

Air Quality Assessment
Cheetham Hill Road, Manchester

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Prepared by	Alicia Dale			
Position	Air Quality Consultant			
Reviewed by	Emily Macey			
Position	Senior Air Quality Consultant			
Authorised by	Emily Pears-Ryding			
Position	Principal Air Quality Consultant			
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Comments	-			

Taylor Road, Manchester, M41 7JQ

info@red-env.co.uk | 0161 706 0075 | www.red-env.co.uk

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Executive Summary

Redmore Environmental Ltd was commissioned by Euro Garages Limited to undertake an Air Quality Assessment in support of a planning application for a retail development on land off Cheetham Hill Road, Manchester.

The proposed development has the potential to cause air quality impacts during the construction and operational phases. As such, an Air Quality Assessment was undertaken in order to determine baseline conditions at the site and assess potential air quality effects as a result of the scheme.

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

During the operational phase of the development there is the potential for air quality impacts as a result of traffic exhaust emissions associated with vehicles travelling to and from the site. These were assessed using standard screening criteria. Due to the low number of anticipated vehicle trips associated with the proposals, road traffic impacts were not predicted to be significant.

The assessment also considered potential impacts associated with benzene emissions from the proposed petrol filling station. As all pumps will be fitted with emission reduction equipment to limit releases during operation, exceedences of the relevant air quality standard as a result of the development are not anticipated. Impacts were therefore not predicted to be significant.

Based on the assessment results, air quality factors are not considered a constraint to planning consent for the proposals.

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Appendix 1 - Curricula Vitae

1.0 INTRODUCTION

1.1 Background

1.1.1 Redmore Environmental Ltd was commissioned by Euro Garages Limited to undertake an Air Quality Assessment in support of a planning application for a retail development on land off Cheetham Hill Road, Manchester.

1.1.2 The proposals have the potential to cause air quality impacts at sensitive locations during the construction and operational phases. As such, an Air Quality Assessment was undertaken in order to determine baseline conditions and consider potential effects as a result of the scheme.

1.2 Site Location and Context

1.2.1 The site is located on land off Cheetham Hill Road, Manchester, at approximate National Grid Reference (NGR): 384227, 401184. Reference should be made to Figure 1 for a map of the site and surrounding area.

1.2.2 The proposals comprise demolition of the existing petrol filling station (PFS) and subsequent construction of a new PFS, local convenience store and drive-through coffee shop with associated car parking and landscaping.

1.2.3 The development has the potential to cause impacts at sensitive locations during the construction and operational phases. These may include fugitive dust emissions associated with construction works and road traffic exhaust emissions from vehicles travelling to and from the site, as well as benzene (C₆H₆) emissions from the PFS, during the operational phase. An Air Quality Assessment was therefore undertaken in order to determine baseline conditions and consider potential air quality effects as a result of the proposals. This is detailed in the following report.

2.0 LEGISLATION AND POLICY

2.1 UK Legislation

2.1.1 The Air Quality Standards Regulations (2010) and subsequent amendments include Air Quality Limit Values (AQLVs) for the following pollutants.

- Nitrogen dioxide (NO₂);
- Sulphur dioxide;
- Lead;
- Particulate matter with an aerodynamic diameter of less than 10µm (PM₁₀);
- Particulate matter with an aerodynamic diameter of less than 2.5µm (PM_{2.5});
- C₆H₆; and,
- Carbon monoxide.

2.1.2 Air quality target values have also been provided for several additional pollutants. It should be noted that the AQLV for PM_{2.5} stated in the Air Quality Standards Regulations (2010) was amended in the Environment (Miscellaneous Amendments) (EU Exit) Regulations (2020).

2.1.3 The Air Quality Strategy (AQS) was produced by the Department for Environment, Food and Rural Affairs (DEFRA) and published in July 2007¹. The document contains standards, objectives and measures for improving ambient air quality, including a number of Air Quality Objectives (AQOs). These are maximum ambient pollutant concentrations that are not to be exceeded either without exception or with a permitted number of exceedances over a specified timescale. These are generally in line with the AQLVs, although the requirements for the determination of compliance vary.

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

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

Table 1 Air Quality Objectives/Limit Values

Pollutant	Air Quality Objective/Limit Value	
	Concentration (µg/m ³)	Averaging Period
NO ₂	40	Annual mean
	200	1-hour mean, not to be exceeded on more than 18 occasions per annum
PM ₁₀	40	Annual mean
	50	24-hour mean, not to be exceeded on more than 35 occasions per annum
PM _{2.5}	20	Annual mean
C ₆ H ₆	5	Annual mean

2.1.5 The Environment Act (2021) was published on 9th November 2021 and makes provision for the setting of lower PM_{2.5} targets. The final criteria will be included in legislation to be put before parliament by 31st October 2022. Prior to this time the AQLV outlined in Table 1 remains the adopted air quality standard within the UK.

2.1.6 Table 2 summarises the advice provided in DEFRA guidance² on where the AQOs for pollutants considered within this report apply.

Table 2 Examples of Where the Air Quality Objectives Apply

Averaging Period	Objective Should Apply At	Objective Should Not Apply At
Annual mean	All locations where members of the public might be regularly exposed Building façades of residential properties, schools, hospitals, care homes etc.	Building façades of offices or other places of work where members of the public do not have regular access Hotels, unless people live there as their permanent residence Gardens of residential properties Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term

² Local Air Quality Management Technical Guidance (TG22), DEFRA, 2022.

Averaging Period	Objective Should Apply At	Objective Should Not Apply At
24-hour mean	All locations where the annual mean objective would apply, together with hotels Gardens of residential properties	Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term
1-hour mean	All locations where the annual mean and 24 and 8-hour mean objectives apply. Kerbside sites (for example, pavements of busy shopping streets) Those parts of car parks, bus stations and railway stations etc which are not fully enclosed, where members of the public might reasonably be expected to spend one hour or more Any outdoor locations where members of the public might reasonably be expected to spend one hour or longer	Kerbside sites where the public would not be expected to have regular access

2.2 Local Air Quality Management

2.2.1 Local Authorities (LAs) are required to periodically review and assess air quality within their area of jurisdiction under the system of Local Air Quality Management (LAQM). This review and assessment of air quality involves comparing present and likely future pollutant concentrations against the AQOs. If it is predicted that levels at locations of relevant exposure, as summarised in Table 2, are likely to be exceeded, the LA is required to declare an Air Quality Management Area (AQMA). For each AQMA the LA is required to produce an Air Quality Action Plan (AQAP), the objective of which is to reduce pollutant concentrations in pursuit of the AQOs.

2.3 Dust

2.3.1 The main requirements with respect to dust control from industrial or trade premises not regulated under the Environmental Permitting (England and Wales) Regulations (2016) and subsequent amendments, such as construction sites, is that provided in Section 79 of Part III of the Environmental Protection Act (1990). The Act defines nuisance as:

"any dust, steam, smell or other effluvia arising on industrial, trade or business premises and being prejudicial to health or a nuisance."

2.3.2 Enforcement of the Act, in regard to nuisance, is currently under the jurisdiction of the local Environmental Health Department, whose officers are deemed to provide an independent evaluation of nuisance. If the LA is satisfied that a statutory nuisance exists, or is likely to occur or happen again, it must serve an Abatement Notice under Part III of the Environmental Protection Act (1990). The only defence is to show that the process to which the nuisance has been attributed and its operation are being controlled according to best practicable means.

2.4 National Planning Policy

2.4.1 The revised National Planning Policy Framework³ (NPPF) was published in July 2021 and sets out the Government's planning policies for England and how these are expected to be applied.

2.4.2 The purpose of the planning system is to contribute to the achievement of sustainable development. In order to ensure this, the NPPF recognises three overarching objectives including the following of relevance to air quality:

"c) An environmental objective - to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy."

2.4.3 Chapter 15 of the NPPF details objectives in relation to conserving and enhancing the natural environment. It states that:

"Planning policies and decisions should contribute to and enhance the natural and local environment by:

[...]

e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of

³ NPPF, Ministry of Housing, Communities and Local Government, 2021.

soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality [...]"

2.4.4 The NPPF specifically recognises air quality as part of delivering sustainable development and states that:

"Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan."

2.4.5 The implications of the NPPF have been considered throughout this assessment.

2.5 National Planning Practice Guidance

2.5.1 The National Planning Practice Guidance⁴ (NPPG) web-based resource was launched by the Department for Communities and Local Government on 6th March 2014 and updated on 1st November 2019 to support the NPPF and make it more accessible. The air quality pages are summarised under the following headings:

1. What air quality considerations does planning need to address?
2. What is the role of plan-making with regard to air quality?
3. Are air quality concerns relevant to neighbourhood planning?
4. What information is available about air quality?
5. When could air quality be relevant to the planning development management process?

⁴ <https://www.gov.uk/guidance/air-quality--3>.

6. What specific issues may need to be considered when assessing air quality impacts?
7. How detailed does an air quality assessment need to be?
8. How can an impact on air quality be mitigated?

2.5.2 These were reviewed and the relevant guidance considered as necessary throughout the undertaking of this assessment.

2.6 Local Planning Policy

2.6.1 The Manchester Local Development Framework consists of a series of planning documents of which the Core Strategy⁵ is central. This was adopted by Manchester City Council (MCC) on 11th July 2012 and provides policies which guide the determination of planning applications within the city.

2.6.2 Review of the Core Strategy indicated the following policies of relevance to the assessment:

"Policy EN 16

Air Quality

The Council will seek to improve the air quality within Manchester, and particularly within Air Quality Management Areas, located along Manchester's principal traffic routes and at Manchester Airport. Developers will be expected to take measures to minimise and mitigate the local effect 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 effects on air quality, alongside other plan objectives. This includes cumulative effects, particularly in Air Quality Management Areas."

"Policy DM 1

⁵ Core Strategy, MCC, 2012.

Development Management

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

[...]

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

- 2.6.3 The above policies were taken into consideration throughout the undertaking of the assessment.
-

3.0 BASELINE

3.1 Introduction

- 3.1.1 Existing air quality conditions in the vicinity of the proposed development site were identified in order to provide a baseline for assessment. These are detailed in the following Sections.

3.2 Local Air Quality Management

- 3.2.1 As required by the Environment Act (1995), MCC has undertaken Review and Assessment of air quality within their area of jurisdiction. This process has indicated that annual mean concentrations of NO₂ are above the AQO within the city. As such, a number of roads within Manchester have been included within the Greater Manchester Combined Authority (GMCA) AQMA. This is described as follows:

"This is the part of the Greater Manchester Combined Authority AQMA located within the Manchester City Council area."

- 3.2.2 The site is located 120m south-east from the AQMA. As such, there is the potential for vehicles travelling to and from the site to increase pollution levels in the sensitive area. This has been considered throughout the assessment.
- 3.2.3 MCC has concluded that concentrations of all other pollutants considered within the AQS are currently below the relevant AQOs. As such, no further AQMA's have been designated.

3.3 Air Quality Monitoring

- 3.3.1 Monitoring of pollutant concentrations is undertaken by MCC and Salford City Council (SCC) throughout their areas of jurisdiction. Recent results recorded in the vicinity of the development are shown in Table 3. Exceedences of the relevant AQO are shown in **bold**.
-

Table 3 Monitoring Results

Monitoring Site		Monitored NO ₂ Concentration (µg/m ³)	
		2020	2021
SA86NO	Bury Old Road	-(a)	44.0
MA100BNO	Middleton Road	31.2	33.6

Note: (a) Data not available

3.3.2 As shown in Table 3, annual mean NO₂ concentrations were above the AQO of 40µg/m³ at SA86NO during 2021. As the monitor is located at a roadside position adjacent to an AQMA, elevated levels would be expected. Concentrations were below the relevant AQO at MA100BNO in recent years. Reference should be made to Figure 2 for a map of the survey sites.

3.3.3 MCC and SCC do not undertake monitoring of PM₁₀ or PM_{2.5} concentrations within the vicinity of the site.

3.4 Background Pollutant Concentrations

3.4.1 Predictions of background pollutant concentrations on a 1km by 1km grid basis have been produced by DEFRA for the entire of the UK to assist LAs in their Review and Assessment of air quality. The proposed development site is located in grid square NGR: 384500, 401500. Data for this location was downloaded from the DEFRA website⁶ for the purpose of the assessment and is summarised in Table 4.

Table 4 Background Pollutant Concentration Predictions

Pollutant	Predicted 2022 Background Pollutant Concentration (µg/m ³)
NO ₂	16.24
PM ₁₀	12.40
PM _{2.5}	8.37

3.4.2 As shown in Table 4, predicted background NO₂, PM₁₀ and PM_{2.5} concentrations are below the relevant AQOs and AQLV at the development site.

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

4.0 METHODOLOGY

4.1 Introduction

4.1.1 The proposed development has the potential to cause air quality impacts during the construction and operational phases. These have been assessed in accordance with the following methodology, which was agreed with Graeme Souter, Environmental Protection Officer at MCC, on 25th July 2022.

4.2 Construction Phase Assessment

4.2.1 There is the potential for fugitive dust emissions to occur as a result of construction phase activities. These have been assessed in accordance with the methodology outlined within the Institute of Air Quality Management (IAQM) document 'Guidance on the Assessment of Dust from Demolition and Construction V1.1'⁷.

4.2.2 Activities on the proposed construction site have been divided into four types to reflect their different potential impacts. These are:

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

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

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

4.2.4 The assessment steps are detailed below.

⁷ Guidance on the Assessment of Dust from Demolition and Construction V1.1, IAQM, 2016.

Step 1

- 4.2.5 Step 1 screens the requirement for a more detailed assessment. Should human receptors be identified within 350m from the boundary or 50m from the construction vehicle route up to 500m from the site entrance, then the assessment proceeds to Step 2. Additionally, should ecological receptors be identified within 50m of the site or the construction vehicle route up to 500m from the site entrance, then the assessment also proceeds to Step 2.
- 4.2.6 Should sensitive receptors not be present within the relevant distances then **negligible** impacts would be expected and further assessment is not necessary.

Step 2

- 4.2.7 Step 2 assesses the risk of potential dust impacts. A site is allocated a risk category based on two factors:
- The scale and nature of the works, which determines the magnitude of dust arising as: small, medium or large (Step 2A); and,
 - The sensitivity of the area to dust impacts, which can be defined as low, medium or high sensitivity (Step 2B).
- 4.2.8 The two factors are combined in Step 2C to determine the risk of dust impacts without mitigation applied.
- 4.2.9 Step 2A defines the potential magnitude of dust emission through the construction phase. The relevant criteria are summarised in Table 5.

Table 5 Construction Dust - Magnitude of Emission

Magnitude	Activity	Criteria
Large	Demolition	• Total volume of building to be demolished greater than 50,000m³ • Potentially dusty material (e.g. concrete) • On-site crushing and screening • Demolition activities more than 20m above ground level

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

Magnitude	Activity	Criteria
	Earthworks	- Total site area less than 2,500m² - Soil type with large grain size (e.g. sand) - Less than 5 heavy earth moving vehicles active at any one time - Formation of bunds less than 4m in height - Total material moved less than 20,000 tonnes - Earthworks during wetter months
	Construction	- Total building volume less than 25,000m³ - Construction material with low potential for dust release (e.g. metal cladding or timber)
	Trackout	- Less than 10 HDV trips per day - Surface material with low potential for dust release - Unpaved road length less than 50m

4.2.10 Step 2B defines the sensitivity of the area around the development to potential dust impacts. The influencing factors are shown in Table 6.

Table 6 Construction Dust - Examples of Factors Defining Sensitivity of an Area

Receptor Sensitivity	Examples	
	Human Receptors	Ecological Receptors
High	- Users expect high levels of amenity - High aesthetic or value property - People expected to be present continuously for extended periods of time - Locations where members of the public are exposed over a time period relevant to the AQO for PM₁₀. e.g. residential properties, hospitals, schools and residential care homes	Internationally or nationally designated site e.g. Special Area of Conservation
Medium	- Users would expect to enjoy a reasonable level of amenity - Aesthetics or value of their property could be diminished by soiling - People or property wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land e.g. parks and places of work	Nationally designated site e.g. Sites of Special Scientific Interest

Receptor Sensitivity	Examples	
	Human Receptors	Ecological Receptors
Low	• Enjoyment of amenity would not reasonably be expected • Property would not be expected to be diminished in appearance • Transient exposure, where people would only be expected to be present for limited periods. e.g. public footpaths, playing fields, shopping streets, farmland, short term car parks and roads	• Locally designated site e.g. Local Nature Reserve

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

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

4.2.12 These factors were considered in the undertaking of this assessment.

4.2.13 The criteria for determining the sensitivity of the area to dust soiling effects on people and property is summarised in Table 7.

Table 7 Construction Dust - Sensitivity of the Area to Dust Soiling Effects on People and Property

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

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

4.2.14 Table 8 outlines the criteria for determining the sensitivity of the area to human health impacts.

Table 8 Construction Dust - Sensitivity of the Area to Human Health Impacts

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

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

4.2.15 Table 9 outlines the criteria for determining the sensitivity of the area to ecological impacts.

Table 9 Construction Dust - Sensitivity of the Area to Ecological Impacts

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

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

4.2.17 Table 10 outlines the risk category from demolition activities.

Table 10 Construction Dust - Dust Risk Category from Demolition Activities

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

4.2.18 Table 11 outlines the risk category from earthworks and construction activities.

Table 11 Construction Dust - Dust Risk Category from Earthworks and Construction Activities

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

4.2.19 Table 12 outlines the risk category from trackout activities.

Table 12 Construction Dust - Dust Risk Category from Trackout Activities

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

Step 3

4.2.20 Step 3 requires the identification of site specific mitigation measures within the IAQM guidance⁸ to reduce potential dust impacts based upon the relevant risk categories identified in Step 2. For sites with **negligible** risk, mitigation measures beyond those required by legislation are not required. However, additional controls may be applied as part of good practice.

Step 4

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

4.2.22 The determination of significance relies on professional judgement and reasoning should be provided as far as practicable. The IAQM guidance suggests the provision of details of the assessor's qualifications and experience. These are provided in Appendix 1.

4.3 Operational Phase Assessment

Road Traffic Exhaust Emissions

4.3.1 The proposal has the potential to impact on existing air quality as a result of road traffic exhaust emissions associated with vehicles travelling to and from the site during the operational phase. A screening assessment was therefore undertaken with reference to the criteria contained within the IAQM 'Land-Use Planning & Development Control: Planning for Air Quality'⁹ guidance to determine the potential for trips generated by the scheme to affect local air quality.

4.3.2 The following criteria are provided to help establish when an assessment of potential impacts on the local area is likely to be considered necessary:

⁸ Guidance on the Assessment of Dust from Demolition and Construction V1.1, IAQM, 2016.

⁹ Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.

- A change of Light Duty Vehicle (LDV) flows of more than 100 Annual Average Daily Traffic (AADT) within or adjacent to an AQMA or more than 500 AADT elsewhere;
- A change of HDV flows of more than 25 AADT within or adjacent to an AQMA or more than 100 AADT elsewhere;
- Realignment of roads where the change is 5m or more and the road is within an AQMA; or,
- Introduction of a new junction or removal of an existing junction near to relevant receptors.

4.3.3 Should these criteria not be met, then the IAQM guidance¹⁰ considers air quality impacts associated with a scheme to be **not significant** and no further assessment is required.

4.3.4 Should screening of the relevant data indicate that any of the above criteria are met, then potential impacts at sensitive receptor locations can be assessed by calculating the change in pollutant concentrations as a result of the proposed development. The significance of predicted impacts can then be determined in accordance with the methodology outlined in the IAQM guidance¹¹.

Petrol Filling Station Emissions

4.3.5 The proposed scheme includes construction of a PFS to the north-east of the site. As such, there is the potential for C₆H₆ emissions from the PFS to affect existing air quality conditions at sensitive receptors once the facility is operational.

4.3.6 DEFRA guidance¹² outlines an approach to assessing the potential for exceedences of the C₆H₆ AQO as a result of emissions from PFSs. Sites with an annual throughput of more than 2,000m³ of petrol (two million litres per annum) near a road with a daily flow greater than 30,000 vehicles may result in elevated C₆H₆ concentrations. The guidance also states that PFS with Stage 2 recovery systems can be ignored. Stage 2 recovery systems must be fitted to all PFSs with a petrol throughput of over 3,000m³ per year and to all new PFSs with a petrol throughput of over 500m³ per year. If the PFS meets the relevant criteria and is not fitted with a Stage 2 recovery system, then residential properties within 10m of the

¹⁰ Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.

¹¹ Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.

¹² Local Air Quality Management Technical Guidance (TG22), DEFRA, 2022.

pumps may be at risk of elevated C₆H₆ concentrations. Only locations which meet these criteria require further assessment.

5.0 **ASSESSMENT**

5.1 **Introduction**

5.1.1 There is the potential for air quality impacts as a result of the construction and operation of the proposed development. These are assessed in the following Sections.

5.2 **Construction Phase Assessment**

Step 1

5.2.1 The undertaking of activities such as demolition, excavation, ground works, cutting, construction, concrete batching and storage of materials has the potential to result in fugitive dust emissions throughout the construction phase. Vehicle movements on the local road network also have the potential to result in the re-suspension of dust from highway surfaces.

5.2.2 The potential for impacts at sensitive locations depends significantly on local meteorology during the undertaking of dust generating activities, with the most significant effects likely to occur during dry and windy conditions.

5.2.3 Receptors sensitive to potential dust impacts during demolition, earthworks and construction were identified from a desk-top study of the area up to 350m from the development boundary. These are summarised in Table 13.

Table 13 Demolition, Earthworks and Construction Dust Sensitive Receptors

Distance from Site Boundary (m)	Approximate Number of Human Receptors	Approximate Number of Ecological Receptors
Up to 20	10 - 100	0
Up to 50	10 - 100	0
Up to 100	More than 100	-
Up to 350	More than 100	-

- 5.2.4 Receptors sensitive to potential dust impacts from trackout were identified from a desk-top study of the area up to 50m from the road network within 500m of the site access. These are summarised in Table 14.

Table 14 Trackout Dust Sensitive Receptors

Distance from Site Access Route (m)	Approximate Number of Human Receptors	Approximate Number of Ecological Receptors
Up to 20	More than 100	0
Up to 50	More than 100	0

- 5.2.5 There are no ecological receptors within 50m of the development boundary or the access route within 500m of the site entrance. As such, ecological impacts have not been assessed further within this report.
- 5.2.6 A number of additional factors have been considered when determining the sensitivity of the surrounding area. These are summarised in Table 15.

Table 15 Additional Area Sensitivity Factors to Potential Dust Impacts

Guidance	Comment
Whether there is any history of dust generating activities in the area	The baseline review did not indicate any dust generating activities in the local area
The likelihood of concurrent dust generating activity on nearby sites	A review of the planning portal did not indicate any additional development proposals likely to result in concurrent dust generation in the vicinity of the site
Pre-existing screening between the source and the receptors	Trees and shrubs are located along the northern site boundary. These may act as a barrier between emission sources and receptors should they be retained during the construction phase
Conclusions drawn from analysing local meteorological data which accurately represent the area: and if relevant the season during which works will take place	As shown in Figure 3, the predominant wind bearing at the site is from the south-west. As such, receptors to the north-east are most likely to be affected by dust releases
Conclusions drawn from local topography	There are no significant topographical constraints to dust dispersion

Guidance	Comment
Duration of the potential impact, as a receptor may become more sensitive over time	Currently it is unclear as to the duration of the construction phase. However, it is possible that it will extend over one year. The sensitivity of nearby receptors is unlikely to change during this time
Any known specific receptor sensitivities which go beyond the classifications given in the document	No specific receptor sensitivities identified during the baseline assessment

5.2.7 Based on the criteria shown in Table 6, the sensitivity of the receiving environment to potential dust impacts was determined as **high**. This was because identified receptors included residential properties.

5.2.8 The sensitivity of the receiving environment to specific potential dust impacts, based on the criteria shown in Section 4.2, is shown in Table 16.

Table 16 Sensitivity of the Surrounding Area to Potential Dust Impacts

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

5.2.9 The potential risk of dust impacts at the identified receptors is considered in the following Sections.

Step 2

Demolition

5.2.10 Demolition will involve clearance of the existing PFS. It is estimated that the total building volume to be demolished is less than 20,000m³. In accordance with the criteria outlined in Table 5, the magnitude of potential dust emissions from demolition is therefore **small**.

5.2.11 Table 16 indicates the sensitivity of the area to dust soiling effects on people and property is **high**. In accordance with the criteria outlined in Table 10, the development is considered to be a **medium** risk site for dust soiling as a result of demolition activities.

5.2.12 Table 16 indicates the sensitivity of the area to human health impacts is **low**. In accordance with the criteria outlined in Table 11, the development is considered to be a **negligible** risk site for human health impacts as a result of demolition activities.

Earthworks

5.2.13 Earthworks may involve excavating material, haulage, tipping and stockpiling, as well as site levelling and landscaping. The proposed development area covers an area of less than 2,500m². In accordance with the criteria outlined in Table 5, the magnitude of potential dust emissions from earthworks is therefore **small**.

5.2.14 Table 16 indicates the sensitivity of the area to dust soiling effects on people and property is **high**. In accordance with the criteria outlined in Table 11, the development is considered to be a **low** risk site for dust soiling as a result of earthworks.

5.2.15 Table 16 indicates the sensitivity of the area to human health impacts is **low**. In accordance with the criteria outlined in Table 11, the development is considered to be a **negligible** risk site for human health impacts as a result of earthworks.

Construction

5.2.16 Due to the size of the proposed structures the total building volume is likely to be less than 25,000m³. In accordance with the criteria outlined in Table 5, the magnitude of potential dust emissions from construction is therefore **small**.

5.2.17 Table 16 indicates the sensitivity of the area to dust soiling effects on people and property is **high**. In accordance with the criteria outlined in Table 11, the development is considered to be a **low** risk site for dust soiling as a result of construction activities.

5.2.18 Table 16 indicates the sensitivity of the area to human health impacts is **low**. In accordance with the criteria outlined in Table 11, the development is considered to be a **negligible** risk site for human health impacts as a result of construction activities.

Trackout

- 5.2.19 Based on the site area and existing hard standing provision, it is anticipated that the unpaved road length will be less than 50m. In accordance with the criteria outlined in Table 5, the magnitude of potential dust emissions from trackout is therefore **small**.
- 5.2.20 Table 16 indicates the sensitivity of the area to dust soiling effects to people and property is **high**. In accordance with the criteria outlined in Table 12, the development is considered to be a **low** risk site for dust soiling as a result of trackout activities.
- 5.2.21 Table 16 indicates the sensitivity of the area to human health impacts is **medium**. In accordance with the criteria outlined in Table 12, the development is considered to be a **negligible** risk site for human health impacts as a result of trackout activities.

Summary of the Risk of Dust Effects

- 5.2.22 A summary of the risk from each dust generating activity is provided in Table 17.

Table 17 Summary of Potential Unmitigated Dust Risks During Construction

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

- 5.2.23 As indicated in Table 17, the potential risk of dust soiling is **medium** from demolition and **low** from earthworks, construction and trackout. The potential risk of human health impacts is **negligible** from demolition, earthworks, construction and trackout.
- 5.2.24 It should be noted that the potential for impacts depends significantly on the distance between the dust generating activity and receptor location. Risk was predicted based on a worst-case scenario of works being undertaken at the site boundary closest to each sensitive area. Therefore, actual risk is likely to be lower than that predicted during the majority of the construction phase.

Step 3

5.2.25 The IAQM guidance¹³ provides potential mitigation measures to reduce impacts as a result of fugitive dust emissions during the construction phase. These have been adapted for the development site as summarised in Table 18. These may be reviewed prior to the commencement of construction works and incorporated into a Construction Environmental Management Plan or similar if required by the LA.

Table 18 Fugitive Dust Emission Mitigation Measures

Issue	Control Measure
Communications	• Develop and implement a stakeholder communications plan that includes community engagement before work commences on site • Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager • Display the head or regional office contact information • Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the LA
Site management	• Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken • Make the complaints log available to the LA upon request • Record any exceptional incidents that cause dust and/or air emissions, either on- or off- site, and the action taken to resolve the situation in the log book
Monitoring	• Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the LA upon request • Increase the frequency of site inspections when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions

Issue	Control Measure
Site preparation	• Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible • Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site • Fully enclose specific operations where there is a high potential for dust production and they are active for an extensive period • Avoid site runoff of water or mud • Keep site fencing, barriers and scaffolding clean using wet methods • Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used • Cover, seed or fence stockpiles to prevent wind whipping
Operating vehicle/machinery and sustainable travel	• Ensure all vehicles switch off engines when stationary - no idling vehicles • Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable
Operations	• Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques • Ensure an adequate water supply on the site for effective dust suppression, using non-potable water where possible and appropriate • Use enclosed chutes and conveyors and covered skips • Minimise drop heights and use fine water sprays wherever appropriate • Ensure equipment is available to clean any dry spillages, and clean up spillages as soon as reasonably practicable using wet cleaning methods
Waste management	• Avoid bonfires and burning of waste materials
Demolition	• Ensure effective water suppression is used during demolition operations • Avoid explosive blasting, using appropriate manual or mechanical alternatives • Bag and remove any biological debris or damp down such material before demolition
Construction	• Avoid scabbling (roughening of concrete surfaces), if possible • Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out
Trackout	• Use water-assisted dust sweeper on access and local roads, if required • Avoid dry sweeping of large areas • Implement a wheel washing system, if required

Step 4

5.2.26 Assuming the relevant mitigation measures outlined in Table 18 are implemented, the residual impact from all dust generating activities is predicted to be **not significant**, in accordance with the IAQM guidance¹⁴.

5.3 Operational Phase Assessment

Road Traffic Exhaust Emissions

5.3.1 Any vehicle movements associated with the development will generate exhaust emissions on the local and regional road networks. Information provided by Dynamic Transport Limited, the Transport Consultants for the project, indicated the development is predicted to generate 180 daily vehicle trips. The anticipated distribution of these trips is as follows:

- 90 trips north of the site access, along Cheetham Hill Road; and,
- 90 trips south of the site access, along Cheetham Hill Road.

5.3.2 In addition to the above, there will be a maximum of two HDV deliveries each day.

5.3.3 Based on the above information, the proposal is not anticipated to result in an increase in LDV flows of more than 100 AADT on any individual road link within or adjacent to an AQMA or 500 AADT elsewhere. Additionally, the proposals do not include significant highway realignment or the introduction of a junction and there will not be a requirement for than 100 HDV deliveries per day. As such, potential air quality impacts associated with the operational phase road vehicle exhaust emissions are predicted to be **not significant**, in accordance with the IAQM¹⁵ criteria shown in Section 4.3.

Petrol Filling Station Emissions

5.3.4 There is the potential for C₆H₆ emissions from the PFS to affect existing air quality conditions at sensitive receptors once the facility is operational.

¹⁴ Guidance on the Assessment of Dust from Demolition and Construction V1.1, IAQM, 2016.

¹⁵ Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.

5.3.5 Information provided by the Applicant¹⁶ indicated that all pumps at the PFS will be fitted with Stage 2 recovery systems to limit releases during operation. As outlined in DEFRA guidance¹⁷, any PFSs fitted with this system can be screened from further assessment if there is no risk of AQO exceedance. As such, impacts are predicted to be **not significant** and further assessment is not required.

Mitigation

5.3.6 As air quality impacts associated with the proposals were predicted to be **not significant**, mitigation to control effects is not considered necessary. However, a number of measures have been included within the scheme in accordance with the requirements of the IAQM document 'Land-Use Planning & Development Control: Planning for Air Quality'¹⁸ to encourage the use of sustainable transport modes, manage vehicle flow and reduce pollution around the site. Table 19 describes the good practice principles detailed in the IAQM guidance along with how each has been addressed with regards to the proposals.

Table 19 Good Practice Design Principles for Operational Phase Air Quality Impacts

Phase	Principle	Action
Design Phase	New developments should not contravene the Council's AQAP ¹⁹ , or render any of the measures unworkable	It is confirmed that the proposals will not contravene MCC's AQAP, or render any of the measures unworkable
	Wherever possible, new developments should not create a new "street canyon", or a building configuration that inhibits effective pollution dispersion	The proposals will not lead to the generation of a street canyon
	Delivering sustainable development should be the key theme of any application	The proposals have been designed to encourage sustainable behaviours, such as active and public transport due to its proximity to bus services

¹⁶ Email correspondence with Applicant, 2022.

¹⁷ Local Air Quality Management Technical Guidance (TG22), DEFRA, 2022.

¹⁸ Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.

¹⁹ Greater Manchester AQAP 2016-2021, GMCA, 2016.

Phase	Principle	Action
	New development should be designed to minimise public exposure to pollution sources, e.g. by locating habitable rooms away from busy roads, or directing combustion generated pollutants through or chimney stacks	The development is not considered a location of relevant exposure for long term AQOs in accordance with the criteria provided in the DEFRA guidance ²⁰
Operational Phase	The provision of at least 1 Electric Vehicle (EV) "rapid charge" point per 10 residential dwellings and/or 1,000m ² of commercial floor space. Where on-site parking is provided for residential dwellings, EV charging points for each parking space should be made	A minimum provision of four 50Kw EV charging points will be required on site, equivalent to 25% of the number of car parking spaces included in the proposals
	Where development generates significant additional traffic, provision of a detailed Travel Plan (with provision to measure its implementation and effect) which sets out measures to encourage sustainable means of transport (public, cycling and walking) via subsidised or free-ticketing, improved links to bus stops, improved infrastructure and layouts to improve accessibility and safety	A Travel Plan can be secured via condition if required by MCC
	All gas-fired boilers to meet a minimum standard of <40mgNO_x/kWh. All gas-fired CHP plant to meet a minimum emissions standard of: - Spark ignition engine: 250mgNO_x/Nm³; - Compression ignition engine: 400mgNO_x/Nm³; - Gas turbine: 50mgNO_x/Nm³. A presumption should be to use natural gas-fired installations. Where biomass is proposed within an urban area it is to meet minimum emissions standards of: - Solid biomass boiler: 275mgNO_x/Nm³ and 25mgPM/Nm³	Any boilers included in the development will be provisioned in accordance with the relevant requirements

5.3.7 It is considered the above methods would further reduce potential impacts associated with the proposals. Specific mitigation suited to the proposals may be stipulated as a planning condition if deemed necessary by the LA.

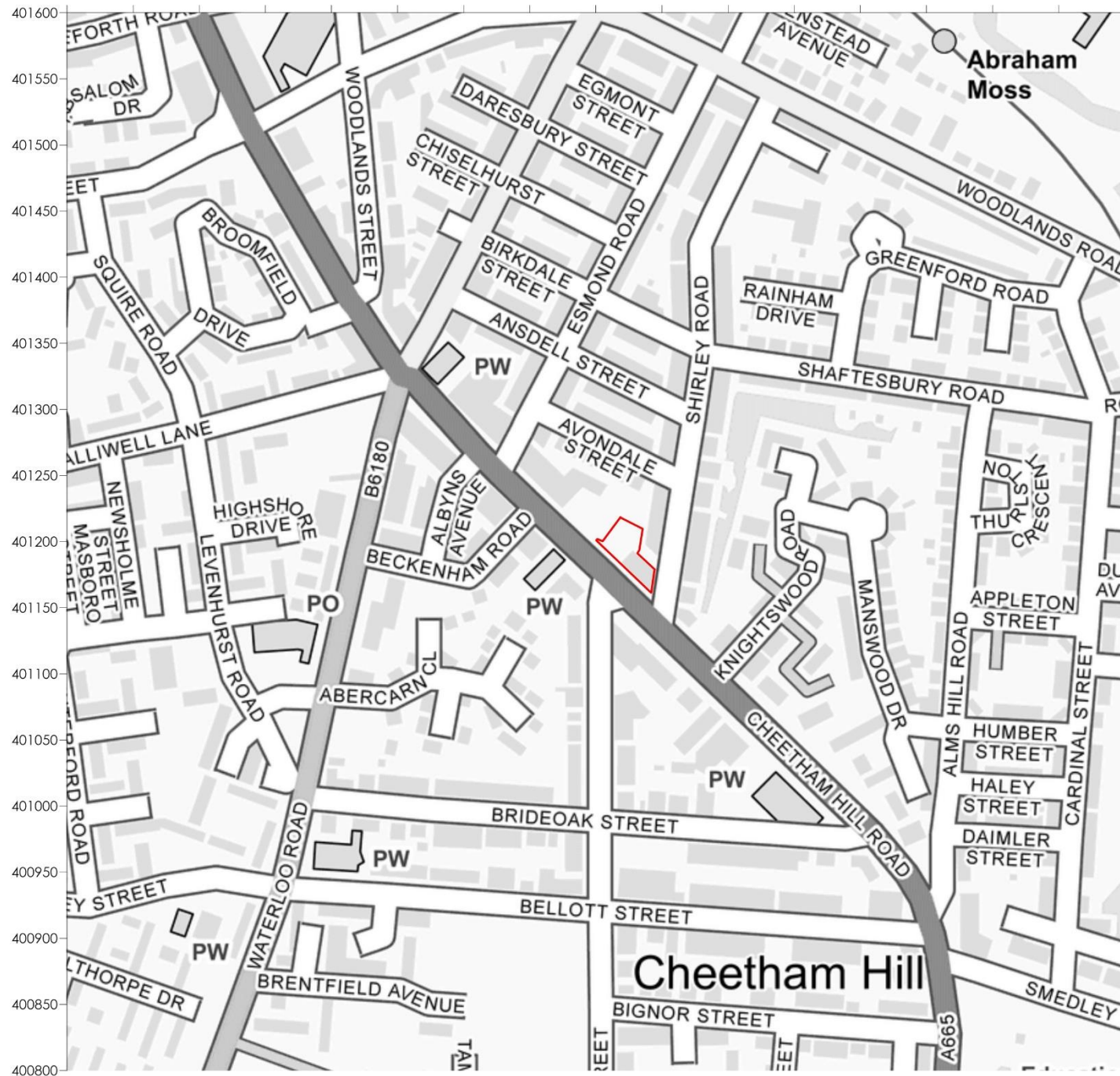
6.0 CONCLUSION

- 6.1.1 Redmore Environmental Ltd was commissioned by Euro Garages Limited to undertake an Air Quality Assessment in support of a planning application for a retail development on land off Cheetham Hill Road, Manchester.
- 6.1.2 The proposed development has the potential to cause air quality impacts during the construction and operational phases. As such, an Air Quality Assessment was undertaken in order to determine baseline conditions at the site and assess potential air quality effects as a result of the scheme.
- 6.1.3 During the construction phase of the development there is the potential for air quality impacts as a result of fugitive dust emissions from the site. These were assessed in accordance with the IAQM methodology. Assuming good practice dust control measures are implemented, the residual significance of potential air quality impacts from dust generated by demolition, earthworks, construction and trackout activities was predicted to be **not significant**.
- 6.1.4 Potential impacts during the operational phase of the proposed development may occur due to road traffic exhaust emissions associated with vehicles travelling to and from the site. These were assessed using the criteria provided within the IAQM guidance. Due to the low number of anticipated vehicle trips associated with the proposals, impacts were predicted to be **not significant**.
- 6.1.5 The assessment considered potential impacts associated with C₆H₆ emissions from the proposed PFS. Information provided by the Applicant indicated that all pumps will be fitted with Stage 2 recovery systems to limit releases during operation. In accordance with DEFRA guidance, an exceedance of the relevant AQO as a result of the proposed PFS is therefore not anticipated. As such, impacts were predicted to be **not significant**.
- 6.1.6 Based on the assessment results, air quality factors are not considered a constraint to planning consent for the development.
-

7.0 **ABBREVIATIONS**

AADT	Annual Average Daily Traffic
AQAP	Air Quality Action Plan
AQLV	Air Quality Limit Value
AQMA	Air Quality Management Area
AQO	Air Quality Objective
AQS	Air Quality Strategy
C ₆ H ₆	Benzene
DEFRA	Department for Environment, Food and Rural Affairs
DMP	Dust Management Plan
EV	Electric Vehicle
GMCA	Greater Manchester Combined Authority
HDV	Heavy Duty Vehicle
IAQM	Institute of Air Quality Management
LA	Local Authority
LAQM	Local Air Quality Management
LDV	Light Duty Vehicle
MCC	Manchester City Council
NGR	National Grid Reference
NO ₂	Nitrogen dioxide
NO _x	Oxides of nitrogen
NPPF	National Planning Policy Framework
NPPG	National Planning Policy Guidance
PFS	Petrol Filling Station
PM ₁₀	Particulate matter with an aerodynamic diameter of less than 10µm
PM _{2.5}	Particulate matter with an aerodynamic diameter of less than 2.5µm
SCC	Salford City Council

Figures



Legend



Site Boundary

Title

Figure 1 - Site Location Plan

Project

Air Quality Assessment
Cheetham Hill Road, Manchester

Project Reference

5753

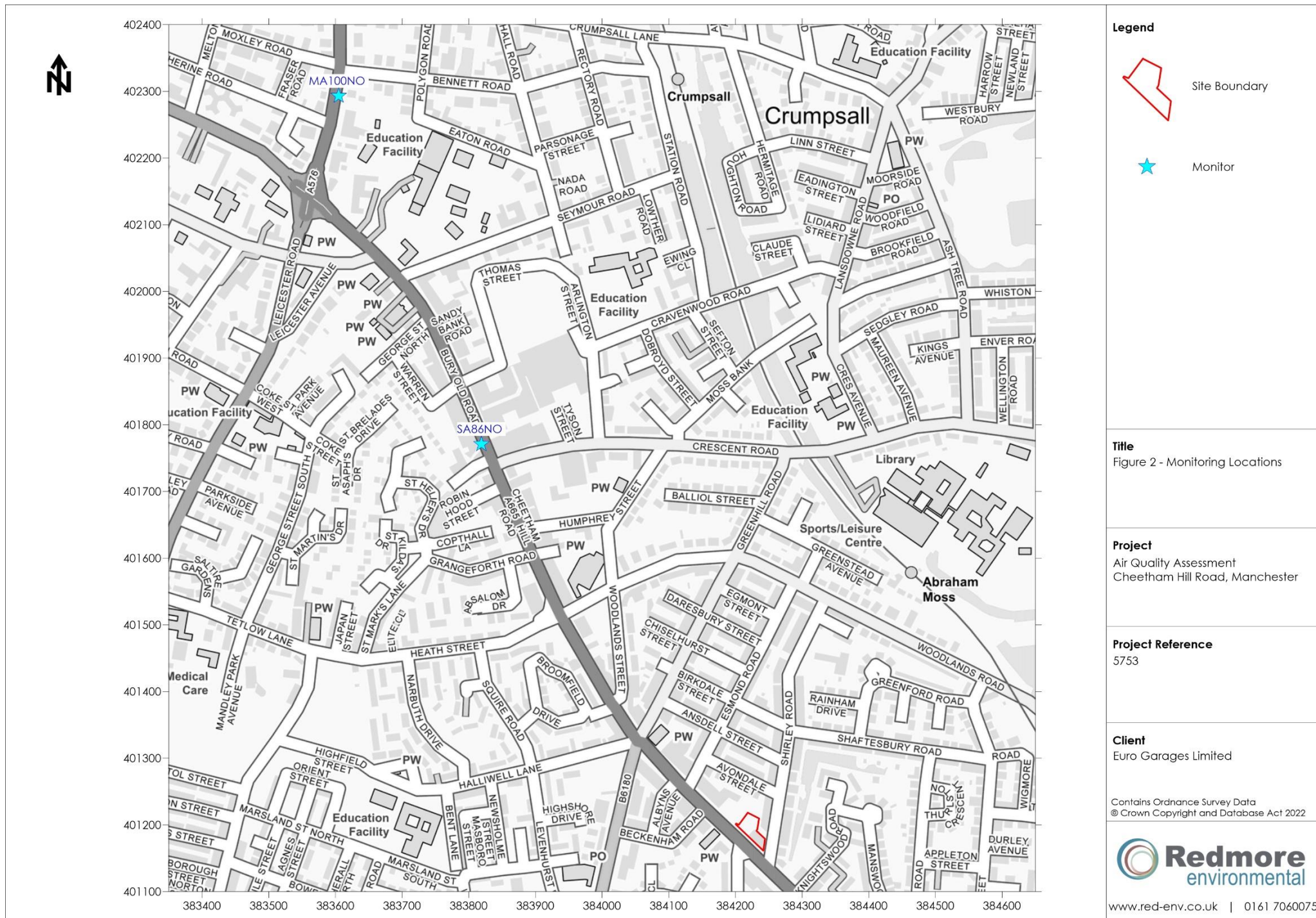
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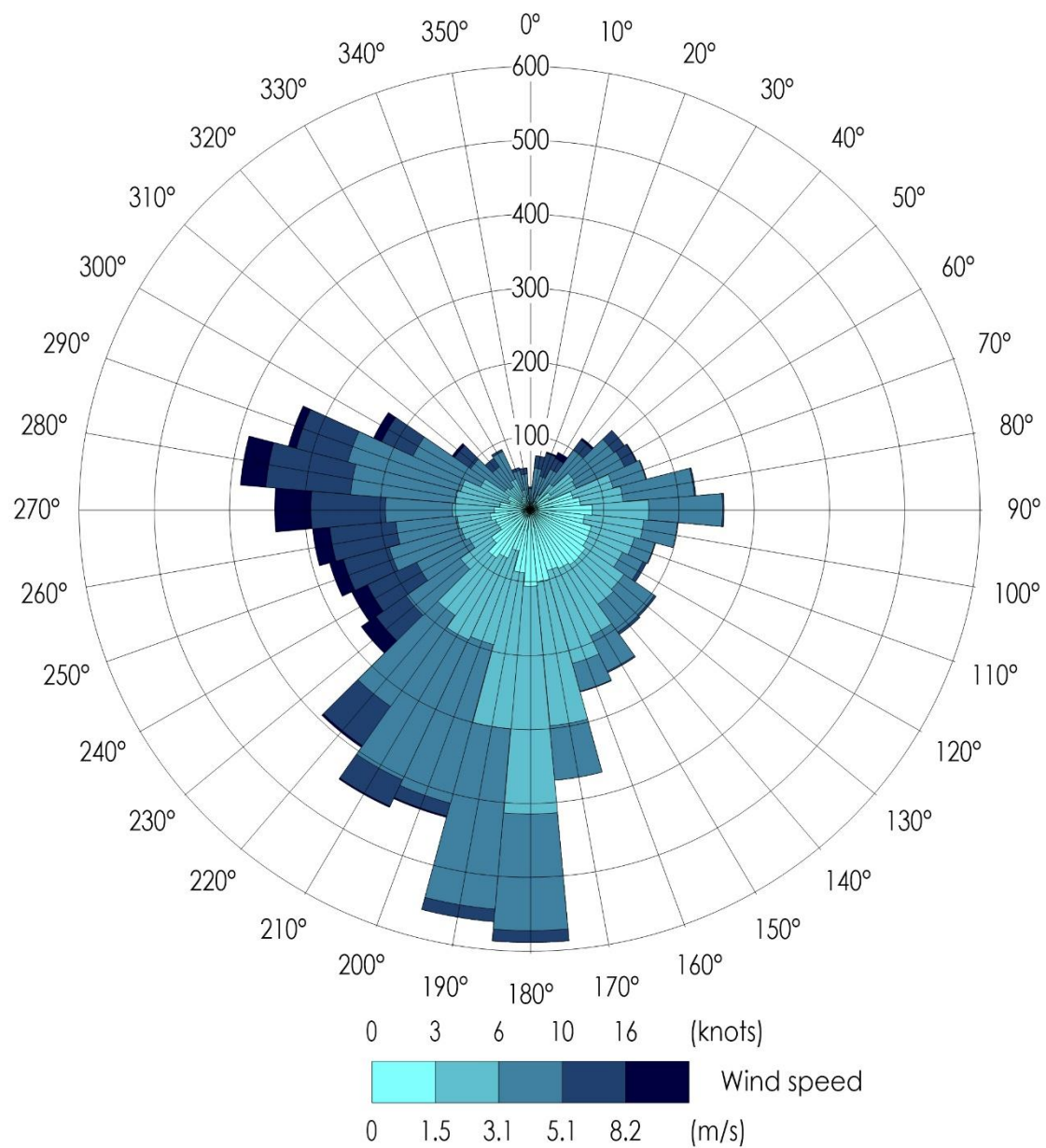
Euro Garages Limited

Contains Ordnance Survey Data
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Legend

Title

Figure 3 - Wind Rose of 2019
Manchester Airport Meteorological
Data

Project

Air Quality Assessment
Cheetham Hill Road, Manchester

Project Reference

5753

Client

Euro Garages Limited



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Date: 31st August 2022

Ref: 5753

Appendix 1 - Curricula Vitae

KEY EXPERIENCE:

Emily is a Principal Environmental Consultant with specialist experience in the air quality sector. Her key capabilities include:

- Production of Air Quality Assessments in accordance with Department for Environment, Food and Rural Affairs (DEFRA) methodologies for a range of residential, commercial and industrial sectors.
- Detailed dispersion modelling of road vehicle and industrial emissions using ADMS-Roads and ADMS-5. Studies have included impact assessment of ground level pollutant and odour concentrations and assessment of suitability of development sites for proposed end-use.
- Project management and co-ordination of Environmental Impact Assessments and scoping reports for developments throughout the UK.
- Assessment of fugitive dust impacts from a range of mineral extraction developments.
- Assessment of petrol stations to address benzene concentrations and their impact on adjacent developments.
- Production of air quality mitigation strategies specifically tailored to address issues at individual sites.
- Assessment of potential effects associated with network realignment schemes and highway developments.

SELECT PROJECTS SUMMARY:

Broad Street, Birmingham

Air Quality Assessment in support of a residential-led development on land at Broad Street, Birmingham. The proposals were located adjacent to a section of the Midland Metro Westside which runs along Broad Street. Consideration was made to the potential for re-alignment of the local road network as a result of the Metro to effect pollution levels at the development. The assessment indicated NO₂ concentrations exceeded air quality criteria from ground to third floor level as a result of road vehicle exhaust emissions. Mitigation was therefore specified for the affected units.

Home Farm, Forest Road, Warfield

Ecological Air Quality Assessment in support of a residential development. Natural England held concerns regarding potential impacts at sensitive ecological designations as a result of traffic exhaust emissions associated with the development. The predicted change in NO_x and ammonia concentrations and nitrogen and acid deposition was below the relevant criteria at all locations within the ecological designations. Impacts were therefore not considered to be significant.

Saltcoats Road, Stevenston

Air Quality Assessment in support of an educational campus and associated energy centre. Impacts associated with emissions from the proposed gas and biomass boilers were assessed through detailed dispersion modelling. This indicated impacts on annual mean NO₂ and PM₁₀ concentrations were predicted to be not significant.

Blackthorn & Piddington

Environmental Impact Assessment in support of a railway embankment scheme on land at the Network Railway Embankment between Piddington and Blackthorn. Due to the extensive stabilisation works a Fugitive Dust Emissions Assessment was undertaken in addition to consideration of road vehicle exhaust emissions. Due to the location of the site in relation to nearby sensitive receptors, potential impacts associated with construction works were not considered to be significant.

Blackmoorfoot Road, Huddersfield

Air Quality in support of a residential-led development in close proximity to an operational minerals facility. Due to the presence of the Johnsons Wellfield Quarry to the south of the site a Fugitive Dust Emissions Assessment was undertaken to determine potential impacts. Dispersion modelling of road vehicle exhaust emissions was also undertaken in support of the scheme. Results indicated the overall significance of fugitive dust emissions from the quarry and air quality impacts associated with operation of the development itself were not significant.

Lockwood Bar, Huddersfield

Air Quality Assessment for the proposed highway realignment scheme along Lockwood Road, Huddersfield. Changes in pollution levels were considered at sensitive receptors as a result of variations to road geometry and associated redistribution of vehicle trips across the local area. Results of the dispersion modelling study indicated air quality impacts as a result of the scheme were not significant.

KEY EXPERIENCE:

Alicia is an Environmental Consultant with specialist experience in the air quality sector. Her key capabilities include:

- Production of Air Quality Assessments in accordance with Department for Environment, Food and Rural Affairs (DEFRA) methodologies for a range of residential, commercial and industrial sectors.
- Detailed dispersion modelling of road vehicle exhaust emissions using ADMS-Roads. Studies have included assessment of road traffic exhaust emissions on sensitive receptors and exposure of new residents to poor air quality.
- Advanced Canyon Modelling to evaluate the impact of altered urban topography on air quality in built up areas.
- Assessment of construction dust impacts from a range of development sizes.
- Production of air quality mitigation strategies specifically tailored to address issues at individual sites.
- Definition of baseline air quality and identification of sensitive areas across the UK.
- Odour surveys to assess amenity and suitability of sites for potential future development for residential use.
- Production of Damage Cost Assessments in accordance with DEFRA guidance.

SELECT PROJECTS SUMMARY:

Cross Street, Sale

Air Quality Assessment for the redevelopment of the former Trafford Magistrates Court to provide houses and apartments. Concerns were raised regarding the exposure of future occupants to poor air quality due to road traffic emissions. Dispersion modelling was therefore undertaken to quantify pollution levels at the development. Predicted concentrations were below the relevant Air Quality Objectives (AQO) at all sensitive locations across the development. Mitigation in the form of mechanical ventilation was therefore not required.

Church Street, Litheringborough

Odour Impact Assessment in support of a hot food takeaway in Wellingborough. The assessment considered a number of factors, including the scale and nature of potential emissions, the location of nearest receptors and the proposed cooking type in accordance with the relevant DEFRA guidance. An appropriate ventilation system was identified and described on the basis of the assessment results.

Lewis Street, Cardiff

Air Quality Assessment in support of the construction of circa 30 residential units on land off Lewis Street, Cardiff. Concerns had been raised in relation to the potential exposure of future occupants to elevated pollution concentrations. Detailed dispersion modelling was subsequently undertaken using ADMS-roads to assess pollutant concentrations across the site. Results indicated that pollution levels were below the air quality standards across the site.

Leigham Court Road, Streatham

Air Quality Assessment in support of a mixed-use development located in an Air Quality Management Area (AQMA). Detailed dispersion modelling was undertaken with the inclusion of advanced canyon modelling to evaluate the impact of the urban topography on the dispersion of traffic related pollutants. Predicted concentrations of Nitrogen Dioxide (NO₂) were found to exceed the air quality criteria from ground to third floor level. As such, mitigation was specified for the affected units to ensure future residents would not be exposed to poor air quality.

Warning Tongue Lane, Doncaster

Air Quality Assessment in support of the construction of 220 residential units. The development had potential to cause air quality impacts at sensitive locations during construction and operation. Detailed dispersion modelling was therefore undertaken to consider the potential impact of the development on air quality at sensitive receptor locations within the vicinity of the site. Results indicated that impacts were not predicted to be significant at any sensitive receptor location. Suitable mitigation to control potential impacts associated with fugitive dust releases during construction was also identified.

Dearne Valley Parkway, Barnsley

Air Quality Assessment in support of an industrial development comprising three units. The development had the potential to cause impacts at sensitive locations. An assessment was therefore undertaken in order to determine baseline conditions and consider potential effects as a result of the proposals. Review of the results indicated an acceptable level of emissions from the scheme.

EMILY MACEY

Senior Air Quality Consultant



BSc (Hons), MSc, GradIEMA

Tel: 0161 706 0075 | Email: emily.macey@red-env.co.uk

KEY EXPERIENCE:

Emily is a Senior Environmental Consultant with specialist experience in the air quality sector. Her key capabilities include:

- Production of Air Quality Assessments in accordance with Department for Environment, Food and Rural Affairs (DEFRA) methodologies for a range of residential, commercial and industrial sectors.
- Detailed dispersion modelling of road vehicle exhaust emissions using ADMS-Roads. Studies have included assessment of road traffic exhaust emissions on sensitive receptors and exposure of new residents to poor air quality.
- Advanced canyon modelling to evaluate the impact of altered urban topography on air quality in built up areas.
- Assessment of construction dust impacts from a range of development sizes.
- Definition of baseline air quality and identification of sensitive areas across the UK.
- Production of air quality mitigation strategies specifically tailored to address issues at individual sites.
- Air quality monitoring at industrial sites to quantify pollutant concentrations
- Odour surveys to assess amenity and suitability of sites for potential future development for residential use.

SELECT PROJECTS SUMMARY:

Bowlers Yard, Manchester

Air Quality Assessment in support of an eleven storey residential development to provide circa 65 units on land known as Bowlers Yard, Manchester. The site was located in an Air Quality Management Area (AQMA) and concerns were raised regarding the exposure of future occupants to poor air quality due to road traffic emissions. Detailed dispersion modelling was undertaken using ADMS-roads to assess PM_{2.5}, PM₁₀ and NO₂ concentrations across the site. Results indicated that pollution levels were below the air quality objectives across the development.

Freemasons Arms Hotel, Heywood

Air Quality Assessment to support a residential-led development in an AQMA. Detailed dispersion modelling was undertaken with the inclusion of advanced canyon modelling to evaluate the impact of the urban topography within the locality on the dispersion of traffic related pollutants. Predicted concentrations of NO₂ were found to exceed air quality criteria at the building façade fronting Market Place at first floor level. As such, mitigation was specified for the affected units to ensure future residents would not be exposed to poor air quality.

Griffin Road, London

Air Quality Assessment in support of a residential development located in an AQMA. Detailed dispersion modelling was undertaken using ADMS-roads to assess PM₁₀ and NO₂ concentrations across the site. Results indicated that pollution levels were classified as APEC - A in accordance with the London Councils Air Quality and Planning Guidance.

High Street, Dudley

Odour Impact Assessment in support of a proposed residential-led development. Due to the location of the site, being above an existing hot food takeaway, odour surveys were required to assess the level of odour across the development. A risk assessment was also undertaken in accordance with the relevant odour guidance. An appropriate ventilation system was identified on the basis of the assessment results.

East Common Lane, Selby

Air Quality Assessment in support of an industrial development on land associated with Access 63 Business Park, East Common Lane Selby. Due to the size of the development it was possible that traffic generated from the scheme may cause negative impacts on sensitive receptors nearby. NO₂ and PM₁₀ concentrations were quantified at specific receptor points to ensure there would be no significant increases in pollution levels. Results revealed negligible impacts.

Wharton Road, Winsford

Air Quality Assessment in support of a residential development of circa 138 units on land off Wharton Road, Winsford. Using sensitive receptors, located in areas where increased road traffic may affect NO₂ concentrations, a comparison was made between overall concentrations with and without the development in place. Results revealed pollutant concentrations were below the relevant standards across the site and impacts were not significant.