

AIR QUALITY ASSESSMENT

on behalf of

RAYBURN TRADING COMPANY LTD

for

90 NORTH STREET, MANCHESTER M8 8RA

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Summary

This air quality report has been prepared to accompany a planning application for the erection of a lightweight steel portal frame building for the use of storage of finished products before dispatching at 90 North Street, Manchester M8 8RA.

This report provides a review of existing air quality in the vicinity of the proposed application site and the impact of the proposed application on local air quality during both its construction and operational phases.

The assessment of dust soiling and human health impacts during the erection of the proposed application site 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 short-term objectives at the proposed development site which is therefore considered suitable for commercial use with regards to air quality. Concentrations of PM_{2.5} are expected to be below the annual mean target.

The proposed application site could impact local air quality through road traffic emissions. Vehicle emissions associated with the proposed application site are not considered to have a significant impact on local air quality.

The site is considered suitable for the proposed storage use with regard to air quality. There is, therefore, no reason for this application site to be refused on the grounds of air quality.

Prepared By Unam Ejaz

Reviewed By Melody Horan

Signed



18th October 2021

Signed



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Contents

Summary	1
Contents	0
1 Introduction.....	1
2 Site Description	1
3 Proposed Application Site.....	1
4 Policy Context	1
4.1 Air Quality Objectives	1
4.2 Greater Manchester Action Plan 2016-2021	2
4.3 Manchester City Council Planning Policy	3
5 Methodology	3
5.1 Data Sources	3
5.2 Construction Dust Assessment	4
5.3 Air Quality Assessment	4
6 Baseline Air Quality	5
6.1 Introduction	5
6.2 Local Authority Air Quality Monitoring	5
6.3 Background Concentrations	6
7 Construction Dust Impact Assessment	6
7.1 Step 1 – Requirement for a Detailed Assessment.....	6
7.2 Step 2 – Assess the Risk of Dust Impacts	6
7.3 Step 3 – Site-Specific Mitigation.....	8
7.4 Step 4 – Determine Significant Effects	8
8 Road Traffic Assessment	8
8.1 Site Suitability Assessment	8
8.2 Impact of Development	9
9 Summary of Impacts and Conclusion	9
APPENDICES	11
Glossary of Terms	25

1 Introduction

- 1.1 Miller Goodall Ltd has been instructed to prepare an air quality assessment to accompany a planning application for a proposed erection of a semi-permanent building at 90 North Street, Manchester M8 8RA. The site lies within the administrative boundary of Manchester City Council (MCC).
- 1.2 The report provides a review of the existing air quality at and around the proposed application site and assesses the potential impact of the application site on local air quality, in accordance with Local Air Quality Management Technical Guidance¹.
- 1.3 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 application site on concentrations of NO₂, PM₁₀ and PM_{2.5}.

2 Site Description

- 2.1 The application site is currently vacant and is located approximately 2 km to the north of Manchester's City Centre.
- 2.2 The application site is located in an area characterised by industrial/commercial buildings. To the north of the proposed application site is Rayburn Way across which there are commercial units. To the east and south there are parking lots and the Rayburn Way and North Street roundabout is located adjacent to the site, at its northwest corner. North Street runs along the western site boundary, beyond which there are commercial units.
- 2.3 The application site is not located within an Air Quality Management Area (AQMA). The closest AQMA is located along the A665 (Cheetham Hill Road). The site location and its relationship to Greater Manchester Authority's AQMA are shown in **Appendix A**.

3 Proposed Application Site

- 3.1 The proposed application is for the erection of a Herchenbach semi-permanent detached building at the north-western corner of the existing Rayburn Trading site. Access to the site will be via the existing access onto Rayburn Way. There are no parking spaces associated with the application site.
- 3.2 The red line boundary for the proposed application site is shown in **Appendix A**.

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

¹ Department for the Environment Food and Rural Affairs (2018) 'Local Air Quality Management Technical Guidance Document LAQM.TG (16)', London: Defra.

(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 2018².
- 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 AQMAs 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.
- 4.1.6 As the development is for commercial use, the annual mean air quality objectives do not apply; however, the short-term objectives still apply¹.

4.2 Greater Manchester Action Plan 2016-2021

- 4.2.1 The Greater Manchester Combined Authority (GMCA) Air Quality Action Plan 2016-2021³ provides information in respect of the actions planned by the Greater Manchester Authorities in relation to declared AQMAs. Action

² UK Parliament (2018): <http://www.legislation.gov.uk/ukpga/2018/16/contents/enacted>

³ GMCA (2016) Greater Manchester Air Quality Action Plan 2016-2021

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 Manchester City Council Planning Policy

- 4.3.1 Manchester City Council Core Strategy Policy EN16 discusses the role of the planning to improve air quality and states:

“Policy EN 16

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.”

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**.

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 (2021) <i>2020 Air Quality Annual Status Report for Greater Manchester</i>
Manchester City Council (MCC)	MCC (2012) <i>Core Strategy Development Plan Document</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 2016, LAQM.TG(16), updated 2021</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>
Defra's LAQM Support Tools	Local Air Quality Management 1 km x 1 km grid background pollutant maps
SK Transport Planning Ltd	Traffic Data

5.2 Construction Dust Assessment

- 5.2.1 The IAQM has produced guidance⁴ 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 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**.

5.3 Air Quality Assessment

- 5.3.1 A simple assessment of air quality in terms of the impact of the development on concentrations of NO₂, PM₁₀ and PM_{2.5}, which relies on already published information and without quantification of impacts, has been completed using sources such as the Local Authority's monitoring network and the Defra LAQM support tools. A review of the site suitability for future residents and users of the development is also undertaken.

⁴ IAQM "Assessment of dust from demolition and construction" v1.1 2014

6 Baseline Air Quality

6.1 Introduction

- 6.1.1 Baseline air quality at the application site has been established by examining monitoring data produced by MCC and background concentration maps provided by Defra for the grid squares covering the application site.
- 6.1.2 Transport for Greater Manchester (TfGM) conducted air pollution dispersion modelling for the year 2016 at a height of 0 m for the Combined Authority members which was used to determine the location and extent of the AQMA. The AQMA was declared where the model predicted annual average NO₂ concentrations to be above 35 µg/m³. There are pockets of Greater Manchester's AQMA along the A665. The proposed application site is not located within the AQMA. The site location and its relationship to the AQMA are shown in **Appendix A**.
- 6.1.3 Baseline air quality at the application site has been established by examining monitoring data provided in the GMCA 2020 Annual Status Report, background concentration maps provided by Defra for the grid squares covering the application site.

6.2 Local Authority Air Quality Monitoring

Nitrogen Dioxide (NO₂)

- 6.2.1 MCC operates three automatic monitoring sites within its administrative area none of which are representative of the application site due to the distance and position.
- 6.2.2 MCC also operates an extensive non-automatic monitoring network. The closest monitor is MAN36, which is located approximately 770 m to the southeast of the site. However, this monitor is positioned 3 m from the kerbside of the A664, whereas the proposed development is approximately 90 m from the nearest A-road, the A665. The data recorded at MA36NO is provided for reference.
- 6.2.3 The results from the diffusion tube are shown in **Table 3** and the monitoring location is shown in **Appendix A**.

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
MA36NO	385203 399750	40.1	34.0	33.1	31.7	24.3
Rochdale Road (Roadside)						
Annual Mean NO₂ air quality objective		40 µg/m³				

- 6.2.4 The results indicate that the short-term objective for NO₂ is unlikely to be exceeded at the development site as monitored annual mean concentrations are well below the indicative screening concentration of 60 µg/m³.
- 6.2.5 NO₂ concentrations have improved at MA36NO during the period shown and have been below the annual mean objective of 40 µg/m³ for the past 4 years.

Particulate Matter (PM₁₀ & PM_{2.5})

6.2.6 MCC does not undertake PM₁₀ or PM_{2.5} monitoring in the vicinity of the study area.

6.3 Background Concentrations

6.3.1 There are no background monitoring locations in the vicinity of the application site or at receptor locations included in the air quality assessment

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 application site and receptor locations⁵ are shown in **Table 4**.

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

Grid Square	Pollutant	2021
		(µg/m ³)
384500, 399500	NO ₂	20.34
	PM ₁₀	12.13
	PM _{2.5}	7.94

* 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 which requires 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 potential dust emission magnitude for earthwork activities, construction and trackout activities. Information to determine the classification has been estimated from the site plans, Google Earth and information provided by the Applicant.

7.2.2 There is no demolition as the site is vacant and minimal earthworks and construction involved. The construction involves using the steel trapezoidal sheet metal panel cladding and PVC Tarpauline roof. The dust emission magnitude is outlined in **Table 5**.

⁵ <http://uk-air.defra.gov.uk/data/laqm-background-maps?year=2018>

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 < 10 HDV outward movements in any one day

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

- 7.2.3 Medium- to long-term car parks, showrooms, and museums are defined as **High** sensitivity receptors with respect to dust soiling as per the guidance. There are car parks associated with workplace within 20 m to the east and south of the proposed application site. There is also a car showroom within a distance of 50 m.
- 7.2.4 Office and shop workers are defined as **Medium** sensitivity receptors with respect to health effects as per the guidance. There are offices and shops within the distance of 20 m.

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

- 7.2.5 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**.
- 7.2.6 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 proposed application site boundary.
	Construction	Medium	There are 10 – 100 highly sensitive receptors between 20 m - 50 m of the proposed application site boundary.
	Trackout	Medium	There are 10 – 100 highly sensitive receptors within 50 m of the trackout route, up to 50 m from the site exit.
Human Health	Earthworks	Low	There are medium sensitive receptors between 20 m and 50 m of the proposed application site boundary and background pollutant concentrations are below 24 µg/m ³ .
	Construction	Low	There are medium sensitive receptors and background pollutant concentrations are below 24 µg/m ³ .
	Trackout	Low	There are medium sensitive receptors within 50 m of the trackout route, up to 50 m from the site exit and background pollutant concentrations are below 24 µg/m ³ .

Step 2C Risk of Impacts

- 7.2.7 The dust emission magnitude and sensitivity of the area were combined and the risk of impacts was determined using the criteria detailed in **Table B5** to **Table B8** in **Appendix B**.
- 7.2.8 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 Risk	Low Risk	Negligible
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 are proposed based on the risk classifications in **Table 7**. There are no specific mitigation measures for earthworks because the risk is low and there are no specific mitigation measures for trackout either because the risk is negligible. 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.

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 Site Suitability Assessment

- 8.1.1 As the development is for commercial use, the annual mean air quality objectives do not apply; however, the short-term objectives still apply¹.
- 8.1.2 The background concentrations and nearby monitoring results in **Table 4** indicate that background concentrations of NO₂ and PM₁₀ will be far below relevant short-term objectives for a commercial development. PM_{2.5} does not have short-term targets; however, the background concentrations are well below the annual mean target.
- 8.1.3 There are no monitoring locations representative of conditions at the development site.
- 8.1.4 As the development site is not located within the AQMA, it can be assumed that the TfGM 2016 model predicted that NO₂ concentrations at the development site would be below 35 µg/m³.

8.1.5 Given the data available, it is considered that the site is suitable for its proposed use without any mitigation.

8.2 Impact of Development

8.3 There are no parking spaces associated with the application site. The appointed transport consultant, Summer Consultancy, has confirmed that there will be no additional traffic movements associated with the application site⁶. Therefore, the air quality impact associated with vehicular emission impacts to existing sensitive receptors will be not significant.

9 Summary of Impacts and Conclusion

9.1 The assessment considered whether the application site could significantly change air quality during the construction phase. With the implementation of appropriate mitigation, the dust impacts from construction are not considered to be significant when assessed following IAQM guidance.

9.2 Concentrations of NO₂ and PM₁₀ are likely to be below their short-term objectives at the proposed development site which is therefore considered suitable for commercial use with regards to air quality. Concentrations of PM_{2.5} are expected to be below the annual mean target.

9.3 The development is not expected to have a significant impact on local air quality when considered following with IAQM Guidance⁷.

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

⁶ Email from Summer Consultancy on 13th October 2021

⁷ EPUK and IAQM (January 2017) Land Use Planning and Development Control: Planning for Air Quality (v1.2)

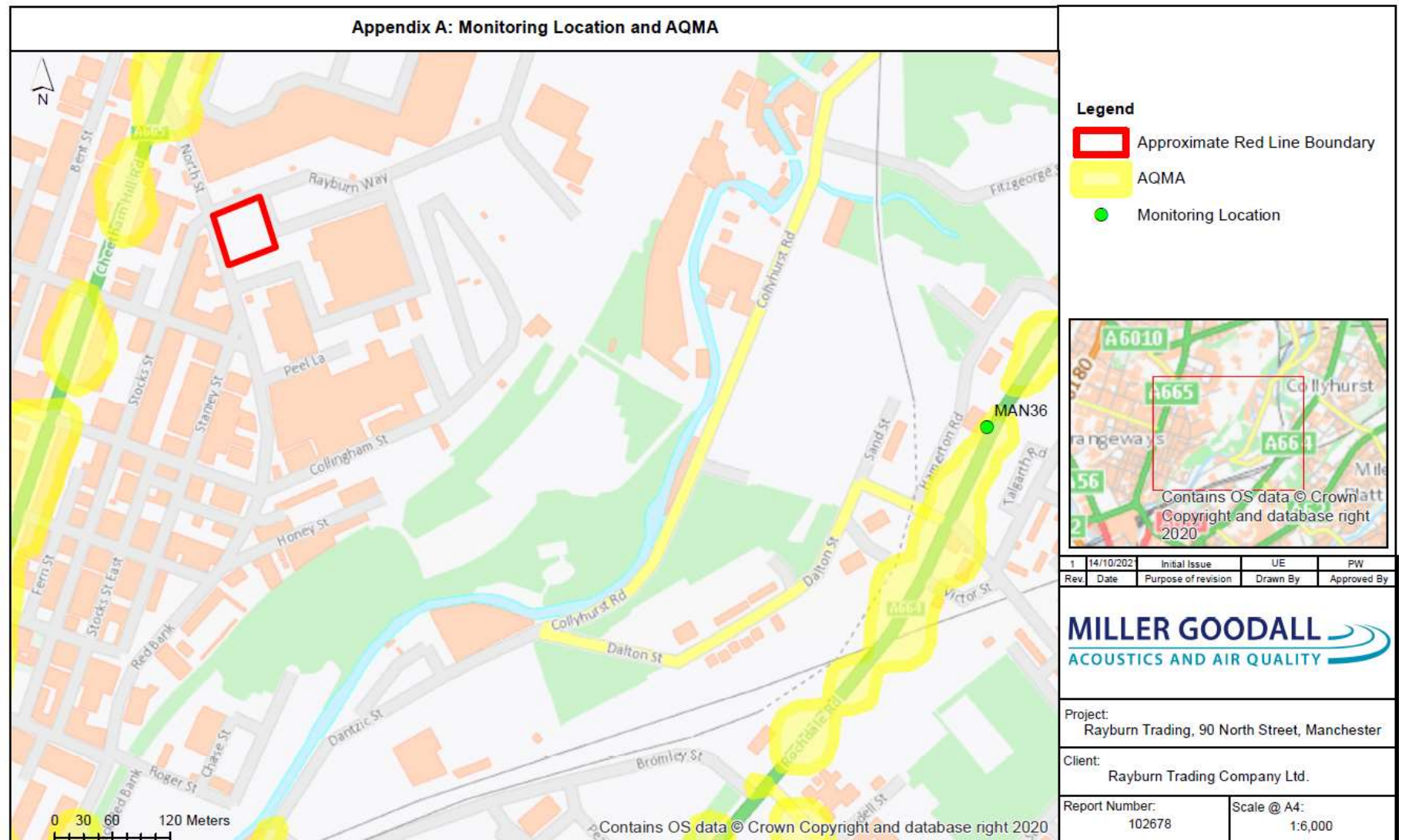
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APPENDICES

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Appendix B: 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 activities⁴. 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 C1** describes the potential dust emission class criteria for each outlined activity.

Table C1: 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 C2** is used to determine the sensitivity of the receptor in relation to dust soiling, health effects and ecological effects.

Table C2: 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 C3 and **Table C4** 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 C3: 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 C4: 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 C1** and sensitivity of the area and receptors from **Table C2**, **Table C3** and **Table C4** 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 C5** to **Table C8**.

Table C5: 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 C6: 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 C7: 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 C8: 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

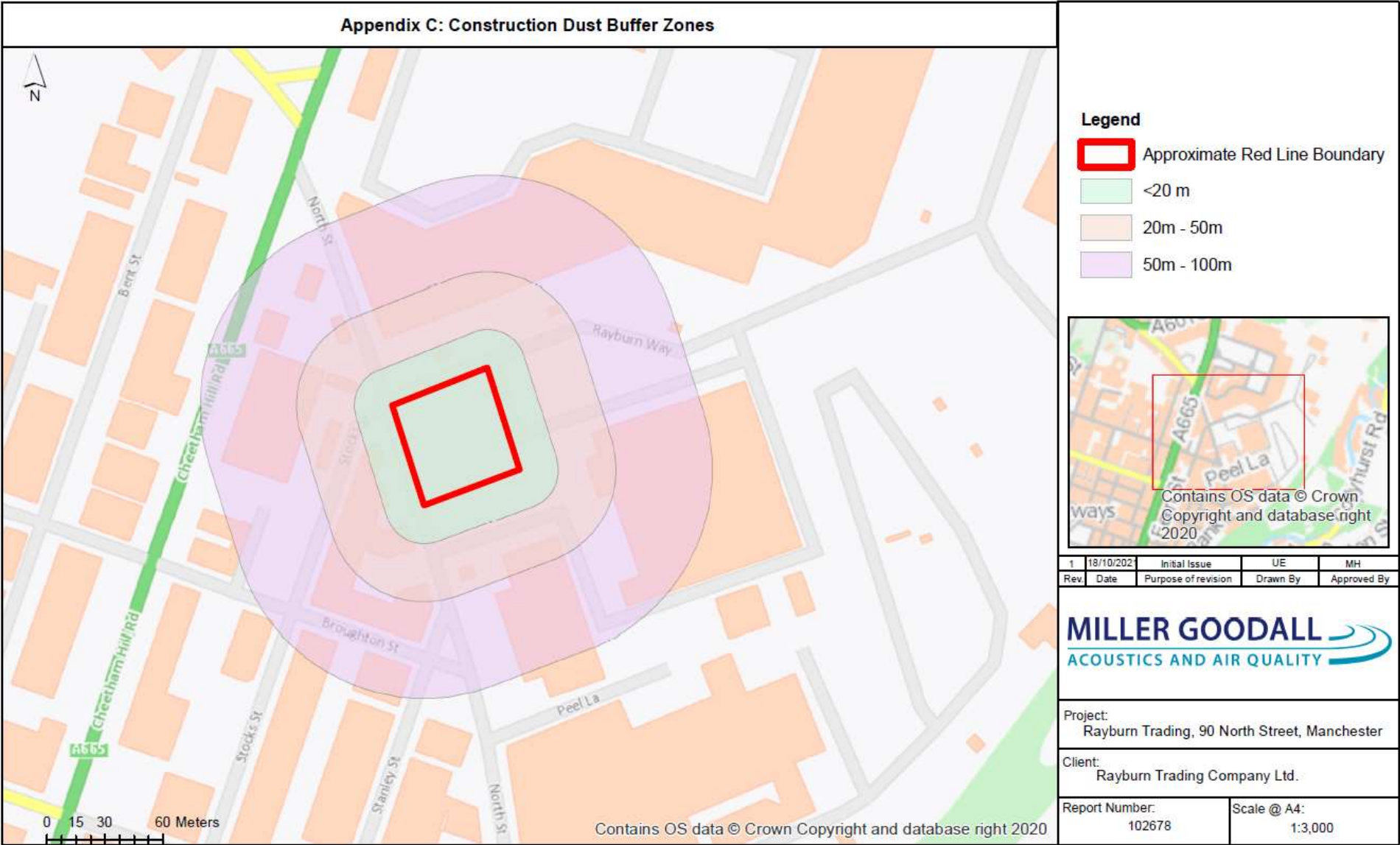
Step three of the IAQM guidance identifies appropriate site-specific mitigation. These measures are related to whether the site is a low, medium or high risk site.

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 D: Dust Assessment Mitigation

xx Highly Recommended

x Desirable

Measures relevant for 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

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.

