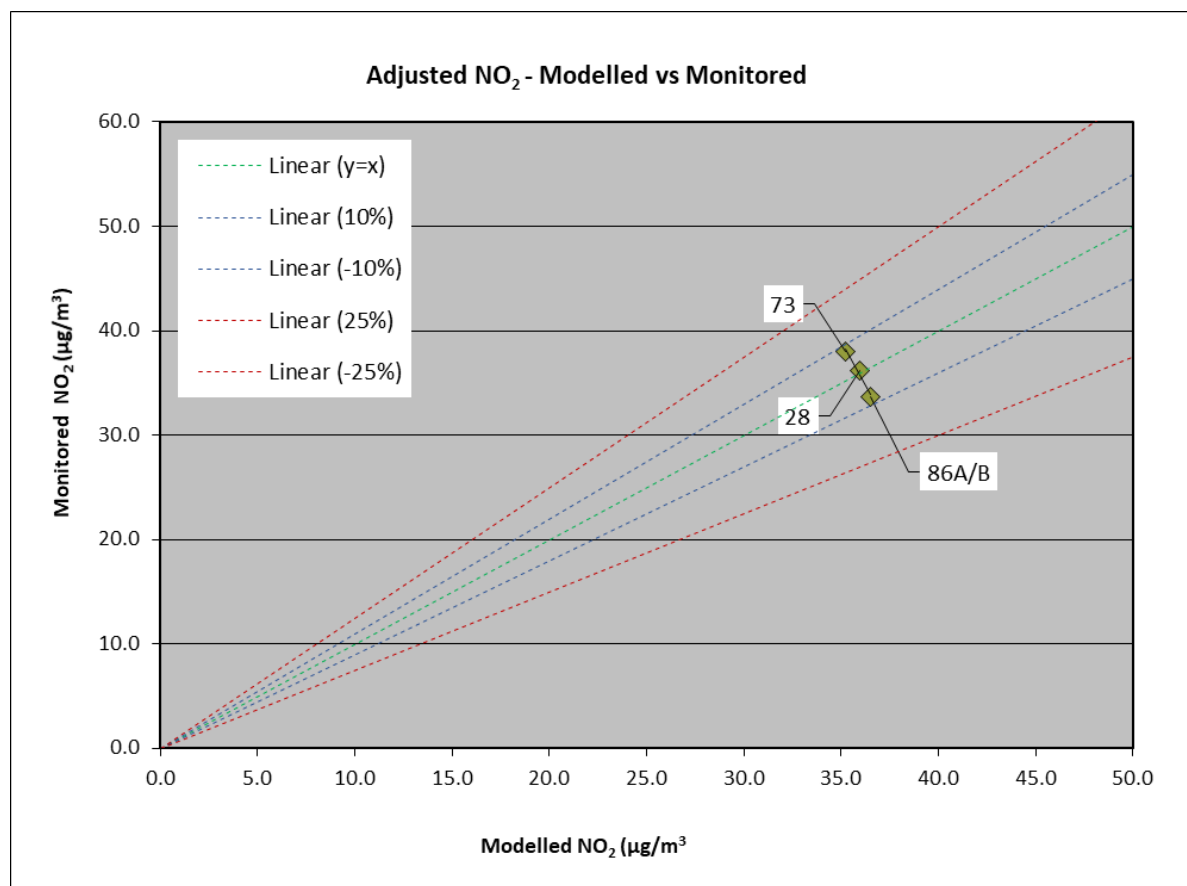
Table B8: Adjusted Modelled and Monitored NO₂ Concentrations

Site ID	Monitored NO ₂ Concentration (µg/m ³)	Adjusted Modelled NO ₂ Concentration (µg/m ³)	Difference ((Modelled – Monitored)/Monitored) * 100
28	36.14	35.99	0%

Site ID	Monitored NO ₂ Concentration (µg/m ³)	Adjusted Modelled NO ₂ Concentration (µg/m ³)	Difference ((Modelled – Monitored)/Monitored) * 100
73	38.04	35.23	-7%
86A/B	33.63	36.51	+9%

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

Graph 2 – Comparison of Monitored and Adjusted Modelled NO₂ Concentrations



As demonstrated in Table B8 and Graph 2, the percentage difference between modelled and monitored concentrations following adjustment is less than 10% at all locations.

Additional methods for determining model uncertainty are provided below in accordance with Box 7.20 of LAQM (TG16)². This includes correlation coefficient, Root Mean Square Error and Fractional Bias.

Table B9: Modelled Uncertainty

Method	Calculated Value	Ideal Value
Correlation Coefficient	-0.98	1.00
Root Mean Square Error	2.32 (5.81%)	0.0 (<25%)
Fractional Bias	0.00	0.0

The adjustments provide favourable values which adheres to the guidance provided in LAQM (TG16)² and suggest further post adjustment is unnecessary.

As PM monitoring is not undertaken within the assessment extents, the NO_x adjustment factors detailed above were utilised to adjust model predictions of PM in accordance with the guidance provided within LAQM (TG16)².

Appendix C - Assessment Results

PREDICTED CONCENTRATIONS AT SENSITIVE RECEPTORS

Nitrogen Dioxide (NO₂)

Annual mean NO₂ concentrations were predicted for 2023 DM and DS scenarios and are summarised in Table C1. Reference should be made to Figure 6 for a graphical representation of these locations. Exceedances of the annual mean AQO are highlighted in **bold**.

Table C1: Predicted Annual Mean NO₂ Concentrations

Potential Impact		Predicted Annual Mean NO ₂ Concentration (µg/m ³)		
		DM	DS	Change
R1	Varna Community Primary School	25.79	25.97	0.18
R2	Ettrick Close	28.63	28.92	0.29
R3	Ashton Old Road	36.51	37.15	0.64
R4	Ashton Old Road	36.77	37.36	0.59
R5	Florence House Medical Practice	26.74	27.03	0.29
R6	Capital Road	25.00	25.22	0.22
R7	South Street	24.96	25.51	0.55
R8	Godley Close	23.24	23.79	0.55
R9	Silkstone Street	26.36	26.97	0.61
R10	Ashton Old Road	42.03	42.38	0.35
R11	St Barnabas C of E Primary Academy	24.12	24.22	0.10
R12	Manchester College	21.48	21.53	0.05
R13	Turing Close	31.68	31.97	0.29
R14	Alan Turing Way	38.89	39.24	0.35
R15	Churchfield Walk	27.87	27.95	0.08
R16	Five Oak Family Practice	34.68	34.78	0.10
R17	The Cornerstone Centre	47.07	47.35	0.28
R18	Falconwood Way	38.86	39.05	0.19
R19	Bridge College	23.85	23.89	0.04
R20	Miles Street	37.86	37.99	0.13
R21	Bridge End Close	25.68	25.71	0.03
R22	Pottery Lane	28.29	28.34	0.05

As indicated in Table C1, annual mean NO₂ concentrations were below the relevant AQO at 20 receptor locations with 2 locations (R10, R17) exceeding the AQO. Exceedances are present during the DM and DS scenarios and therefore exceedances are not associated with the operation of the Proposed Development.

Predicted impacts on annual mean NO₂ concentrations are summarised in Table C2.

Table C2: Predicted NO₂ Impacts

Potential Impact		% Change in Concentration Relative to AQO	Long Term Average Concentration of AQO	Impact Descriptor
R1	Varna Community Primary School	0.45	75% or less	Negligible
R2	Ettrick Close	0.73	75% or less	Negligible
R3	Ashton Old Road	1.60	76-94%	Negligible
R4	Ashton Old Road	1.47	76-94%	Negligible
R5	Florence House Medical Practice	0.73	75% or less	Negligible
R6	Capital Road	0.55	75% or less	Negligible
R7	South Street	1.38	75% or less	Negligible
R8	Godley Close	1.38	75% or less	Negligible
R9	Silkstone Street	1.53	75% or less	Negligible
R10	Ashton Old Road	0.88	103-109%	Negligible
R11	St Barnabas C of E Primary Academy	0.25	75% or less	Negligible
R12	Manchester College	0.13	75% or less	Negligible
R13	Turing Close	0.72	76-94%	Negligible
R14	Alan Turing Way	0.88	95-102%	Negligible
R15	Churchfield Walk	0.20	75% or less	Negligible
R16	Five Oak Family Practice	0.25	76-94%	Negligible
R17	The Cornerstone Centre	0.70	110+	Negligible
R18	Falconwood Way	0.47	95-102%	Negligible
R19	Bridge College	0.10	75% or less	Negligible
R20	Miles Street	0.33	95-102%	Negligible
R21	Bridge End Close	0.08	75% or less	Negligible
R22	Pottery Lane	0.13	75% or less	Negligible

As indicated in Table C2 impacts on annual mean NO₂ concentrations as a result of road vehicle exhaust emissions associated with the development were predicted to be negligible at all receptor locations.

Particulate Matter (PM₁₀)

Annual mean PM₁₀ concentrations were predicted for 2023 DM and DS scenarios and are summarised Table C3.

Table C3: Predicted Annual Mean PM₁₀ Concentrations

Potential Impact		Predicted Annual Mean PM ₁₀ Concentration (µg/m ³)		
		DM	DS	Change
R1	Varna Community Primary School	13.99	14.04	0.05
R2	Ettrick Close	14.85	14.94	0.09
R3	Ashton Old Road	17.58	17.78	0.20
R4	Ashton Old Road	17.32	17.52	0.20

Potential Impact		Predicted Annual Mean PM ₁₀ Concentration (µg/m ³)		
		DM	DS	Change
R5	Florence House Medical Practice	14.69	14.77	0.08
R6	Capital Road	14.23	14.29	0.06
R7	South Street	14.20	14.31	0.11
R8	Godley Close	13.87	14.00	0.13
R9	Silkstone Street	14.48	14.62	0.14
R10	Ashton Old Road	17.78	17.86	0.08
R11	St Barnabas C of E Primary Academy	13.53	13.56	0.03
R12	Manchester College	13.20	13.21	0.01
R13	Turing Close	15.26	15.31	0.05
R14	Alan Turing Way	16.74	16.80	0.06
R15	Churchfield Walk	15.35	15.37	0.02
R16	Five Oak Family Practice	16.46	16.49	0.03
R17	The Cornerstone Centre	18.15	18.21	0.06
R18	Falconwood Way	16.40	16.43	0.03
R19	Bridge College	14.34	14.35	0.01
R20	Miles Street	16.69	16.71	0.02
R21	Bridge End Close	14.00	14.01	0.01
R22	Pottery Lane	14.76	14.78	0.02

As indicated in Table C3 annual mean PM₁₀ concentrations were below the relevant AQO at all receptor locations considered. Predicted impacts on annual mean PM₁₀ concentrations are summarised in Table C4.

Table C4: Predicted PM₁₀ Impacts

Potential Impact		% Change in Concentration Relative to AQO	Long Term Average Concentration of AQO	Impact Descriptor
R1	Varna Community Primary School	0.12	75% or less	Negligible
R2	Ettrick Close	0.23	75% or less	Negligible
R3	Ashton Old Road	0.50	75% or less	Negligible
R4	Ashton Old Road	0.50	75% or less	Negligible
R5	Florence House Medical Practice	0.20	75% or less	Negligible
R6	Capital Road	0.15	75% or less	Negligible
R7	South Street	0.28	75% or less	Negligible
R8	Godley Close	0.33	75% or less	Negligible
R9	Silkstone Street	0.35	75% or less	Negligible
R10	Ashton Old Road	0.20	75% or less	Negligible
R11	St Barnabas C of E Primary Academy	0.08	75% or less	Negligible
R12	Manchester College	0.03	75% or less	Negligible

Potential Impact		% Change in Concentration Relative to AQO	Long Term Average Concentration of AQO	Impact Descriptor
R13	Turing Close	0.13	75% or less	Negligible
R14	Alan Turing Way	0.15	75% or less	Negligible
R15	Churchfield Walk	0.05	75% or less	Negligible
R16	Five Oak Family Practice	0.07	75% or less	Negligible
R17	The Cornerstone Centre	0.15	75% or less	Negligible
R18	Falconwood Way	0.08	75% or less	Negligible
R19	Bridge College	0.02	75% or less	Negligible
R20	Miles Street	0.05	75% or less	Negligible
R21	Bridge End Close	0.02	75% or less	Negligible
R22	Pottery Lane	0.05	75% or less	Negligible

As indicated in Table C4 impacts on annual mean PM₁₀ concentrations as a result of road vehicle exhaust emissions associated with the development were predicted to be negligible at all receptor locations.

Particulate Matter (PM_{2.5})

Annual mean PM_{2.5} concentrations were predicted for 2023 DM and DS scenarios and are summarised Table C5.

Table C5: Predicted Annual Mean PM_{2.5} Concentrations

Potential Impact		Predicted Annual Mean PM _{2.5} Concentration (µg/m ³)		
		DM	DS	Change
R1	Varna Community Primary School	9.26	9.29	0.03
R2	Ettrick Close	9.74	9.79	0.05
R3	Ashton Old Road	11.33	11.45	0.12
R4	Ashton Old Road	11.13	11.24	0.11
R5	Florence House Medical Practice	9.71	9.76	0.05
R6	Capital Road	9.45	9.49	0.04
R7	South Street	9.66	9.72	0.06
R8	Godley Close	9.47	9.54	0.07
R9	Silkstone Street	9.82	9.90	0.08
R10	Ashton Old Road	11.73	11.78	0.05
R11	St Barnabas C of E Primary Academy	9.00	9.01	0.01
R12	Manchester College	8.87	8.88	0.01
R13	Turing Close	10.06	10.09	0.03
R14	Alan Turing Way	10.92	10.96	0.04
R15	Churchfield Walk	10.01	10.02	0.01
R16	Five Oak Family Practice	10.65	10.67	0.02
R17	The Cornerstone Centre	11.69	11.72	0.03

Potential Impact		Predicted Annual Mean PM _{2.5} Concentration (µg/m ³)		
		DM	DS	Change
R18	Falconwood Way	10.66	10.68	0.02
R19	Bridge College	9.44	9.44	0.00
R20	Miles Street	10.81	10.82	0.01
R21	Bridge End Close	9.26	9.27	0.01
R22	Pottery Lane	9.69	9.70	0.01

As indicated in Table C5 annual mean PM_{2.5} concentrations were below the relevant AQO at all receptor locations considered.

Predicted impacts on annual mean PM_{2.5} concentrations are summarised in Table C6.

Table C6: Predicted PM_{2.5} Impacts

Potential Impact		% Change in Concentration Relative to AQO	Long Term Average Concentration of AQO	Impact Descriptor
R1	Varna Community Primary School	0.12	75% or less	Negligible
R2	Ettrick Close	0.20	75% or less	Negligible
R3	Ashton Old Road	0.48	75% or less	Negligible
R4	Ashton Old Road	0.44	75% or less	Negligible
R5	Florence House Medical Practice	0.20	75% or less	Negligible
R6	Capital Road	0.16	75% or less	Negligible
R7	South Street	0.24	75% or less	Negligible
R8	Godley Close	0.28	75% or less	Negligible
R9	Silkstone Street	0.32	75% or less	Negligible
R10	Ashton Old Road	0.20	75% or less	Negligible
R11	St Barnabas C of E Primary Academy	0.04	75% or less	Negligible
R12	Manchester College	0.04	75% or less	Negligible
R13	Turing Close	0.12	75% or less	Negligible
R14	Alan Turing Way	0.16	75% or less	Negligible
R15	Churchfield Walk	0.04	75% or less	Negligible
R16	Five Oak Family Practice	0.08	75% or less	Negligible
R17	The Cornerstone Centre	0.12	75% or less	Negligible
R18	Falconwood Way	0.08	75% or less	Negligible
R19	Bridge College	0.00	75% or less	Negligible
R20	Miles Street	0.04	75% or less	Negligible
R21	Bridge End Close	0.04	75% or less	Negligible
R22	Pottery Lane	0.04	75% or less	Negligible

As indicated in Table C6 impacts on annual mean $PM_{2.5}$ concentrations as a result of road vehicle exhaust emissions associated with the development were predicted to be negligible at all receptor locations.

Appendix D – IAQM Construction Phase Methodology

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 IAQM guidance³. 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 D1.

Table D1: 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 - 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 D2.

Table D2: Examples of Factors Defining Sensitivity of an Area

Sensitivity	Receptors	
	Human	Ecological
High	- Users expect of high levels of amenity - High aesthetic or value property - People expected to be present continuously for extended periods of time - 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	Internationally or nationally designated site e.g. Special Area of Conservation
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 sensitivity of the area to dust soiling effects on people and property is shown in Table D3.

Table D3: 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 D4 outlines the sensitivity of the area to human health impacts.

Table D4: 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

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
	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 D5 outlines the sensitivity of the area to ecological impacts.

Table D5: 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 D6 outlines the risk category from demolition activities.

Table D6: 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 D7 outlines the risk category from earthworks and construction activities.

Table D7: 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 D8 outlines the risk category from trackout.

Table D8: 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 using effective mitigation.

Experience shows that this is normally possible. Hence the residual effect will be not significant.



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