Air Quality Assessment

Minden Close, Burnage

Client: Southway Housing Trust

Reference: 6342r1

Date: 31st January 2023



Report Issue

Report Title: Air Quality Assessment – Minden Close, Burnage

Report Reference: 6342

Field	Report Version			
	1	2	3	4
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Date of Issue	31st January 2023			
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Executive Summary

Redmore Environmental Ltd was commissioned by Southway Housing Trust to undertake an Air Quality Assessment in support of a planning application for a residential development on land off Minden Close, Burnage.

The development may lead to adverse impacts at sensitive locations during construction and operation, as well as the exposure of future residents to poor air quality. As such, an Air Quality Assessment was undertaken in order to determine baseline conditions, assess potential impacts associated with the scheme and consider the suitability of the site for the proposed end-use.

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 scale of the proposals, road traffic exhaust emission impacts were not predicted to be significant.

The potential for the exposure of future residents to elevated pollution levels was assessed based on the results of a desk-top study. This indicated that pollutant concentrations are likely to be below the relevant criteria at the development location. As such, the site is considered suitable for the proposed end use from an air quality perspective.

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

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Appendix 1 - Curricula Vitae

1.0 INTRODUCTION

1.1 Background

1.1.1 Redmore Environmental Ltd was commissioned by Southway Housing Trust to undertake an Air Quality Assessment in support of a planning application for a residential development on land off Minden Close, Burnage.

1.1.2 The development may lead to adverse impacts at sensitive locations during construction and operation, as well as the exposure of future residents to poor air quality. As such, an Air Quality Assessment was undertaken in order to determine baseline conditions, assess potential impacts associated with the scheme and consider the suitability of the site for the proposed end-use.

1.2 Site Location and Context

1.2.1 The site is located off Minden Close, Burnage, at approximate National Grid Reference (NGR): 385485, 391505. Reference should be made to Figure 1 for a map of the site and surrounding area.

1.2.2 The proposals comprise the demolition of the existing building and subsequent construction of two dwellings and associated infrastructure.

1.2.3 The development has the potential to cause impacts at sensitive locations. These may include fugitive dust emissions associated with construction works and road traffic exhaust emissions from vehicle trips generated by the proposals during the operational phase. Additionally, future residents may be exposed to any existing air quality issues at the site. An Air Quality Assessment was therefore undertaken in order to determine baseline conditions and consider potential effects as a result of the proposals. This is detailed in the following report.

2.0 LEGISLATION AND POLICY

2.1 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 (NO_2);
- Sulphur dioxide;
- Lead;
- Particulate matter with an aerodynamic diameter of less than 10µm (PM_{10});
- Particulate matter with an aerodynamic diameter of less than 2.5µm ($PM_{2.5}$);
- Benzene; and,
- Carbon monoxide.

2.1.2 Air Quality Target Values (AQTVs) were also 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 2007[1]. The document contains standards, objectives and measures for improving ambient air quality, including a number of AQOs. These are maximum ambient pollutant concentrations that are not to be exceeded either without exception or with a permitted number of exceedences 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 AQLVs 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/Air Quality Limit Values

Pollutant	Air Quality Objective/Air Quality Limit Values	
	Concentration (µg/m³)	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

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. However, the AQLV outlined in Table 1 remains the adopted air quality standard within the UK until further legislation is implemented.

2.1.6 Table 2 summarises the advice provided in DEFRA guidance[2] 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
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

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

Averaging Period	Objective Should Apply At	Objective Should Not Apply At
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, 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, 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 Framework[3] (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 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 […]"

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

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."

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

2.5 National Planning Practice Guidance

2.5.1 The National Planning Practice Guidance[4] (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 considerations be relevant to the development management process?
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?

[4] https://www.gov.uk/guidance/air-quality--3.

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

2.5.3 Local Planning Policy

2.5.4 The Manchester Local Development Framework consists of a series of planning documents of which the Core Strategy[5] 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.

2.5.5 A 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
>
> Development Management

[5] Core Strategy, MCC, 2012.

> 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."

2.5.6 The above policies were considered as necessary throughout the assessment.

2.5.7 MCC has also produced an 'Air Quality & Planning Technical Guidance' Supplementary Planning Document[6] (SPD) which provides guidance on assessing the impacts of proposed development on air quality. This was taken into consideration throughout the undertaking of the assessment.

[6] Air Quality & Planning Technical Guidance, MCC, 2022.

3.0 METHODOLOGY

3.1 Introduction

3.1.1 The proposed development has the potential to cause air quality impacts during the construction and operational phases, as well as expose future residents to elevated pollution levels. These issues have been assessed in accordance with the following methodology, which was agreed with Rebecca Twigg, Environmental Protection Officer at MCC on 30th January 2023.

3.2 Construction Phase Assessment

3.2.1 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].

3.2.2 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.

3.2.3 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 PM_{10}.

3.2.4 The assessment steps are detailed below.

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

Step 1

3.2.5 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.

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

Step 2

3.2.7 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).

3.2.8 The two factors are combined in Step 2C to determine the risk of dust impacts without mitigation applied.

3.2.9 Step 2A defines the potential magnitude of dust emission through the construction phase. The relevant criteria are summarised in Table 3.

Table 3 Construction Dust - Magnitude of Emission

Magnitude	Activity	Criteria
Large	Demolition	• Total volume of building to be demolished greater than 50,000m^3 • 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 10,000m^2 • 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 100,000m^3 • 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 20,000m^3 and 50,000m^3 • Potentially dusty construction material • Demolition activities 10m to 20m above ground level
	Earthworks	• Total site area 2,500m^2 to 10,000m^2 • 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 25,000m^3 to 100,000m^3 • 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 20,000m^3 • 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 2,500m^2 • 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 25,000m^3 • 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

3.2.10 Step 2B defines the sensitivity of the area around the development to potential dust impacts. The influencing factors are shown in Table 4.

Table 4 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 PM_{10}. 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

3.2.11 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.

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

3.2.13 The criteria for determining the sensitivity of the area to dust soiling effects on people and property is summarised in Table 5.

Table 5 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

3.2.14 Table 6 outlines the criteria for determining the sensitivity of the area to human health impacts.

Table 6 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

3.2.15 Table 7 outlines the criteria for determining the sensitivity of the area to ecological impacts.

Table 7 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

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

3.2.17 Table 8 outlines the risk category from demolition activities.

Table 8 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

3.2.18 Table 9 outlines the risk category from earthworks and construction activities.

Table 9 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

3.2.19 Table 10 outlines the risk category from trackout activities.

Table 10 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

3.2.20 Step 3 requires the identification of site specific mitigation measures within the IAQM guidance[8] 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

3.2.21 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**.

3.2.22 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.

3.3 Operational Phase Assessment

Potential Development Impacts

3.3.1 The development has the potential to increase concentrations of NO_2, PM_{10} and $PM_{2.5}$ 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 using the criteria contained within the IAQM 'Land-Use Planning & Development Control: Planning for Air Quality'[9] guidance document to determine the potential for trips generated by the development to affect local air quality.

3.3.2 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.

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

A. If any of the following apply:

- 10 or more residential units or a site area of more than 0.5ha; or,
- more than 1,000 m^2 of floor space for all other uses or a site area greater than 1ha.

B. Coupled with any of the following:

- the development has more than 10 parking spaces; or,
- the development will have a centralised energy facility or other centralised combustion process.

3.3.3 Should these criteria not be met, then the IAQM guidance[10] considers air quality impacts associated with a scheme to be **not significant** and no further assessment is required.

3.3.4 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 guidance[11].

Potential Future Exposure

3.3.5 The proposed development comprises residential land use. This is considered a location of relevant exposure for long and short term AQOs in accordance with the criteria provided within DEFRA guidance[12], as summarised in Table 2. Existing air quality conditions at the site were therefore assessed through consideration of the following factors:

- AQMA designations;
- Proximity to significant pollution sources;
- Local monitoring results; and,
- Background pollutant concentration predictions.

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

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

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

3.3.6 The findings were subsequently used to determine the potential for AQO exceedences at the development location. Should the assessment indicate significant uncertainty over air quality conditions at the site then further quantitative methods, such as detailed dispersion modelling, could be utilised to refine predictions.

4.0 BASELINE

4.1 Introduction

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

4.2 Local Air Quality Management

4.2.1 As required by the Environment Act (1995), as amended by the Environment Act (2001), MCC has undertaken Review and Assessment of air quality within their area of jurisdiction. This process has indicated that annual mean NO_2 concentrations 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."

4.2.2 The development is located 180m south-west of the AQMA. As such, there is the potential for any emissions from the proposals to affect this sensitive area. This has been considered throughout the assessment.

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

4.3 Air Quality Monitoring

4.3.1 Monitoring of pollutant concentrations is undertaken by MCC throughout their area of jurisdiction. Recent annual mean NO_2 results recorded in the vicinity of the development are shown in Table 11.

Table 11 Monitoring Results

Monitoring Site		Monitored NO_2 Concentration (µg/m³)		
		2019	2020	2021
MA74NO	Kingsway	33.6	23.3	25.6

Note: (a) Monitoring data not available.

4.3.2 As shown in Table 11, NO_2 concentrations were below the annual mean AQO at the MA74NO monitor in recent years. Reference should be made to Figure 2 for a map of the survey location.

4.3.3 It should be noted that pollutant concentrations recorded during 2020 and 2021 are lower than previous years due to a reduction in traffic and associated emissions caused by the COVID-19 pandemic. The results should therefore be viewed with caution.

4.3.4 MCC do not undertake PM_{10} or $PM_{2.5}$ monitoring within the vicinity of the site.

4.4 Background Pollutant Concentrations

4.4.1 Predictions of background pollutant concentrations on a 1km by1km 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: 385500, 391500. Data for this location was downloaded from the DEFRA website[13] for the purpose of the assessment and is summarised in Table 12.

Table 12 Background Pollutant Concentration Predictions

Pollutant	Predicted 2023 Background Pollutant Concentration (µg/m³)
NO_2	14.64
PM_{10}	11.55
$PM_{2.5}$	7.90

4.4.2 As shown in Table 12, predicted background NO_2, PM_{10} and $PM_{2.5}$ concentrations are below the relevant AQOs and AQLV at the development site.

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

4.5 Sensitive Receptors

4.5.1 A sensitive receptor is defined as any location which may be affected by changes in air quality as a result of a development. 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	More than 100	0
Up to 100	More than 100	-
Up to 350	More than 100	-

4.5.2 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

4.5.3 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.

4.5.4 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 Fugitive Dust Impacts

Guidance	Comment
Whether there is any history of dust generating activities in the area	The desk top study 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	There is no significant screening around the boundary
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. As such, receptors to the north of the boundary are most likely to be affected by dust releases
Conclusions drawn from local topography	There are no significant topographical constraints to dust dispersion
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 unlikely that it will extend over one year
Any known specific receptor sensitivities which go beyond the classifications given in the document	No specific receptor sensitivities identified during the baseline assessment

4.5.5 Based on the criteria shown in Table 4, the sensitivity of the receiving environment to potential dust impacts was determined as **high**. This was because the identified receptors included residential properties.

4.5.6 The sensitivity of the receiving environment to specific potential dust impacts, based on the criteria shown in Section 3.2, 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

5.0 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, as well as exposure of future residents to any existing air quality issues. These factors 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 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 The desk-study undertaken to inform the baseline identified a number of sensitive receptors within 350m of the site boundary. As such, a detailed assessment of potential dust impacts was required.

Step 2

Demolition

5.2.4 Demolition will be undertaken at the start of the construction phase and will involve clearance of the existing structure on site. It is estimated that the building volume to be demolished is less than 20,000m^3. In accordance with the criteria outlined in Table 3, the magnitude of potential dust emissions from demolition is therefore **small**.

5.2.5 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 8, the development is considered to be a **medium** risk site for dust soiling as a result of demolition activities.

5.2.6 Table 16 indicates the sensitivity of the area to human health impacts is **low**. In accordance with the criteria outlined in Table 8, the development is considered to be a **negligible** risk site for human health impacts as a result of demolition activities.

Earthworks

5.2.7 Earthworks will primarily involve excavating material, haulage, tipping and stockpiling, as well as site levelling and landscaping. The area of the proposed development site is less than 2,500m^2. In accordance with the criteria outlined in Table 3 the magnitude of potential dust emissions from earthworks is therefore **small**.

5.2.8 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 9, the development is considered to be a **low** risk site for dust soiling as a result of earthworks.

5.2.9 Table 16 indicates the sensitivity of the area to human health impacts is **low**. In accordance with the criteria outlined in Table 9, the development is considered to be a **negligible** risk site for human health impacts as a result of earthworks.

Construction

5.2.10 Due to the size of the proposals, the total building volume is likely to be less than 25,000m^3. In accordance with the criteria outlined in Table 3, the magnitude of potential dust emissions from construction 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 9, the development is considered to be a **low** risk site for dust soiling as a result of construction 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 9, the development is considered to be a **negligible** risk site for human health impacts as a result of construction activities.

Trackout

5.2.13 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 3, the magnitude of potential dust emissions from trackout is therefore **small**.

5.2.14 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 10, the development is considered to be a **low** risk site for dust soiling as a result of trackout activities.

5.2.15 Table 16 indicates the sensitivity of the area to human health impacts is **medium**. In accordance with the criteria outlined in Table 10, 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

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

Table 17 Summary of Potential Unmitigated Dust Risks

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

5.2.17 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.

5.2.18 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

5.2.19 The IAQM guidance[14] 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 (CEMP) 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) or similar, 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

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

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 • 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 • Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials
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	• Ensure vehicles entering and leaving site are covered to prevent escape of materials

Step 4

5.2.20 Assuming the relevant mitigation measures outlined in Table 18 are implemented, the residual impacts from all dust generating activities is predicted to be **not significant**, in accordance with the IAQM guidance[15].

5.3 Operational Phase Assessment

Potential Development Impacts

5.3.1 Any vehicle movements associated with the proposals will generate exhaust emissions on the local and regional road networks. The proposals comprise two residential dwellings. 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 IAQM[16] screening criteria shown in Section 3.2.

Potential Future Exposure

5.3.2 The proposed development comprises residential land-use and therefore may introduce new receptors into an area of poor air quality. Existing conditions at the site are therefore considered in the following Sections.

AQMA Designation

5.3.3 The site is located approximately 180m south-west of the GMCA AQMA which has been declared due to exceedences of the annual mean AQO for NO_2. The designation does not cover 1-hour NO_2 or annual mean or 24-hour mean PM_{10} concentrations, indicating exceedences of these AQOs have not been identified within MCC's administrative extents. As such, they have not been considered further in the context of this assessment.

5.3.4 As the site is located within a residential area, it would be anticipated that there would be a need for an AQMA to cover nearby housing if exceedences of the AQOs had been

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

[16] Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.

recorded or predicted locally. As this is not the case, it is considered that exceedences of the AQOs are unlikely to occur at the proposed development.

Proximity to Significant Pollution Sources

5.3.5 A desk-top study was undertaken in order to identify any significant pollution sources within the vicinity of the site. The findings are provided in Table 19.

Table 19 Significant Pollution Sources

Source	Distance to Site (m)	Comment
Minden Close	Adjacent	Minden Close is an unclassified minor road and is unlikely to be subject to high volumes of traffic
Parrs Wood Road	30	Parrs Wood Road is an unclassified minor road and is unlikely to be subject to high volumes of traffic

5.3.6 As shown in Table 19, there are two identified pollutant sources within the vicinity of the site. Minden Close and Parrs Wood Road are both minor in nature. As such, it is considered unlikely these sources will contribute significantly to pollution levels above background at the proposed development.

Local Monitoring Results

5.3.7 As shown in Table 11, MCC undertake monitoring of NO_2 concentrations at one location within the vicinity of the proposed development.

5.3.8 Annual mean NO_2 concentrations were below the AQO at the MA74NO - Kingsway monitor between 2019 and 2021. The survey site is positioned at a roadside location. However, the proposed development is distanced from any major road vehicle emission sources. As outlined in DEFRA guidance[17] pollutant levels decrease with distance from sources such as roads. Therefore, it is anticipated that NO_2 concentrations at the proposed development would be lower than those recorded at the MA74NO monitoring site.

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

5.3.9 Based on the above, exceedences of the relevant AQO are considered unlikely at the development location.

Background Pollutant Concentration Predictions

5.3.10 As shown in Table 12, predicted background pollutant concentrations for the grid squares containing the site were below the AQOs and AQLV during 2023.

5.3.11 Based on the predicted background concentrations, exceedences of the relevant criteria are considered unlikely at the development location.

Summary

5.3.12 It is considered likely that pollutant concentrations are below the relevant AQO at the proposed development site for the following reasons:

- The site is not located within an AQMA;
- The site is distanced from major pollutant sources;
- Review of local monitoring results has indicated likely compliance with the AQO for NO_2 at the development; and,
- Predicted background concentrations are below the relevant AQOs and AQLV.

5.3.13 Based on the assessment results, exposure of future residents to exceedences of the relevant AQOs and AQLV is not considered likely. As such, the site is considered suitable for the proposed use from an air quality perspective.

Mitigation

5.3.14 As air quality impacts associated with the proposals were predicted to be **not significant**, further mitigation to control effects is not considered necessary. However, a number of additional 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 20 describes the good practice

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

principles detailed in the IAQM guidance along with how each has been addressed with regards to the proposals.

Table 20 Good Practice Design Principles

Phase	Principle	Action
Design Phase	New developments should not contravene the Council's Air Quality Action Plan[19], or render any of the measures unworkable	It is confirmed that the proposals will not contravene MCC's Air Quality Action Plan, 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 proposal has been designed to encourage sustainable behaviours, such as active and public transport, due to its close proximity to local bus routes and amenities
Operational Phase	MCC's Electric Vehicle (EV) Charging Best Practice Recommendations have been considered. These are: If car parking is being provide for residential units: • On-site/allocated parking: 1 EV charge point for each dwelling; or, • Unallocated parking: minimum 20% EV, and cable routes for all other spaces.	EV charging may be included as part of the scheme if required by the LA
	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 produced for the development if required by the LA

[19] Greater Manchester Air Quality Action Plan 2016-2021, GMCA, 2016.

Phase	Principle	Action
	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/Nm^3; • Compression ignition engine: 400mgNO_x/Nm^3; • Gas turbine: 50mgNO_x/Nm^3. 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/Nm^3 and 25mgPM/Nm^3	Any boilers to be included in the development will be provisioned in accordance with the relevant requirements

5.3.15 It is considered the above methods would further reduce potential impacts associated with the proposals. Specific mitigation suited to the development 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 Southway Housing Trust to undertake an Air Quality Assessment in support of a planning application for a residential development on land off Minden Close, Burnage.

6.1.2 The development may lead to adverse impacts at sensitive locations during construction and operation, as well as the exposure of future residents to poor air quality. As such, an Air Quality Assessment was undertaken in order to determine baseline conditions, assess potential impacts associated with the scheme and consider the suitability of the site for the proposed end-use.

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 against the screening criteria provided within the IAQM[20] guidance document. Due to the scale of the proposals, road traffic impacts were predicted to be **not significant**.

6.1.5 The potential for exposure of future residents to exceedences of the AQOs was assessed based on the AQMA designation, proximity of pollution sources to the site, local monitoring results and predicted background concentrations. This indicated that concentrations of NO_2, PM_{10} and $PM_{2.5}$ are likely to be below the relevant AQOs and AQLV at the development location. As such, the site is considered suitable for the proposed use from an air quality perspective.

6.1.6 Based on the assessment results, air quality issues are not considered a constraint to planning consent for the development.

[20] Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.

7.0 ABBREVIATIONS

AADT	Annual Average Daily Traffic
AQLV	Air Quality Limit Value
AQMA	Air Quality Management Area
AQO	Air Quality Objective
AQS	Air Quality Strategy
CEMP	Construction Environmental Management Plan
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
NPPF	National Planning Policy Framework
NPPG	National Planning Policy Guidance
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
SPD	Supplementary Planning Document

Figures



Legend

Site Boundary

Title
Figure 1 - Site Location Plan

Project
Air Quality Assessment
Minden Close, Burnage

Project Reference
6342

Client
Southway Housing Trust

Contains Ordnance Survey Data
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Legend

Site Boundary

Monitor

Title
Figure 2 - Monitoring Location

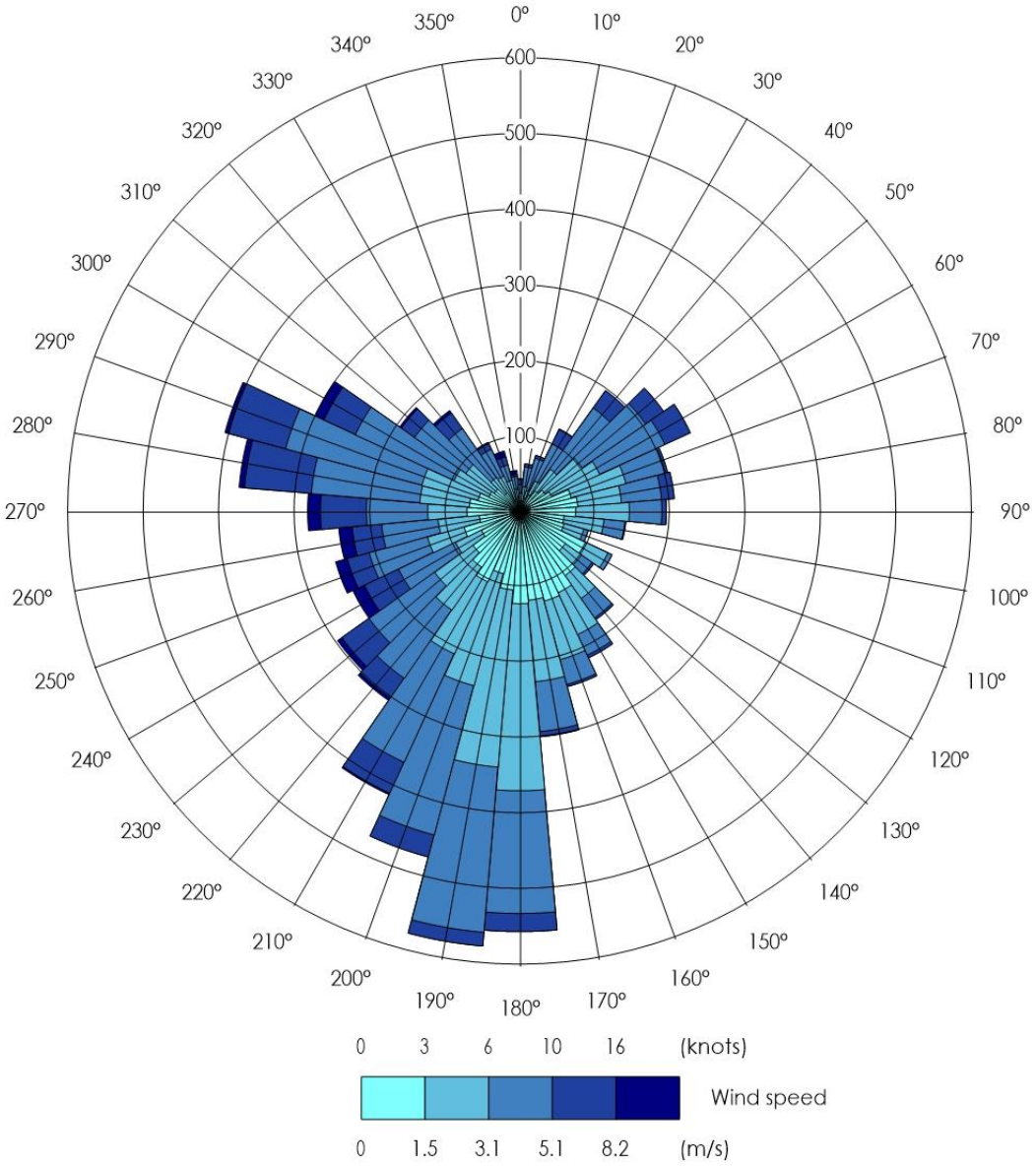
Project
Air Quality Assessment
Minden Close, Burnage

Project Reference
6342

Client
Southway Housing Trust

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Legend

Title
Figure 3 - Wind Rose of 2021 Manchester Airport Meteorological Data

Project
Air Quality Assessment
Minden Close, Burnage

Project Reference
6342

Client
Southway Housing Trust

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Appendix 1 - Curricula Vitae

JETHRO REDMORE

Director

BEng (Hons), MSc, MIAQM, MIEnvSc, PIEMA, CEnv

KEY EXPERIENCE:

Jethro is a Chartered Environmentalist and Director of Redmore Environmental with specialist experience in the air quality and odour sectors. His key capabilities include:

- Production and management of Air Quality, Dust and Odour Assessments for a wide-range of clients from the retail, residential, infrastructure, commercial and industrial sectors.
- Production and co-ordination of Environmental Permit applications for a variety of industrial sectors.
- Detailed dispersion modelling of road vehicle and industrial emissions using ADMS-Roads, ADMS-5, AERMOD-PRIME and BREEZE-ROADS. 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.
- Provision of expert witness services at Planning Inquiries.
- Design and project management of pollutant monitoring campaigns.
- Co-ordination and management of large-scale multi-disciplinary projects and submissions.
- Provision of expert advice to local government and international environmental bodies, as well as involvement in production of industry guidance.

SELECT PROJECTS SUMMARY:

Industrial

Shanks Waste Management - Odour Assessments of two waste management facilities to support Environmental Permit Applications.

Tatweer Petroleum - dispersion modelling of Bahrain oil field.

Doha South Sewage Treatment Works - AQA for works extension in Qatar.

IRIS Environmental Appraisal Report Reviews, Isle of Man Government - odour assessment reviews.

Lankem, Greater Manchester - Environmental Permit Application for chemical manufacturing plant.

Newport Docks Bulk Drying, Pelleting and CHP Facility - air quality EIA for gas CHP.

Springshades, Leicester - Environmental Permit Variation Application for textile manufacturing plant.

Valspar, Chester - Odour Assessment and production of Odour Management Plan for a paint manufacturing plant in response to neighbour complaints.

Agrivert - dispersion modelling of odour and CHP emissions from numerous AD plants.

James Cropper Paper Mill, Cumbria - air quality EIA, Environmental Permit Variation and Human Health Risk Assessment for new biomass boiler adjacent to SSSI.

Rigg Approach, Leyton - Air Quality Assessment in support of waste transfer site.

Lynchford Lane Waste Transfer Station - biomass facility energy recovery plant.

Barnes Wallis Heat and Power, Cobham - biomass facility adjacent to AQMA.

Residential

Wood St Mill, Bury - residential development adjacent to scrap metal yard.

Hyams Lane, Holbrook - Odour Assessment to support residential development adjacent to sewage works.

North Wharf Gardens, London - peer review of EIA undertaken for large residential development.

Loxford Road, Alford - Air Quality EIA for residential development, included consideration of impacts from associated package sewage works

Elephant and Castle Leisure Centre - baseline AQA for redevelopment.

Carr Lodge, Doncaster - EIA for large residential development.

Queensland Road, Highbury - residential scheme including CHP.

Bicester Ecotown - dispersion modelling of energy centre.

Castleford Growth Delivery Plan - baseline air quality constraints assessment for town redevelopment.

York St, Bury - residential development adjacent to AQMA.

Temple Point Leeds - residential development adjacent to M1.

Commercial and Retail

Etihad Stadium - Air Quality EIA for the extension to the capacity of the Etihad Stadium, Manchester.

Wakefield College - redevelopment of city centre campus in AQMA.

Manchester Airport Cargo Shed - commercial development.

Manchester Airport Apron Extension - EIA including aircraft emission modelling.

National Youth Theatre, Islington - redevelopment to provide new arts space and accommodation.

LAUREN CASEY

Senior Air Quality Consultant

BSc (Hons), GradIEMA

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KEY EXPERIENCE:

Lauren 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.

SELECT PROJECTS SUMMARY:

Circle Court Tower, Stretford

Air Quality Assessment for the refurbishment of the existing Circle Court Tower in Stretford, Greater Manchester, to provide improved apartments for occupants. Concerns were raised regarding the exposure of future occupants to poor air quality due to road traffic emissions from vehicles using Junction 9 of the M60 motorway, adjacent to the site. Dispersion modelling was undertaken to quantify pollution levels at several different heights reflective of residential units within 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.

Greenbrow Road, Wythenshawe

Air Quality Assessment in support of a residential development of 56 units and associated infrastructure. The proposals involved demolition of hard standings prior to construction of low rise dwellings. An assessment of fugitive dust emissions was undertaken and the results indicated that the use of good practice control measures would provide suitable mitigation for the impacts of the scheme.

The Grange, Handforth

Co-ordination and management of a 3-month study in order to determine baseline conditions and identify any potential issues at a residential estate. Concerns were raised regarding the exposure of residents to poor air quality due to road traffic emissions from the new Manchester Airport Relief Road. The results of the monitoring identified nitrogen dioxide (NO_2) concentrations to be below the AQO.

Copeley Hill, Birmingham

Air Quality Assessment in support of proposed residential apartments and dwellings within an Air Quality Management Area (AQMA). A two-staged assessment was undertaken involving a three month diffusion tube study and subsequent dispersion modelling using ADMS-Roads. Predicted concentrations indicated elevated pollution levels at residential units along the site boundary. As such, suitable mitigation in the form of mechanical ventilation has been specified for the relevant dwellings in order to protect future residents from poor air quality.

Clinton Place Car Park, Sunderland

Air Quality Assessment in support of a proposed surface car park on land at Clinton Place, Sunderland. The development has 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. This included emissions for the local road network and vehicles on the car park itself. Results indicated that impacts were predicted to be negligible at all sensitive receptor locations. Suitable mitigation to control potential impacts associated with fugitive dust releases during construction were also identified.

ALICIA DALE

Air Quality Consultant

BSc (Hons), AMIEnvSc, AMIIAQM

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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, Irthlingborough

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.