

AIR QUALITY ASSESSMENT

on behalf of

MERRY KIDZ CHILDCARE LIMITED

for

131 ASHTON OLD ROAD, MANCHESTER

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Summary

This air quality report has been prepared to accompany a planning application for a proposed nursery at 131 Ashton Old Road, Manchester. It assesses the potential changes in air quality due to the construction and operation of the proposed development and whether these potential changes would significantly alter air quality.

The assessment of dust soiling and human health impacts during the construction phase of the development results in the proposal of dust mitigation measures. The implementation of these will ensure that residual dust impacts during the construction phase are not significant.

Concentrations of NO₂ and PM₁₀ are likely to be below their respective long and short-term objectives at the proposed development site which is therefore considered suitable as a nursery, with regards to air quality. Concentrations of PM_{2.5} are expected to be below the annual mean target.

The proposed development is not expected to have a significant impact on local air quality.

There is, therefore, no reason for this application to be refused on the grounds of air quality.

Prepared By Melody Horan

Reviewed By Unam Ejaz

Signed



Signed



Date

13 December 2021

Date

13 December 2021

Record of changes

Version	Date	Change	Initials
1	13 December 2021	First issue	MH
2	4 January 2022	Update to the number of electric charging points	MH
3	25 April 2022	Updates in accordance with EHO comments	MH

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1 Introduction

- 1.1 Miller Goodall Ltd has been instructed to prepare an air quality assessment to accompany a planning application for a proposed nursery at 131 Ashton Old Road, Manchester. The site lies within the administrative boundary of Manchester City Council (MCC).
- 1.2 The report provides a review of the existing air quality in proximity to the proposed development site and assesses the potential impact of the proposed development on local air quality following Local Air Quality Management Technical Guidance¹ and EPUK and IAQM guidance².
- 1.3 The report provides an assessment of the potential air quality impacts associated with the construction and operational phases of the proposed development. The potential air quality changes at existing sensitive receptors adjacent to the site and roads subject to increased vehicle generation from the development are assessed. The suitability of the site for the intended use is also assessed.
- 1.4 The main pollutants of health concern from road traffic exhaust releases are nitrogen dioxide (NO₂) and fine particulates, normally assessed as the fraction of airborne particles of mean aerodynamic diameter less than ten micrometres (PM₁₀) and 2.5 micrometres (PM_{2.5}) since these pollutants are most likely to approach their respective air quality objectives in proximity to major roads and congested areas. This assessment has therefore focused on the impact of the proposed development on concentrations of NO₂, PM₁₀ and PM_{2.5}.

2 Site Description

- 2.1 The site is located approximately 2 km to the east of Manchester city centre.
- 2.2 Open land with grass and trees is located to the north of the development site. MGM MOT. Centre is located to the east of the development site, beyond which there is a railway line and residential dwellings. Ashton Old Road runs along the southern site boundary. Viaduct Street is located to the west of the development site. The site location is shown in **Appendix A**.

3 Proposed Development

- 3.1 The proposed development is for the conversion of the existing building into a children's nursery as well as the construction of an additional building on site. The development also includes a secure playground. There are 20 parking spaces associated with the development site as well as a lockable cycle shelter.
- 3.2 The converted existing building will continue to be heated via a gas-fired boiler. The detached prefabricated building may be electric, if it is not electric then it will be heated via a gas-fired boiler as well.
- 3.3 The proposed development is expected to introduce an increase in AADT flows of approximately 98 LDV and 0 HDV.

¹ Department for the Environment Food and Rural Affairs (2021) 'Local Air Quality Management Technical Guidance Document LAQM.TG (16)', London: Defra.

² EPUK and IAQM (January 2017) Land Use Planning and Development Control: Planning for Air Quality (v1.2)

4 Policy Context

4.1 Air Quality Objectives

- 4.1.1** The standards and objectives relevant to the LAQM framework have been prescribed through the Air Quality (England) Regulations (2000) and the Air Quality (England) (Amendment) Regulations 2002; the Air Quality Standards Regulations 2010 set out the combined Daughter Directive limit values and interim targets for Member State compliance.
- 4.1.2** The United Kingdom left the European Union on 31st January 2020 and is no longer a member state. However, the current framework of air quality legislation was converted into domestic law through the European Union (Withdrawal) Act 2018^[3].
- 4.1.3** The relevant air quality standards and objectives are presented in **Table 1**. Pollutant standards relate to ambient pollutant concentrations in air, set on the basis of medical and scientific evidence of how each pollutant affects human health.

Table 1: Air Quality Strategy Objectives (England) for the Purposes of Local Air Quality Management

Pollutant	Air Quality Objective	
	Concentration	Measured As
Nitrogen dioxide (NO ₂)	200 µg/m ³	1-hour mean not to be exceeded more than 18 times per year
	40 µg/m ³	Annual mean
Particles (PM ₁₀)	50 µg/m ³	24-hour mean not to be exceeded more than 35 per year
	40 µg/m ³	Annual mean
Particles (PM _{2.5})	25 µg/m ³	Annual mean (target)

- 4.1.4** Where an air quality objective is unlikely to be met by the relevant deadline, local authorities must designate those areas as Air Quality Management Areas (AQMA) and take action to work towards meeting the objectives. Following the designation of an AQMA, local authorities are required to develop an Air Quality Action Plan (AQAP) to work towards meeting the objectives and to improve air quality locally.
- 4.1.5** Possible exceedances of air quality objectives are generally assessed in relation to those locations where members of the public are likely to be regularly present and are likely to be exposed for a period of time appropriate to the averaging period of the objective.

³ UK Parliament (2018): <http://www.legislation.gov.uk/ukpga/2018/16/contents/enacted>

4.2 Greater Manchester Action Plan 2016-2021

- 4.2.1 The Greater Manchester Combined Authority (GMCA) Air Quality Action Plan 2016-2021⁴ provides information in respect of the actions planned by the Greater Manchester Authorities in relation to declared AQMAs. Action Plans are the mechanism by which the local authorities, in collaboration with national agencies and others, outline their plans for working towards achieving the air quality objectives through the powers available to them. In relation to managing new development, the action plan states that:

“Action 1.1

Greater Manchester (GM)councils to adopt the most recent IAQM Guidance on the Assessment of Dust from Demolition and Construction as current best practice to assess and mitigate emissions from construction sites. i. Where a key priority area is affected by a proposed scheme, a high level of mitigation control will be requested.

Action 1.2

GM local authorities will adopt the most recent IAQM/EPUK guidance for air quality assessment as current best practice, to help ensure that planning applications consider potential local air quality impacts and opportunities to improve air quality are realised. i. Where a Key Priority Area is significantly adversely affected by a proposed scheme, a high level of mitigation control will be requested. ii. The IAQM/EPUK guidance will also be used to screen and assess industrial sources, such as boilers or large stationary engines. GM local authorities to recommend mitigation controls in accordance with the most recent guidance and the other actions in this document for new developments that contribute to a deterioration of air quality in Air Quality Management Areas (AQMAs). Where an air quality assessment is triggered, it should include a review of monitoring data. Where monitoring is not currently undertaken, it may be requested to inform the application or to confirm the effects.”

- 4.3 In January 2019, the joint GMCA & AQMA executive board met for the Greater Manchester Clean Air Plan: Update January 2019. Within the document, it states that Greater Manchester has signed up to become a World Health Organisation (WHO) ‘BreatheLife’ city, with the associated aim of achieving WHO air quality targets by 2030.
- 4.4 The WHO air quality targets refer to the 2005 Air Quality Guidelines (AQG), not the 2021 AQG. For NO₂ concentrations the WHO 2005 AQG is 40 µg/m³, for PM₁₀ it is 20 µg/m³ and for PM_{2.5} it is 10 µg/m³. It should be noted that the WHO AQGs are not legal requirements.

5 Methodology

5.1 Data Sources

- 5.1.1 The air quality assessment has been undertaken and prepared with reference to information from several sources, as detailed in **Table 2**.

⁴ GMCA (2016) Greater Manchester Air Quality Action Plan 2016-2021

Table 2: Key Information Sources

Data Source	Reference
Greater Manchester Combined Authority (GMCA)	GMCA (2016) <i>Greater Manchester Air Quality Action Plan 2016-2021</i>
	GMCA (2019) <i>Joint Greater Manchester Combined Authority & AQMA Executive Board Meeting</i>
	GMCA (2021) <i>2020 Air Quality Annual Status Report</i>
Institute of Air Quality Management (IAQM)	IAQM (2014) <i>Assessment of Dust from Demolition and Construction (v1.1)</i>
Department for Environment Food and Rural Affairs (Defra)	Defra <i>Local Air Quality Management Technical Guidance TG(16), February 2018</i>
Environmental Protection UK (EPUK) and Institute of Air Quality Management (IAQM)	EPUK and IAQM (January 2017) <i>Land Use Planning and Development Control: Planning for Air Quality (v1.2)</i>
Ministry of Housing, Communities & Local Government	Planning Practice Guidance: Air Quality, November 2019 National Planning Policy Framework (NPPF), June 2019
Defra's LAQM Support Tools	Local Air Quality Management 1 km x 1 km grid background pollutant maps NOx to NO ₂ Calculator
DTPC (Northwest)	Data regarding the traffic associated with the proposed development Growth factors provided to convert 2019 to represent 2021.
Department for Transport	DfT (2021) [Online] https://roadtraffic.dft.gov.uk/manualcountpoints/27403
Atmospheric Dispersion Modelling Ltd	Meteorological data from Manchester Airport for the year 2019

5.2 Consultation

- 5.2.1 The proposed air quality assessment methodology was discussed with Laura Miller (MCC Environmental Health)⁵.

⁵ Email from Miller Goodall Ltd. to the Manchester City Council Environment Team on the 1st of December 2021.

5.2.2 Laura provided the following comments following the initial consultation⁶:

1. *"Please consider the previous WHO guideline for PM_{2.5} of 10ug/m³ annual average, as we're signed up with GMCA to be a BreatheLife city by 2030 and achieve this limit (notwithstanding the latest WHO guideline updates). This would future proof the development.*
2. *Please note that there is limited monitoring nearby for model verification - see <https://cleanairgm.com/data-hub/>. Some additional tube monitoring may therefore be required to avoid poor model performance, particularly if baseline levels are already close to the AQ objectives.*
3. *An assessment also needs to be undertaken related to the exposure of children playing outside due to the proximity of the site to Ashton Old Road.*
4. *EV charging recommendations:*
 - *11 or more parking spaces: minimum 25% EV charge points (minimum 7kw), and cable routes for all other spaces."*

5.2.3 As requested, this assessment has considered WHO 2005 AQG. As the model verified well against diffusion tube MAN95 (with an adjustment factor of 1.22), it was proposed that monitoring not be undertaken⁷. The pollution contours cover the whole of the site to allow the predicted concentrations at the playground to be considered. The client has been informed of the EV charging recommendations.

5.2.4 Following the submission of the report, the client received feedback regarding their development from Carl Glennon, the MCC Planning Officer⁸, stating:

"However, the concerns discussed with the Environmental Health Officer relate to the proximity of the proposed playground to the neighbouring business use.

In response, it is requested that an additional assessment is made at the playground specifically, which would also consider the car park and vehicle repair business next door and the trainline which runs closely to the site."

5.2.5 The EHO, Lisa Jones, was contacted to discuss what they would specifically like to be assessed in regards to the neighbouring business and the railway. It was stated in this email that the nearby train line is not listed within table 7.2 of Defra (2021) TG16 which lists 'Rail Lines with a Heavy Traffic of Diesel Passenger Trains'. The following response was provided⁹:

"We just want to be sure that, in addition to Ashton Old Road, the nearby trainline and adjacent vehicle business/car park have been factored into the assessment and that they will not have an adverse impact on the air quality within the playground at the development."

5.3 IAQM Construction Dust Assessment

5.3.1 The IAQM has produced guidance¹⁰ on the assessment of air quality impacts arising from dust associated with construction and demolition activities and provides a methodology by which to complete such assessments. The IAQM methodology provides a risk assessment structure to determine the likely impact of the development on nearby receptor locations and recommends mitigation measures that should be implemented to reduce any

⁶ Email from Laura Miller (MCC Environmental Health) to Miller Goodall Ltd. on 6th December 2021.

⁷ Email from Miller Goodall Ltd. to Laura Miller (MCC Environmental Health) on the 10th of December 2021.

⁸ Email from Carl Glennon (MCC Planning Officer) to Simon Plowman (Plan:8 Town Planning Ltd) Miller Goodall Ltd. on 22nd March 2022

⁹ Email from Miller Goodall Ltd. to Lisa Jones (MCC Environmental Health) on the 23rd March 2022 and 31st March 2022. Email from Lisa Jones (MCC Environmental Health) to Miller Goodall Ltd on 31st March 2022.

¹⁰ IAQM "Assessment of dust from demolition and construction" v1.1 2014

such impact. The methodology for the assessment is shown in **Appendix B**. The study area in relation to dust and the zones of interest used within the assessment (<20 m, 20 m – 50 m and 50 – 100 m from the site) are shown in **Appendix C**. The dust assessment informed the recommended mitigation outlined in **Appendix D**.

5.4 Impact of the proposed development

5.4.1 A simple air quality assessment has been completed to determine the impact of the proposed development.

5.5 Railway emissions

5.5.1 There is a railway line approximately 15 m east of the proposed development site. The impact of the nearby train line has been screened out of this assessment because it is not listed as having a heavy traffic of diesel passenger trains within Table 7.2 of Defra (2021) TG16¹.

5.6 Road Traffic Emissions Assessment

Air Dispersion Model

5.6.1 The validated Atmospheric Dispersion Modelling System for Roads (ADMS-Roads) v5.0.0.1 was used to assess the suitability of the site in terms of NO₂, PM₁₀ and PM_{2.5} concentrations.

Assessment Scenarios

5.6.2 The assessment considered the following scenarios:

- Scenario 1: 2019 - base year; and
- Scenario 2: 2021- opening year 'with development'.

Traffic Data

5.6.3 The spatial scope for the assessment consisted of Ashton Old Road. The traffic data used in the assessment and a map of the road network is provided in **Appendix E**.

5.6.4 Vehicles within the study area have been modelled at posted speed limits apart from the approach to junctions where queuing traffic sections are included in the model at 5 kph where appropriate following Defra guidance.

5.6.5 LAQM.TG (16) recommends temporal variations to be considered within air quality modelling. Therefore, a 7-day profile based on the Department for Transport's statistics was used within the model.

MGM MOT Centre

5.6.6 MGM MOT Centre was not included in the road traffic emissions model. Concerns have been raised by the EHO regarding the car park at MGM MOT Centre and the impact of the business on the proposed development, in particular the playground^{8;9}. There is no public car park onsite, only cars associated with the business are located on the premises. Miller Goodall Ltd spoke to MGM MOT Centre to obtain the following information¹¹, there are on average 10 cars parked outside which are purely used for parts and on average 20 cars enter the MG MOT centre during the typical working day. This number of vehicles is considerably lower than the 28,372

¹¹ Phone call between Miller Goodall Ltd and MGM MOT Centre on the 22nd April 2022.

AADT modelled as travelling past the development along Ashton Old Road. Therefore, traffic associated with the MGM MOT Centre has been scoped out of the air quality assessment.

Meteorological Data

5.6.7 Meteorological data for 2019 from the Manchester Airport recording station was used in the ADMS-Roads model. This is the most representative recording station for the development site.

5.6.8 The wind rose for 2019 from the Manchester Airport recording station is provided in **Appendix E** as well as the meteorological parameters.

Sensitive Receptors

5.6.9 Contour plots of NO₂, PM₁₀ and PM_{2.5} concentrations across the proposed development, at a height, have been produced to determine whether future site users may be exposed to elevated pollutant levels.

Conversion of NO_x to NO₂

5.6.10 Oxides of nitrogen (NO_x) concentrations were predicted using the ADMS-Roads model. The modelled road contribution of NO_x at the identified receptor locations was then converted to NO₂ using the NO_x to NO₂ calculator (v8.1, 2020)¹² following Defra guidance.

Emission Factors

5.6.11 Defra's Emission Factor Toolkit (EFT)¹³ (V10.1, 2020) was used within the ADMS-Roads model to predict emissions from road vehicles for all scenarios. Defra released EFT V11.0 in November 2021. However, this version update does not make any changes to the emissions below 2030 in V10.1. The changes relate to providing inputs from 2031 to 2050 which are specific to CO₂ inputs and assessments.

Background Concentrations

5.6.12 The ADMS model requires the derivation of background pollutant concentration data that are factored to the year of assessment, to which the contributions from the assessed roads are added.

5.6.13 There are no background monitoring locations in the vicinity of the proposed development and receptor locations, therefore background NO_x, NO₂, PM₁₀ and PM_{2.5} concentrations were obtained from the Defra LAQM support tools for the 1 km x 1 km grid squares covering the proposed development site and receptor locations for the years of assessment (2019 and 2021).

Model Verification

5.6.14 Model verification is the process of adjusting model outputs to improve the consistency of modelling results with respect to available monitored data.

¹² [Background maps. Tools. Local Air Quality Management Support - Defra, UK](#)

¹³ [Emissions Factors Toolkit \(defra.gov.uk\)](#)

5.6.15 Verification has been undertaken for NO₂. The verification procedure considers diffusion tube MAN95 which is located within the study area. The location of MAN95 is shown in **Appendix A** and the results are provided in **Section 6.2**. The verification procedure and associated calculations are shown in **Appendix E**. A single verification factor has been derived and applied. All modelled road NO_x concentrations have been adjusted by a factor of 1.22.

5.6.16 There is no PM₁₀ or PM_{2.5} monitoring undertaken within the study area, therefore it was not possible to undertake verification for particulate matter concentrations.

Relevant Objectives

5.6.17 As the proposed development is a nursery, both the annual mean and short-term objectives apply¹.

6 Baseline Air Quality

6.1 Local Air Quality

6.1.1 Baseline air quality at the proposed development has been established by examining monitoring data produced by GMCA (provided in the GMCA (2021) 2020 Annual Status Report) and background concentration maps provided by Defra for the grid squares covering the proposed development.

6.1.2 The site is located within an AQMA. The site location and its relationship to the AQMA is shown in **Appendix A**. The AQMA was declared in 2016, on the basis of annual average levels of NO₂.

6.2 Air Quality Monitoring

Nitrogen Dioxide (NO₂)

6.2.1 There are three automatic monitoring stations within MCC, all of which monitor NO₂. However, none of these monitoring stations are located in areas that are representative of conditions at the proposed development site.

6.2.2 MCC also monitors NO₂ with diffusion tubes. There is one diffusion tube, MAN95, within 500 m of the site.

6.2.3 The results from MAN95 are shown in **Table 3** and its location is shown in **Appendix A**. Monitoring data has been obtained from the GMCA (2021) 2020 Annual Status Report.

Table 3: Annual Mean NO₂ Concentrations Monitored by MCC within the Study Area

Site ID	Location	Annual Mean NO ₂ Concentrations (µg/m ³)				
		2016	2017	2018	2019	2020
MAN95 (Roadside)	386668 397566	-	-	-	43.4	31.5
Annual Mean NO ₂ air quality objective		40 µg/m ³				

6.2.4 The monitoring results in **Table 3** indicate that annual mean concentrations of NO₂ at MAN95 were above the NO₂ annual mean objective in 2019 and below the objective in 2020.

- 6.2.5 The results indicate that the short-term objective for NO₂ was unlikely to be exceeded at the identified monitoring sites as monitored annual mean concentrations were well below the indicative screening concentration of 60 µg/m³ during the period shown.

Particulate Matter (PM₁₀ & PM_{2.5})

- 6.2.6 MCC does undertake PM₁₀ and PM_{2.5} monitoring at automatic monitoring stations. However, as discussed, there are no automatic monitoring stations representative of conditions at the proposed development site.
- 6.2.7 Between 2016 – 2020, the annual mean PM₁₀ concentrations were below the annual mean objective at all three MCC automatic monitoring stations. One automatic monitoring station, Manchester Piccadilly, records PM_{2.5}. Between 2016 – 2020, the annual mean PM_{2.5} concentrations were below the annual mean target at Manchester Piccadilly.

6.3 Background Concentrations

- 6.3.1 There are no background monitoring locations in the vicinity of the proposed development site.
- 6.3.2 Background concentrations of NO₂, PM₁₀ and PM_{2.5} obtained from the background concentration maps provided by Defra for the grid squares covering the proposed development¹⁴ are shown in **Table 4**.

Table 4: Background Pollutant Concentrations Obtained for the 1km x 1km Grid Squares Covering the Site*

Grid Square	Pollutant	2019	2021
		(µg/m ³)	(µg/m ³)
386500, 397500	NO ₂	19.63	17.93
	PM ₁₀	12.17	11.79
	PM _{2.5}	8.19	7.93

* Background concentrations obtained from the latest 2018 based background maps

7 Construction Dust Impact Assessment

7.1 Step 1 – Requirement for a Detailed Assessment

- 7.1.1 There are sensitive receptors located within 350m of the site boundary, therefore, a detailed assessment of the construction phase of the development has been undertaken. There are no ecological designations within 50m of the site boundary or trackout routes that require assessment.

7.2 Step 2 – Assess the Risk of Dust Impacts

Step 2A Dust Emission Magnitude

- 7.2.1 The potential dust emission magnitude in relation to the development has been determined using the criteria detailed in **Table B1** in **Appendix B**. The scale and nature of works onsite were considered to determine the

¹⁴ <http://uk-air.defra.gov.uk/data/laqm-background-maps?year=2018>

potential dust emission magnitude for earthwork activities, construction and trackout activities. Demolition is not required at the development site.

- 7.2.2 Information to determine the classification has been estimated from the site plans, Google Earth and information provided by the Applicant. The dust emission magnitude is outlined in **Table 5**.

Table 5: Dust Emission Magnitudes for Each Activity

Activity	Dust Emission Magnitudes	Justification for Sensitivity Classification
Earthworks	Small	the site area is <2,500 m²
Construction	Small	total building volume to be constructed is <25,000 m³
Trackout	Small	there are likely to be <10 HDV outward movements in any one day

Step 2B Sensitivity of the Receptors to Dust Soiling and Health Effects

- 7.2.3 There are 1 – 10 dwellings located between 20 m – 50 m from the development site. In accordance with the criteria in **Table B2** in **Appendix B** and the IAQM guidance, the sensitivity of human receptors is **high**. In terms of dust soiling, several premises would be listed as high sensitivity for dust-soiling but have a medium sensitivity for human health from the development site, such as a car rental facility, car dealers and storage site. These premises are also between 20 m – 50 m from the site but the number of receptors is classified as 10 – 100 due to the number of vehicles and storage units. Furthermore, the high sensitive dust soiling receptors are within 20 m of the road edges used by traffic associated with the site construction

Step 2B Sensitivity of the Area to Dust Soiling and Human Health Effects of PM₁₀

- 7.2.4 The sensitivity of the area for dust soiling and human health effects has been determined using the criteria detailed in **Table B3** and **Table B4** respectively in **Appendix B**.
- 7.2.5 The sensitivity of the area to dust soiling and human health for each activity is summarised in **Table 6**.

Table 6: Outcome of Defining the Sensitivity of the Area

Pollution	Activity	Sensitivity of the Surrounding Area	Justification for Sensitivity Classification
Dust Soiling	Earthworks	Medium	There are 10 – 100 highly sensitive receptors between 20 m – 50 m of the site boundary
	Construction	Medium	There are 10 – 100 highly sensitive receptors between 20 m – 50 m of the site boundary
	Trackout	High	There are 10 – 100 highly sensitive receptors within 20 m of roads that relevant vehicles are likely to use that are up to 50 m from the site
Human Health	Earthworks	Low	There are 1 – 10 highly sensitive receptors between 20 m – 50 m of the site boundary and the background PM ₁₀ concentration is predicted to be <24 µg/m ³

	Construction	Low	There are 1 – 10 highly sensitive receptors between 20 m – 50 m of the site boundary and the background PM ₁₀ concentration is predicted to be <24 µg/m ³
	Trackout	Low	There are 1 – 10 highly sensitive receptors between 20 m – 50 m of roads that relevant vehicles are likely to use that are up to 50 m from the site and the background PM ₁₀ concentration is predicted to be <24 µg/m ³

Step 2C Risk of Impacts

- 7.2.6 The dust emission magnitude and sensitivity of the area were combined and the risk of impacts determined using the criteria detailed in **Table B5** to **Table B8** in **Appendix B**.
- 7.2.7 A summary of the risks, before mitigation measures are applied, for dust soiling and human health are shown in **Table 7**.

Table 7: Risk of Dust Impacts

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

7.3 Step 3 – Site-Specific Mitigation

- 7.3.1 Step 3 of the IAQM guidance identifies appropriate site-specific mitigation. These measures are related to the site risk for each activity. Mitigation measures specific to construction and trackout are proposed based on the risk classifications in **Table 7**. Specific mitigation measures are not required for earthworks as the risk is low. Recommended mitigation measures are shown in **Appendix D**.
- 7.3.2 The general mitigation measures (for site management, preparing and maintaining the site, operating vehicle/machinery, operations and waste management), are appropriate for a site with a ‘low risk’ classification (in this instance the site is classified as “medium” risk due to earthworks, construction and trackout)¹⁵.

¹⁵ For those mitigation measures that are general, the highest risk category should be applied. For example, if the site is medium risk for earthworks and construction, but a high risk for demolition and track-out, the general measures applicable to a high risk site should be applied.

7.4 Step 4 – Determine Significant Effects

- 7.4.1 The characteristics of the site and the surrounding area suggest that mitigation would not be impracticable or ineffective. With the implementation of the mitigation measures, therefore, the residual impacts from the construction are considered to be not significant when considered following IAQM guidance.

8 Road Traffic Assessment

- 8.1 Contours of NO₂, PM₁₀, and PM_{2.5} concentrations across the ground floor (z=1.5) of the proposed development have been produced.
- 8.2 **Appendix F** shows the NO₂ concentrations across the proposed development site, including the playground, are expected to be below 35 µg/m³. **Appendix G** shows the PM₁₀ concentrations across the proposed development site, including the playground, are expected to be below 20 µg/m³. **Appendix H** shows the PM_{2.5} concentrations across the proposed development site, including the playground, are expected to be below 10 µg/m³.
- 8.3 Therefore, concentrations of NO₂ and PM₁₀ are likely to be below their respective long and short-term objectives at the proposed development site. Concentrations of PM_{2.5} are expected to be below the annual mean target. Furthermore, the whole site is also expected to be below the WHO 2005 AQG for NO₂, PM₁₀, and PM_{2.5}.
- 8.4 The site is therefore considered suitable as a nursery, with regard to air quality.

9 Impact of the Proposed Development on Existing Air Quality

- 9.1 As discussed above, the development is located within an AQMA and is expected to introduce an increase in AADT flows of approximately 98 LDV and 0 HDV. Additionally, the development traffic is expected to split approximately 50:50 on Ashton Old Road. As these changes are less than 100 LDV and 25 HDV AADT, IAQM guidance¹⁰ indicates that the impact of road traffic associated with the development is likely to have an insignificant impact on local air quality.

10 Mitigation

- 10.1 Whilst this site will not have a significant impact on local air quality, the GMCA AQAP requires developments to meet the recommended mitigation measures by IAQM^{2,10}.
- 10.2 The relevant mitigation measures consist of the following:
- Control of Construction Emissions: mitigation of construction dust will be achieved by the use of the mitigation measures outlined in **Appendix D**;
 - Heating requirements: all gas-fired boilers will meet a minimum standard of <40 mgNO_x/kWh¹⁰; and
 - Five electric charging points.

- 10.3 Mitigation is not required to safeguard future users of the development site, as the proposed development site, including the nursery and playground, is expected to be exposed to air pollutants below the annual mean and short-term NO₂ and PM₁₀ objectives as well as below the PM_{2.5} target. Furthermore, the predicted pollutants are also expected to be below the WHO 2005 AQG.

11 Summary of Impacts and Conclusion

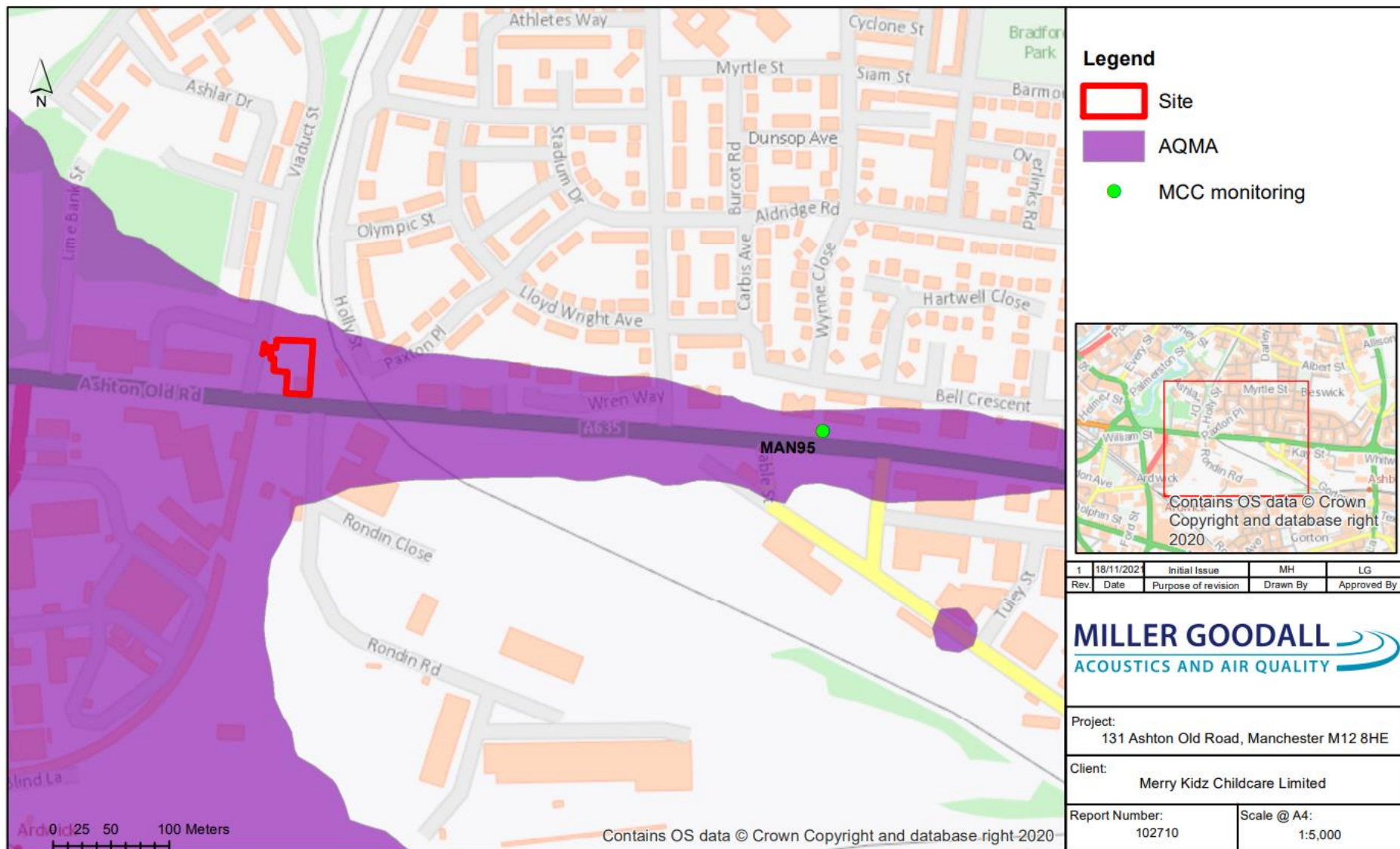
- 11.1 This air quality report assesses the potential changes in air quality due to the construction and operation of the proposed development and whether these potential changes would significantly alter air quality.
- 11.2 The assessment of dust soiling and human health impacts during the construction phase of the development results in the proposal of dust mitigation measures. The implementation of these will ensure that residual dust impacts during the construction phase are not significant.
- 11.3 Concentrations of NO₂ and PM₁₀ are likely to be below their respective long and short-term objectives at the proposed development site which is therefore considered suitable as a nursery, with regards to air quality. Concentrations of PM_{2.5} are expected to be below the annual mean target.
- 11.4 The proposed development is not expected to have a significant impact on local air quality.
- 11.5 There is, therefore, no reason for this application to be refused on the grounds of air quality.

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APPENDICES

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Appendix A: Location of site, AQMA and MCC monitoring



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Appendix B: IAQM Dust Risk Assessment Methodology

The following section outlines criteria developed by the IAQM for the assessment of air quality impacts arising from construction and demolition activities¹⁰. The assessment procedure is divided into four steps and is summarised below:

Step 1: Screen the Need for a Detailed Assessment

An assessment will normally be required where there are human receptors within 350 m of the site boundary and/or within 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance(s). Ecological receptors within 50 m of the site boundary or within 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance(s), are also identified at this stage. An ecological receptor refers to any sensitive habitat affected by dust soiling. For locations with a statutory designation, such as a Site of Specific Scientific Interest (SSSI), Special Area of Conservation (SACs) and Special Protection Areas (SPAs), consideration should be given as to whether the particular site is sensitive to dust. Some non-statutory sites may also be considered if appropriate.

Where the need for a more detailed assessment is screened out, it can be concluded that the level of risk is 'negligible' and any effects will not be significant.

Step 2: Assess the Risk of Dust Impacts

In step two, a site is allocated to a risk category on the basis of the scale and nature of the works (Step 2A) and the sensitivity of the area to dust impacts (Step 2B). These two factors are combined in Step 2C to determine the risk of dust impacts before the implementation of mitigation measures. The assigned risk categories may be different for each of the construction activities outlined by the IAQM (construction, demolition, earthworks and trackout). A site can be divided into zones, for example on a large site where there are differing distances to the nearest receptors.

Step 2A: Define the Potential Dust Emission Magnitude

Dust emission magnitude is based on the scale of the anticipated works and is classified as Small, Medium or Large. The IAQM guidance recommends that the dust emission magnitude is determined separately for demolition, earthworks, construction and trackout. **Table B1** describes the potential dust emission class criteria for each outlined activity.

Table B1: Criteria Used in the Determination of Dust Emission Magnitude

Activity	Criteria used to Determine Dust Emission Magnitude		
	Small	Medium	Large
Demolition	Total building volume <20,000 m ³ , construction materials with low potential for dust release.	Total building volume 20,000 m ³ – 50,000 m ³ , potential dusty construction material.	Total building volume >50,000 m ³ , potentially dusty construction material.
Earthworks	Total site area <2,500 m ² , soil type with large grain	Total site area 2,500 – 10,000 m ² , moderately dusty soil type	Total site area >10,000 m ² , potentially dusty soil type
Construction	Total building volume <25,000 m ³ .	Total building volume 25,000 – 100,000 m ³ .	Total building volume >100,000 m ³ .
Trackout	<10 outward HDV trips in any one day. Unpaved road length <50 m.	10-50 outward HDV trips in any one day. Unpaved road length 50-100 m.	>50 outward HDV trips in any one day. Unpaved road length >100 m.

Step 2B: Define the Sensitivity of the Area

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

- the specific sensitivities of receptors in the area;
- the proximity and number of receptors;
- the local background PM₁₀ concentration; and
- site-specific factors, such as whether there are natural shelters, such as trees, to reduce the risk of windblown dust.

The criteria detailed in **Table B2** is used to determine the sensitivity of the receptor in relation to dust soiling, health effects and ecological effects.

Table B2: Criteria for Determining Sensitivity of Receptors

Sensitivity of Receptor	Criteria for Determining Sensitivity		
	Dust Soiling Effects	Health Effects of PM ₁₀	Ecological Sites
High	Dwellings, museums and other culturally important collections, medium and long-term car parks and car showrooms	Residential properties, hospitals, schools and residential care homes	International or national designation <i>and</i> the features may be affected by dust soiling
Medium	Parks, places of work	Office and shop workers not occupationally exposed to PM ₁₀	Presence of an important plant species where dust sensitivity is uncertain or locations with a national designation with features that may be affected by dust deposition
Low	Playing fields, farmland, footpaths, short-term car parks and roads	Public footpaths, playing fields, parks and shopping streets	Local designation where features may be affected by dust deposition

Table B3 and **Table B4** are then used to define the sensitivity of the area to dust soiling and human health effects. This should be derived for each of construction, demolition, earthworks and trackout.

Table B3: Sensitivity of the Area to Dust Soiling Effects on People and Property.

Receptor Sensitivity	Number of Receptors	Distance from Source (m)*			
		<20	<50	<100	<350
High	>100	High	High	Medium	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

*distances considered are to the dust source

Table B4: Sensitivity of the Area to Human Health Impacts

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

The sensitivity of the area is then summarised.

Step 2C Define the Risks of Impacts

The dust emission magnitude from **Table B1** and sensitivity of the area and receptors from **Table B2**, **Table B3** and **Table B4** are combined, and the risk of impacts from each activity (demolition, earthworks, construction and trackout) before mitigation is applied, is determined using the criteria detailed in **Table B5** to **Table B8**.

Table B5: Risk of Dust Impacts - Demolition

Potential Impact Sensitivity of the Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Low	Medium Risk	Low Risk	Negligible

Table B6: Risk of Dust Impacts- Earthworks

Potential Impact Sensitivity of the Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Table B7: Risk of Dust Impacts- Construction

Potential Impact Sensitivity of the Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Table B8: Risk of Dust Impacts- Trackout

Potential Impact Sensitivity of the Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Low Risk	Negligible
Low	Low Risk	Low Risk	Negligible

Step 3 Determine Site Specific Mitigation

Step three of the IAQM guidance identifies appropriate site-specific mitigation. These measures are related to whether the site is a low, medium or high risk site.

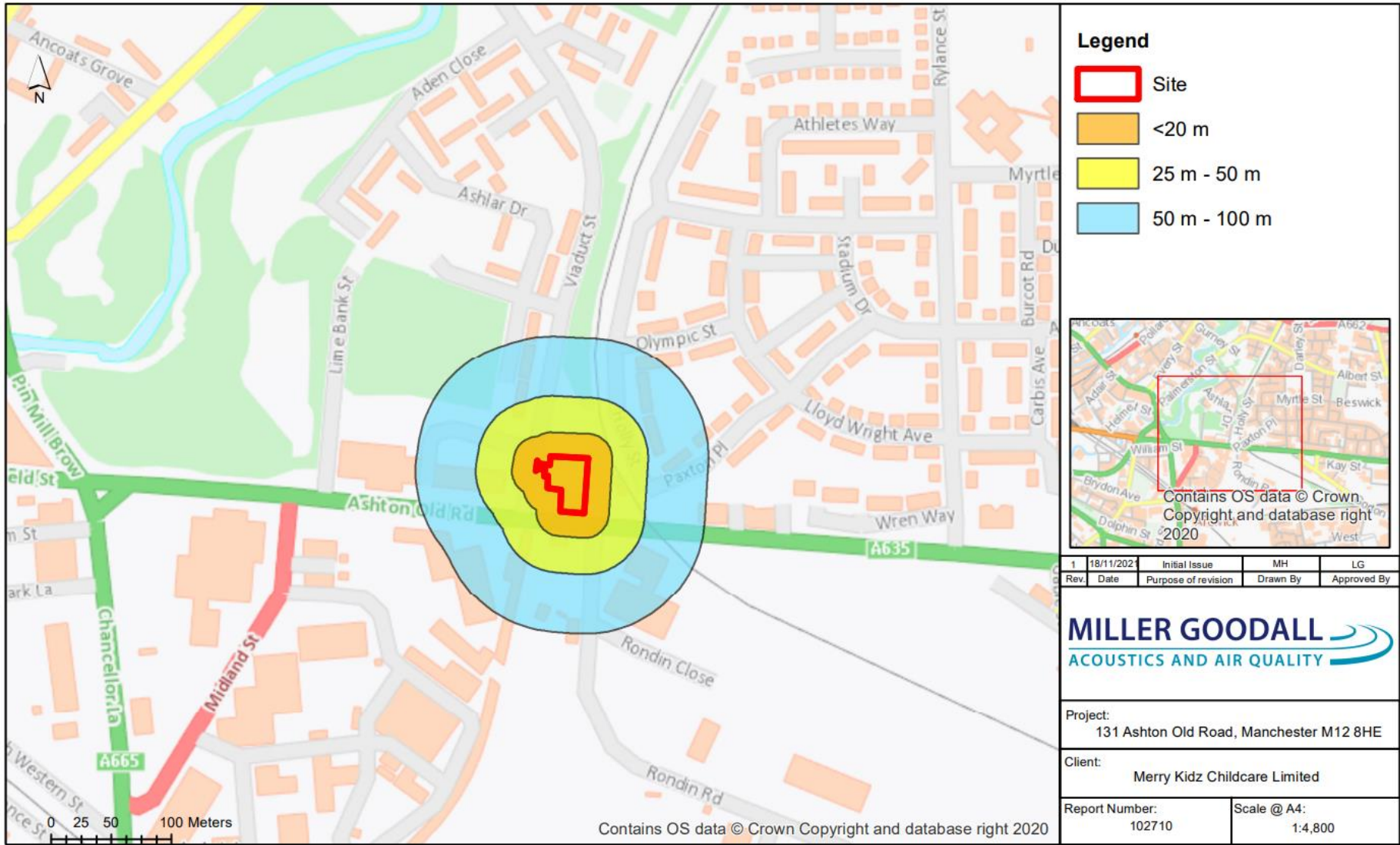
Step 4 Determine Significance of Residual Effects

At step four the significance of residual effects is assessed. For almost all construction activity, the aim should be to prevent significant effects on receptors through the use of effective mitigation. Experience shows that this is normally possible. Hence the residual effect will normally be 'not significant'.

There may be cases where, for example, there is inadequate access to water for dust suppression to be effective, and even with other mitigation measures in place there may be a significant effect. Therefore, it is important to consider the specific characteristics of the site and the surrounding area to ensure that a conclusion of no significant effect is robust.

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Appendix C: Construction Dust Duffer Zones



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Appendix D: IAQM Dust Assessment Mitigation

xx Highly Recommended

x Desirable

Measures relevant for demolition, earthworks, construction and trackout.

Mitigation Measure	Low Risk
Communications	
Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.	xx
Display the head or regional office contact information.	xx
Develop and implement a Dust Management Plan (DMP).	x
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.	xx
Make the complaints log available to the local authority when asked.	xx
Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book.	xx
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.	x
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.	xx
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.	xx
Preparing and maintaining the site	
Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.	xx
Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.	xx
Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period.	x
Avoid site runoff of water or mud.	xx
Keep site fencing, barriers and scaffolding clean using wet methods.	x
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.	x
Cover, seed or fence stockpiles to prevent wind whipping.	x

Operating vehicle/machinery and sustainable travel

Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone and the London NRMM standards, where applicable.	xx
Ensure all vehicles switch off engines when stationary - no idling vehicles.	xx
Avoid the use of diesel or petrol-powered generators and use mains electricity or battery powered equipment where practicable.	xx
Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate).	x

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.	xx
Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.	xx
Use enclosed chutes and conveyors and covered skips.	xx
Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.	xx
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.	x

Waste management

Avoid bonfires and burning of waste materials.	xx
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Measures specific to construction.

Mitigation Measure	Low Risk
Avoid scabbling (roughening of concrete surfaces) if possible.	x
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.	x

Measures specific to trackout.

Mitigation Measure	Low Risk
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.	x
Avoid dry sweeping of large areas.	x

Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.	x
Record all inspections of haul routes and any subsequent action in a site log book.	x
Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).	x

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Appendix E: Assessment and Model Inputs

This appendix outlines the inputs used in the road traffic emissions assessment.

Traffic Data

The ADMS-Roads model requires the inclusion of detailed road traffic data for the routes to be affected by the proposed development.

Traffic data has been provided as 24-hour Annual Average Daily Traffic (AADT) and heavy-duty vehicle percentages (HGV%). No average speed traffic survey information was available, therefore, posted speed limits have been utilised in the model. Areas of congestion, queuing and junction locations have been modelled at reduced speeds of 5 km/h.

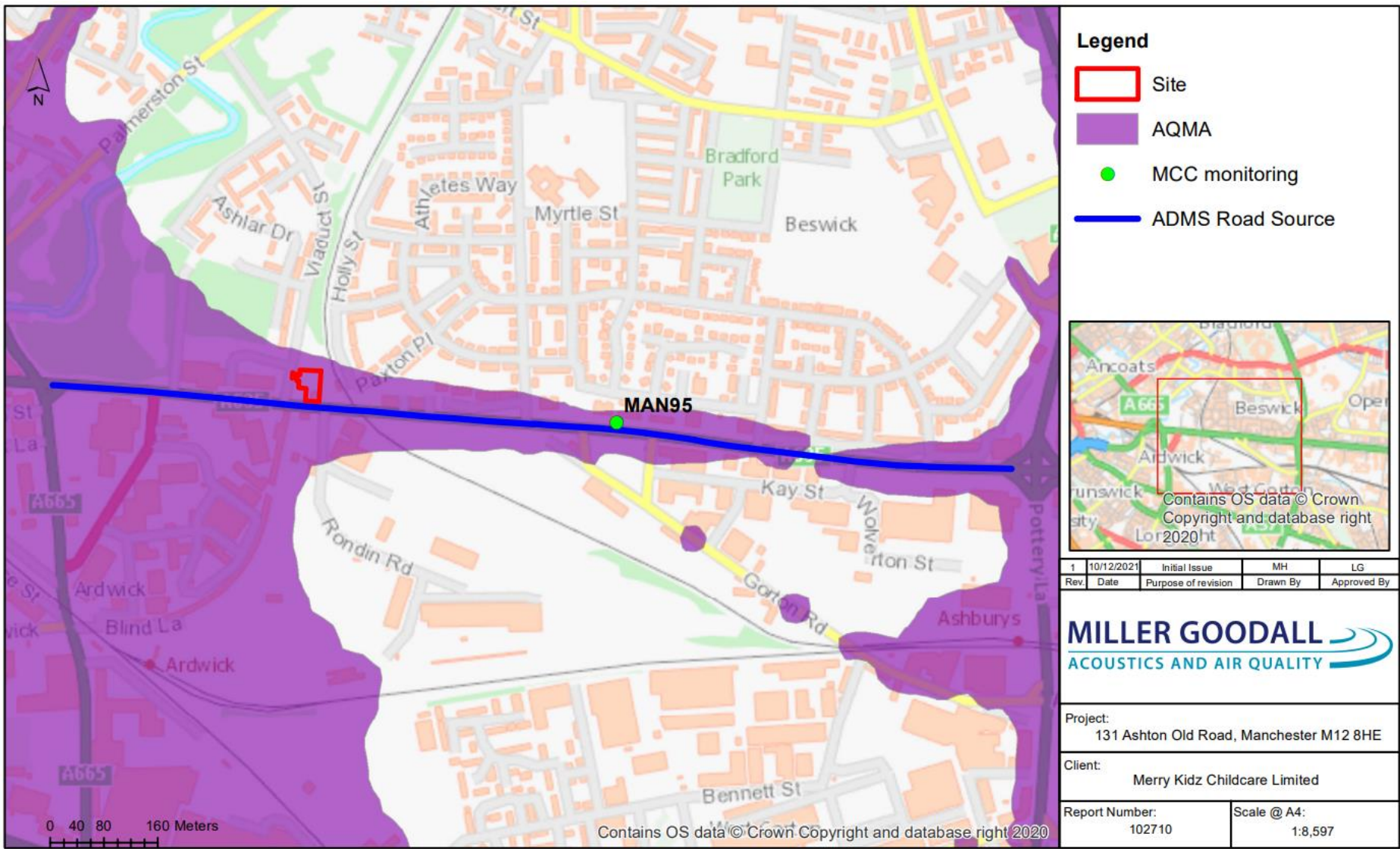
After reviewing the National LIDAR digital surface model of the study area, it was concluded that street canyons were not necessary. The National LIDAR digital terrain model of the study area was also reviewed, from which it was concluded that percentage gradients on the modelled roads were not necessary.

The traffic data used in the assessment is detailed in **Table E1** and presented in **Figure E1**.

Table E1: Traffic Data used in the Assessment

Link Number	Road	Max Speed (km/h)	2019 Base Year/Verification		2021 Base Year		2021 With Development	
			AADT LDV	AADT HDV	AADT LDV	AADT HDV	AADT LDV	AADT HDV
1	Ashton Old Road	48	25,956	1,199	27,072	1,251	27,121	1,251

Figure E1: Spatial Model Scope



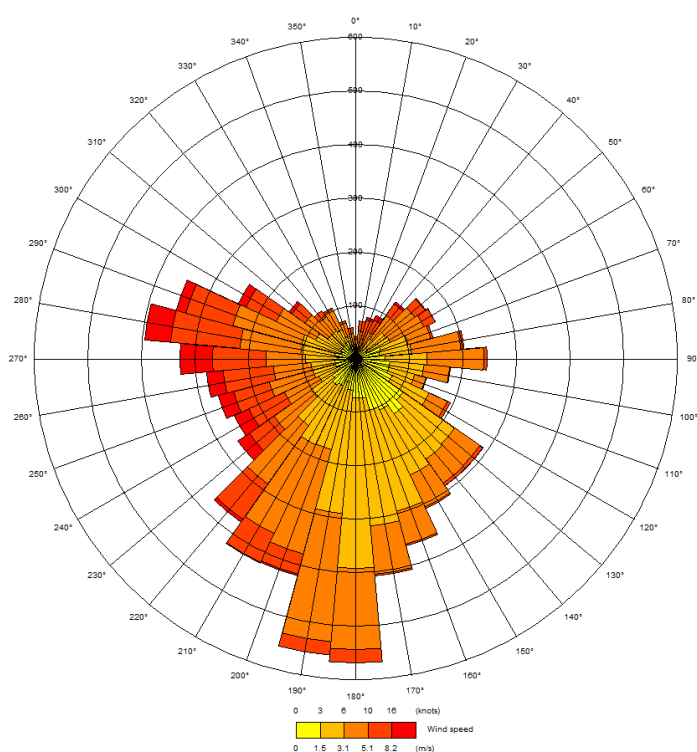
Meteorological Data

The air quality assessment includes the use of the 2019 Manchester Airport meteorological recording station.

The Manchester Airport recording station is located approximately 14 km to the southwest of the proposed development site and is considered to be the most representative of the site conditions in terms of altitude and distance.

The 2019 wind rose for the Manchester Airport recording station is provided in **Figure E2**.

Figure E2: Wind Rose



Dispersion and Meteorological Site Characteristics

The air dispersion characteristics for the site and meteorological recording station differ, therefore, these have been adjusted accordingly within ADMS-Roads. **Table E2** details the adjustments made.

Table E2: Dispersion and Meteorological Site Characteristics

Parameter	Dispersion Site	Meteorological Site
Surface Roughness	0.5 m	0.2 m
Surface Albedo	0.23	0.23
Minimum Monin-Obukhov Length	30 m	10 m
Priestley-Taylor Parameter	1	1

Model Verification

Monitoring is undertaken by MCC at one monitoring site within the study area using diffusion tube MAN95 as shown in **Appendix A**. Concentrations of NO₂ at this site was predicted using ADMS for use in the verification process as detailed in **Table E3**.

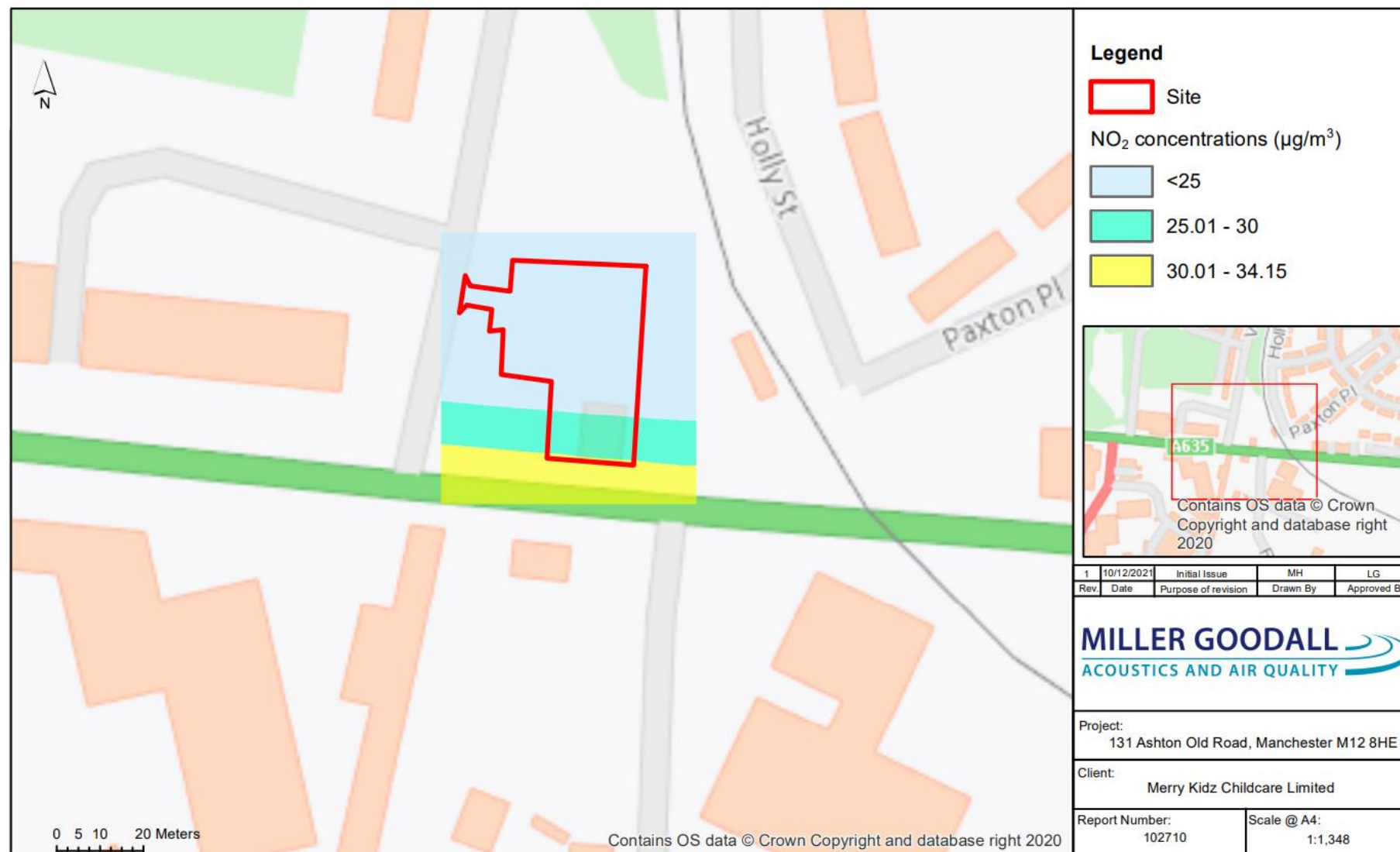
All modelled road NO_x concentrations were adjusted by a factor of 1.22 (**Table E3**).

There is no PM₁₀ nor PM_{2.5} monitoring undertaken within the study area, therefore it was not possible to undertake verification of PM₁₀ or PM_{2.5} concentrations.

Table E3: NO₂ Model Verification Procedure

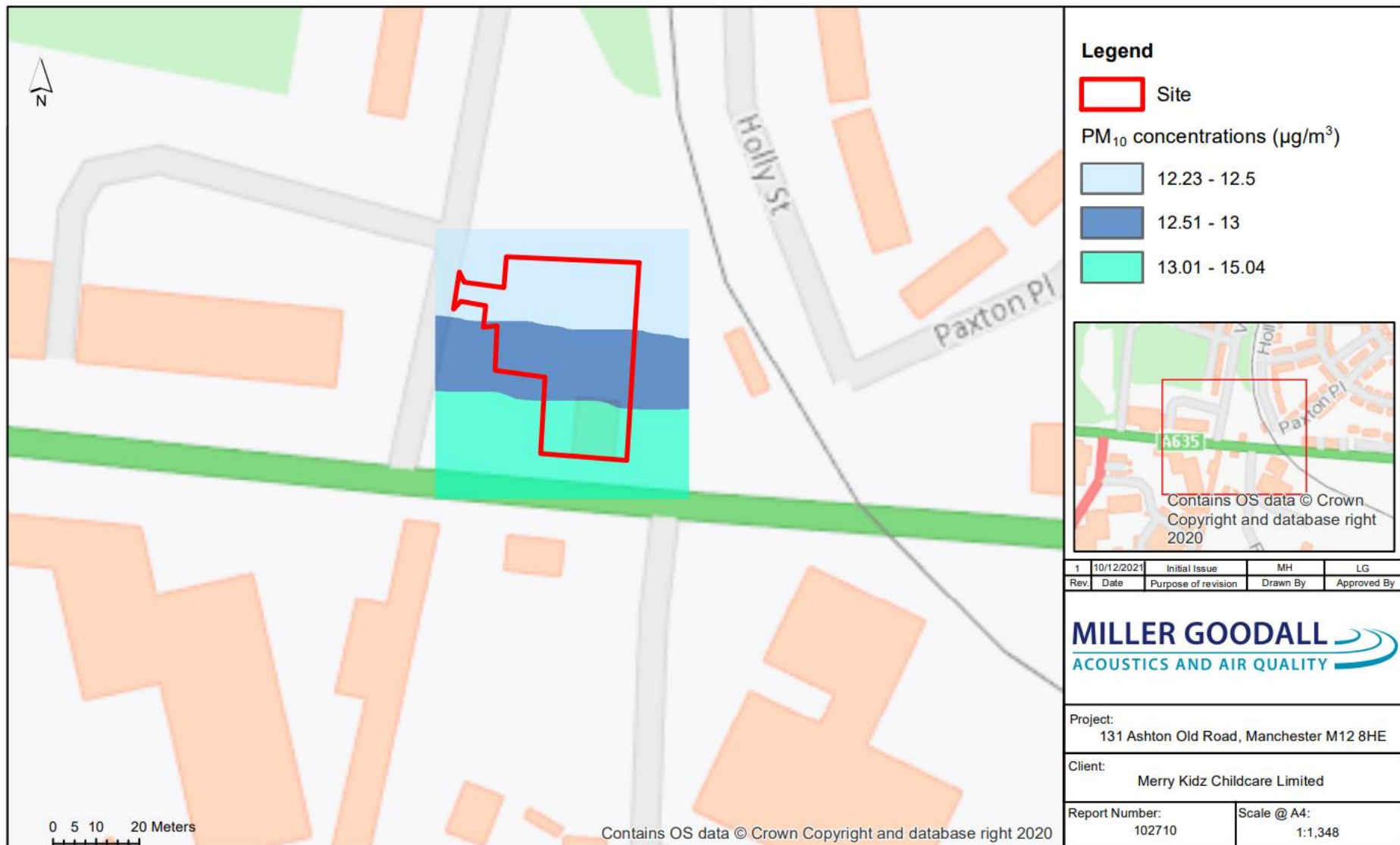
Monitor	Monitored Total NO ₂	Monitored Road NO _x	Background NO ₂	Background NO _x	Monitored Road Contribution NO ₂ (total - background)	Modelled Road Contribution NO _x (excludes background)	Ratio of Monitored Road Contribution NO _x / Modelled Road Contribution NO _x	Adjustment Factor	Adjusted Road Contribution NO _x	Adjusted Modelled Total Nox (including background NO _x)	Modelled Total NO ₂ (based on empirical NO _x / NO ₂ relationship)	% Difference [(modelled - monitored) / monitored] x 100
MAN95	43.40	49.84	19.63	28.26	23.77	40.81	1.22	1.22	49.84	78.10	43.40	0.00

Appendix F: NO₂ Concentrations across the development in the 2021 'with' scenario



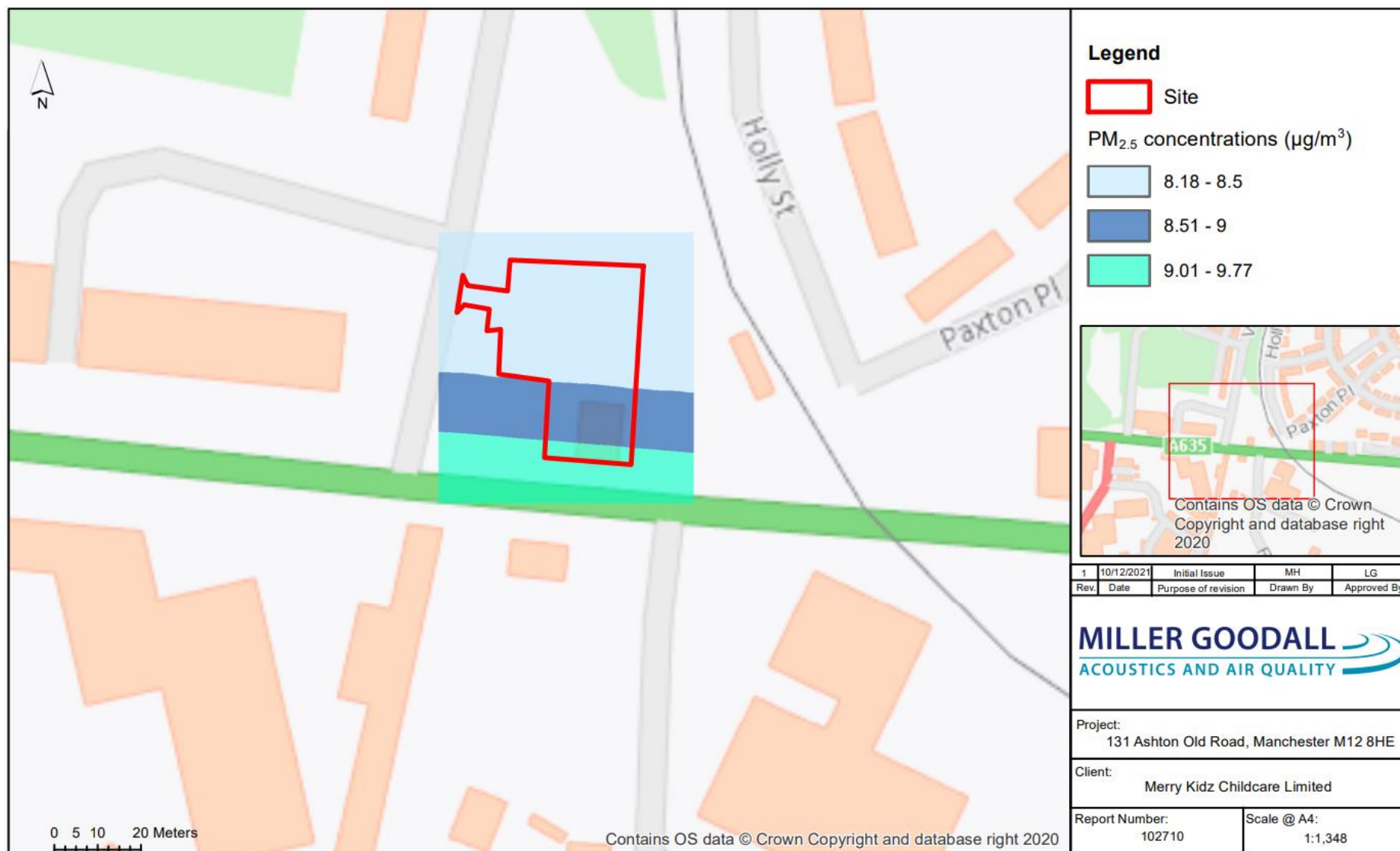
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Appendix G: PM₁₀ Concentrations across the development in the 2021 'with' scenario



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Appendix H: PM_{2.5} Concentrations across the development in the 2021 'with' scenario



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Glossary of Terms

AADT Annual Average Daily Traffic flow

Air Quality Standard Pollutant standards relate to ambient pollutant concentrations in air, set on the basis of medical and scientific evidence of how each pollutant affects human health and the environment

Air Quality Objective Pollutant Objectives incorporate future dates by which a standard is to be achieved, taking into account economic considerations, practicability and technical feasibility

Annual Mean A mean pollutant concentration value in air which is calculated on a yearly basis, yielding one annual mean per calendar year. In the UK air quality regulations, the annual mean for a particular substance at a particular location for a particular calendar year is:

- (a) in the case of lead, the mean of the daily levels for that year;
- (b) in the case of nitrogen dioxide, the mean of the hourly means for that year;
- (c) in the case of PM₁₀, the mean of the 24-hour means for that year.

Annoyance (Dust) Loss of amenity due to dust deposition or visible dust plumes, often related to people making complaints, but not necessarily sufficient to be a legal nuisance.

AQAP Air Quality Action Plan

AQEG Air Quality Expert Group

AQMA Air Quality Management Area

AQMP Air Quality Management Plan

AQO Air Quality Objective

AQS Air Quality Strategy for England, Scotland, Wales and Northern Ireland

Background Concentrations The term used to describe pollutant concentrations which exist in the ambient atmosphere, excluding local pollution sources such as roads and stacks

Construction Any activity involved with the provision of a new structure (or structures), its modification or refurbishment. A structure will include a residential dwelling, office building, retail outlet, road, etc.

Construction Impact Assessment An assessment of the impacts of demolition, earthworks, construction and trackout. In this Guidance, specifically the air quality impacts.

Defra Department for Environment, Food and Rural Affairs

Demolition Any activity involved with the removal of an existing structure (or structures). This may also be referred to as de-construction, specifically when a building is to be removed a small part at a time.

Deposited Dust that is no longer in the air and which has settled onto a surface. Deposited dust is also sometimes called amenity dust or nuisance dust, with the term nuisance applied in the general sense rather than the specific legal definition.

DMP Dust Management Plan; a document that describes the site-specific methods to be used to control dust emissions.

Dust Solid particles that are suspended in air, or have settled out onto a surface after having been suspended in air. The terms dust and particulate matter (PM) are often used interchangeably, although in some contexts one term tends to be used in preference to the other. In this guidance the term 'dust' has been used to include the particles that give rise to soiling, and to other human health and ecological effects. Note: this is different to the definition given in BS 6069, where dust refers to particles up to 75 µm in diameter.

Earthworks Covers the processes of soil-stripping, ground-levelling, excavation and landscaping.

Effects The consequences of the changes in airborne concentration and/or dust deposition for a receptor. These might manifest as annoyance due to soiling, increased morbidity or mortality due to exposure to PM₁₀ or PM_{2.5} or plant dieback due to reduced photosynthesis. The term 'significant effect' has a specific meaning in EIA regulations. The opposite is an insignificant effect. In the context of construction impacts any effect will usually be adverse, however, professional judgement is required to determine whether this adverse effect is significant based in the evidence presented.

EPUK Environmental Protection UK

HDV Heavy Duty Vehicle

Impacts The changes in airborne concentrations and/or dust deposition. A scheme can have an 'impact' on airborne dust without having any 'effects', for instance if there are no receptors to experience the impact.

LAQM Local Air Quality Management

LDV Light Duty Vehicle

Mg/m³ Microgrammes (of pollutant) per cubic metre of air. A measure of concentration in terms of mass per unit volume. A concentration of 1 µg/m³ means that one cubic metre of air contains one microgramme (millionth of a gramme) of pollutant

NO₂ Nitrogen Dioxide

NO_x A collective term used to represent the mixture of nitrogen oxides in the atmosphere, as nitric oxide (NO) and nitrogen dioxide (NO₂)

NPPF National Planning Policy Framework

Nuisance The term nuisance dust is often used in a general sense when describing amenity dust. However, this term also has specific meanings in environmental law:

Statutory nuisance, as defined in S79(1) of the Environmental Protection Act 1990 (as amended from time to time).

Private nuisance, arising from substantial interference with a person's enjoyment and use of his land.

Public nuisance, arising from an act or omission that obstructs, damages or inconveniences the right of the community.

Each of these applying in so far as the nuisance relates to the unacceptable effects of emissions. It is recognised that a significant loss of amenity may occur at lower levels of emission than would constitute a statutory nuisance.

Note: as nuisance has a specific meaning in environmental law, and to avoid confusion, it is recommended that the term is not used in a more general sense.

PM_{2.5} The fraction of particles with a mean aerodynamic diameter equal to, or less than, 2.5 µm. More strictly, particulate matter which passes through a size selective inlet as defined in the reference method for the sampling and measurement of PM_{2.5}, EN 14907, with a 50% efficiency cut-off at 2.5 µm aerodynamic diameter

PM₁₀ The fraction of particles with a mean aerodynamic diameter equal to, or less than, 10 µm. More strictly, particulate matter which passes through a size selective inlet as defined in the reference method for the sampling and measurement of PM₁₀, EN 12341, with a 50% efficiency cut-off at 10 µm aerodynamic diameter

Running Annual Mean A mean pollutant concentration value in air which is calculated on an hourly basis, yielding one running annual mean per hour. The running annual mean for a particular substance at a particular location for a particular hour is the mean of the hourly levels for that substance at that location for that hour and the preceding 8759 hours

Trackout The transport of dust and dirt from the construction/demolition site onto the public road network, where it may be deposited and then re-suspended by vehicles using the network. This arises when heavy duty vehicles (HDVs) leave the construction/demolition site with dusty materials, which may then spill onto the road, and/or when HDVs transfer dust and dirt onto the road having travelled over muddy ground on site.

