



Air Quality Assessment

C10764

Levenshulme Road, Gorton

Prepared for

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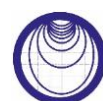
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Ecology



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Air Quality

Executive Summary

Site Address

Levenshulme Road, Gorton

Omnia was commissioned by Watson Homes to undertake an Air Quality Assessment to support a planning application for a residential development on at Levenshulme Road, Gorton.

The proposals comprise the construction of a 37-unit block of flats along with car parking and associated infrastructure.

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

Potential construction phase air quality impacts from fugitive dust emissions were assessed as a result of 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.

At the time of writing this report, transport data is awaited. Once the traffic data is available, a full assessment will be carried out to assess air quality impacts and site suitability for proposed-end use.

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1.0 INTRODUCTION

1.1 Background

Omnia was commissioned by Watson Homes to undertake an Air Quality Assessment to support a planning application for a residential development on at Levenshulme Road, Gorton.

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

1.2 Proposed Development

The site is located at Levenshulme Road, Gorton, at approximate National Grid Reference (NGR): 388700, 395400. Reference should be made to Figure 1 for a map of the site and surrounding area within Appendix- I.

The proposals comprise construction of a 37-unit block of flats together with car parking and associated infrastructure.

An Air Quality Management Area (AQMA) has been declared by Stockport Metropolitan Borough Council (SMBC) due to exceedences of the Air Quality Objective (AQO) for annual mean nitrogen dioxide (NO₂) concentrations. The development is located proximity within the AQMA. As such, there is the potential for exposure of future residents to elevated pollutant levels. An Air Quality Assessment was therefore undertaken in order to determine baseline conditions, consider site suitability for the proposed end-use and define any requirement for mitigation. Potential impacts associated with the construction and operation of the scheme have also been assessed using standard screening methodologies.

1.3 Objectives

This Assessment has been undertaken to identify and assess any surrounding emission-generating activities which may have the potential to constrain the proposed air quality-sensitive development. Accordingly, this Assessment has been completed with due regard to the National Planning Policy Framework and its associated National Planning Policy Guidance in addition to appropriate Air Quality Standards and guidance documents relevant to the assessment of air quality impacts.

1.4 Acronyms

All acronyms used within this report are defined in the Abbreviations listings, set out in Section 7.

1.5 Confidentiality

This report has been prepared solely for the use of the Client. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from Omnia; a charge may be levied against such approval.

2.0 LEGISLATION AND POLICY

2.1 Legislation

The Air Quality Standards Regulations (2010) came into force on 11th June 2010 and include Air Quality Limit Values (AQLVs) for the following pollutants:

- 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});
- Benzene; and,
- Carbon monoxide.

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).

Part IV of the Environment Act (1995) requires UK government to produce a national Air Quality Strategy (AQS) which contains standards, objectives and measures for improving ambient air quality. The most recent AQS was produced by the Department for Environment, Food and Rural Affairs (DEFRA) and published in July 2007¹. The AQS sets out AQOs that 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.

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

Table 1 Air Quality Objectives/ Limit Values

Pollutant	Air Quality Objective/ Limit Values	
	Concentration	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

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

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

² Local Air Quality Management Technical Guidance (TG16), DEFRA, 2021.

Averaging Period	Objective Should Apply At	Objective Should Not Apply At
		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
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

Under Section 82 of the Environment Act (1995) (Part IV) 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 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

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."

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

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.

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

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."

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 [...]"

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

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 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?

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

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

2.6 Local Planning Policy

The Core Strategy⁵ provides the overall spatial strategy for the Local Development Framework (LDF). It sets down why change is needed; what should be done; and where, when and how it is going to happen, including the provision of supporting infrastructure. The Core Strategy covers the period from its adoption to 2026

Development Management Policy SIE-3

Protecting, Safeguarding and enhancing the Environment- What we're going to do or require:

[.....]

B) CONTROLLING POLLUTION

3.348 *New development that seeks to reduce air, noise, light, water or ground pollution in areas or locations where acceptable standards are already exceeded will be given positive consideration. New housing or other environmentally sensitive development will not be permitted where existing pollution levels are unacceptable and where there is no reasonable prospect that they can be satisfactorily reduced through specific measures or action programmes. In particular:*

Core Policy CS10

AN EFFECTIVE AND SUSTAINABLE TRANSPORT NETWORK - Transport and Inequality

3.435 *The Council and its partners will manage development and seek to implement strategies which ensure that no section of the community suffers unnecessary inequality as a result of their transport needs not being sustainably met. Local services, employment opportunities, education, community and cultural facilities will be provided in a way that is accessible to all by walking, cycling and public transport.*

[.....]

[.....]

Air Quality and Noise

3.466 *The Council will continue to work alongside other Greater Manchester Boroughs on implementing Air Quality Management Plans to facilitate improvements in air quality along the Borough's major road corridors, where national and European targets on nitrogen dioxide emissions are currently not being met.*

3.469 *Modal shift from car to public transport, walking and cycling will also assist in an improvement in air quality.*

AIR QUALITY: *An Air Quality Management Area (AQMA) has been declared under the provisions of the National Local Air Quality Strategy and is subject to revision on a biennial basis. All development should be designed so as to ensure that adequate levels of air quality are achieved within buildings. Development that assists in reducing the existing levels of poor air quality within the declared AQMA will be given positive consideration. Development that would exacerbate the existing poor air quality levels within the AQMA will be permitted only where it is demonstrated that that exacerbation will be mitigated.*

The above policies and document were taken into consideration throughout the undertaking of the assessment.

⁵ Stockport Metropolitan Brough Council Local Plan Core Strategy, SMBC Local Plan, 2011.

3.0 METHODOLOGY

3.1 Introduction

The proposed development has the potential to cause the exposure of future residents to elevated pollution levels, as well as cause air quality impacts during the construction and operational phases. These issues have been assessed in accordance with the following methodology and agreed with EHO at SMBC via email.

3.2 Construction Phase

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 V1.1'⁶.

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.

There is no demolition planned and therefore not considered within this assessment. 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.

The assessment steps are detailed below.

3.2.1 Step 1

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.

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

Site has no demolition activities planned; therefore, demolition activities have not been assessed further within this assessment.

3.2.2 Step 2

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

⁶ Guidance on the Assessment of Dust from Demolition and Construction V1.1, IAQM, 2016.

(Step 2B).

The two factors are combined in Step 2C to determine the risk of dust impacts without mitigation applied. Step 2A defines the potential magnitude of dust emission through the construction phase. The relevant criteria are summarised in Table 3.

Table 3 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
	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 more than 10 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
	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

Magnitude	Activity	Criteria
		➤ 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

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 PM₁₀. e.g. residential properties, hospitals, schools and residential care homes	Internationally or nationally designated site e.g. Special Area of Conservation
Medium	Users would expect to enjoy a reasonable level of amenity Aesthetics or value of their property could be diminished by soiling People or property wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land e.g. parks and places of work	Nationally designated site e.g. Sites of Special Scientific Interest
Low	Enjoyment of amenity would not reasonably be expected Property would not be expected to be diminished in appearance Transient exposure, where people would only be expected to be present for limited periods. e.g. public footpaths, playing fields, shopping streets, farmland, short term car parks and roads	Locally designated site e.g. Local Nature Reserve

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

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
	1 - 10	Medium	Low	Low	Low
Medium	More than 1	Medium	Low	Low	Low
Low	More than 1	Low	Low	Low	Low

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
	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

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
Low	-	1 or more	Low	Low	Low	Low	Low

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

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

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

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

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

3.2.3 Step 3

Step 3 requires the identification of site-specific mitigation measures within the IAQM guidance⁷ 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.

3.2.4 Step 4

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

3.3 Operational Phase

3.3.1 Potential Development Impacts

The proposal has the potential to increase concentrations of NO₂, PM₁₀ 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. An assessment was therefore undertaken using the criteria contained within the IAQM 'Land-Use Planning & Development Control: Planning for Air Quality'⁸ guidance to determine the potential for trips generated by the scheme to affect local air quality.

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

- 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.

Should these criteria not be met, the IAQM guidance⁹ considers air quality impacts associated with a scheme to be **not significant** and no further assessment is required.

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 guidance¹⁰.

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

⁸ Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.

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

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

4.0 BASELINE

4.1 Introduction

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.

4.2 Local Air Quality Management

As required by the Environment Act (1995), SMBC 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 relevant AQO within the council's administrative extents. As such, a number of roads within Wigan 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 Wigan Council area."

The development is located within 40m from the AQMA. As such, there is the potential for exposure of future residents to poor air quality and vehicles travelling to and from the site to increase pollution levels in this sensitive area. This has been considered throughout the assessment.

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

4.3 Air Quality Monitoring

Monitoring of pollutant concentrations is undertaken by SMBC throughout their area of jurisdiction. There was no monitoring location found nearby the site.

As required by the Environment Act (1995), Manchester City Council (MCC) has undertaken Review and Assessment of air quality within their area of jurisdiction. Monitoring of pollutant concentrations is undertaken by MCC throughout their area of jurisdiction. Recent results recorded in the vicinity of the development are shown in Table 11 and Figure 2 in Appendix- I.

Table 11 Monitoring Results

Monitoring Site		Monitored NO ₂ Concentration (µg/m ³)		
		2018	2019	2020
MA73NO	73	38.7	38.0	27.3

As shown in Table 11, annual mean NO₂ concentrations were below the AQO at both monitors in recent years. Reference should be made to Figure 2 for a map of the survey positions.

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

SMBC do not undertake PM₁₀ or PM_{2.5} monitoring within the vicinity of the development.

4.4 Background Pollutant Concentration Predictions

Predictions of NO₂, PM₁₀ and PM_{2.5} concentrations on a 1km by 1km grid basis have been produced by DEFRA. These maps cover 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: 388500, 395500. Data for this location was downloaded from the DEFRA website¹¹ for the purpose of the assessment and is summarised in Table 12.

Table 12 Background Pollutant Concentration Predictions

Pollutant	Predicted Background Pollutant Concentration (µg/m ³)	
	2019	2024
NO _x	23.52	18.94
NO ₂	16.82	13.88
PM ₁₀	12.82	12.10

As shown in Table 12, predicted background NO₂, NO_x and PM₁₀ concentrations are below the relevant AQOs and AQLV at the development site.

4.5 Sensitive Receptors

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	-

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 and Figure 3 within Appendix-I.

Table 14 Trackout Dust Sensitive Receptors

Distance from Site Boundary (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

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.

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 study did not indicate any dust generating activities in the local area

¹¹ <https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2018>.

Guidance	Comment
The likelihood of concurrent dust generating activity on nearby sites	A review of the planning portal indicated that no planning permission was granted with 500m of the site. It is therefore possible that this scheme will not result in concurrent dust generation.
Pre-existing screening between the source and the receptors	Trees and shrubs are located along the eastern and southern site boundaries. 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	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 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

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.

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

5.0 ASSESSMENT

5.1 Introduction

The proposal has the potential to expose future residents to elevated pollution levels, as well as cause adverse air quality impacts at sensitive locations during construction and operation. These factors are assessed in the following Sections.

5.2 Construction Phase

5.2.1 Step 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 both on-site and on the local road network also have the potential to result in the re-suspension of dust from haul roads and highway surfaces.

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.

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.

5.2.2 Step 2

5.2.2.1 Demolition

There are no planned demolition activities.

5.2.2.2 Earthworks

Earthworks will primarily involve excavating material, haulage, tipping and stockpiling, as well as site levelling and landscaping. The proposed development site is between 2,500m² and 10,000m². In accordance with the criteria outlined in Table 3, the magnitude of potential dust emissions from earthworks activities is therefore **medium**.

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 **medium** risk site for dust soiling as a result of earthworks.

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 **low** risk site for human health impacts as a result of earthworks.

5.2.2.3 Construction

Due to the size of the development, the total building volume is likely to be less than 25,000m³. In accordance with the criteria outlined in Table 3, the magnitude of potential dust emissions from construction is therefore **small**.

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.

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.

5.2.2.4 Trackout

Based on the site area and existing hardstanding, it is anticipated that the unpaved road length is likely to be less than 50m. In accordance with the criteria outlined in Table 3, the magnitude of potential dust emissions from trackout is therefore **small**.

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.

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.

5.2.2.5 Summary of the Risk of Dust Effects

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	Dust Risk		
	Earthworks	Construction	Trackout
Dust Soiling	Medium	Low	Low
Human Health	Low	Negligible	Negligible

As indicated in Table 17, the potential risk of dust soiling is **medium** from earthworks and **low** from construction and trackout. The potential risk of human health impacts is **low** from earthworks and **negligible** from construction and trackout.

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.

5.2.3 Step 3

The IAQM guidance¹² 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.

¹² Guidance on the Assessment of Dust from Demolition and Construction V1.1, IAQM, 2016.

Table 18 Fugitive Dust Emission Mitigation Measures

Issue	Comment
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 offsite, 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
Site preparation	Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible Fully enclose site or 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 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 or burning of waste materials
Demolition	Ensure effective water suppression is used during demolition operations Avoid explosive blasting, using appropriate manual or mechanical alternatives Bad and remove debris or damp down such material before demolition
Earthworks	Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil as soon as practicable Only remove cover in small areas during work and not all at once
Construction	Avoid scabbling (roughening of concrete surfaces) if possible Ensure sand and other aggregates are stored in bunded areas and are not

Issue	Comment
	allowed to dry out
Trackout	Use water-assisted dust sweeper on access and local roads, if required Avoid dry sweeping of large areas Ensure vehicles entering and leaving site are covered to prevent escape of materials Implement a wheel washing system, if required

5.2.4 Step 4

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 guidance¹³.

5.3 Operational Phase

5.3.1 Potential Future Exposure

At this stage, traffic data is required for air quality impact analysis. Upon receiving the traffic data, detailed air quality assessment will be undertaken to consider site suitability for the proposed end-use and assess potential impacts as a result of the scheme.

¹³ Guidance on the Assessment of Dust from Demolition and Construction V1.1, IAQM, 2016.

6.0 SUMMARY

Omnia Consulting was commissioned by Watson Homes to support a planning application for a proposed residential development at Levenshulme Road, Gorton.

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

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 IAQM¹⁴ 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**.

As discussed above, at the time of writing this report traffic data is sought to analyse impacts. Once Traffic data is received a detailed assessment will be undertaken.

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

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
DEFRA	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
DMP	Dust Management Plan
GMCA	Greater Manchester Combined Authority
MCC	Manchester City Council
SMBC	Stockport Metropolitan Borough Council
HDV	Heavy Duty Vehicle
IAQM	Institute of Air Quality Management
LA	Local Authority
LAQM	Local Air Quality Management
NGR	National Grid Reference
NO ₂	Nitrogen dioxide
NO _x	Oxides of nitrogen
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

APPENDIX I

Drawings



Legend

 Site Boundary

Title

Construction Phase Buffers

Client

Watson Group

Project

C010764

Project Name

Levenshulme Lane, Gorton

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Contains Ordnance Survey Data
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Legend

- Site Boundary
- Monitoring Location

Title

Construction Phase Buffers

Client

Watson Group

Project

C010764

Project Name

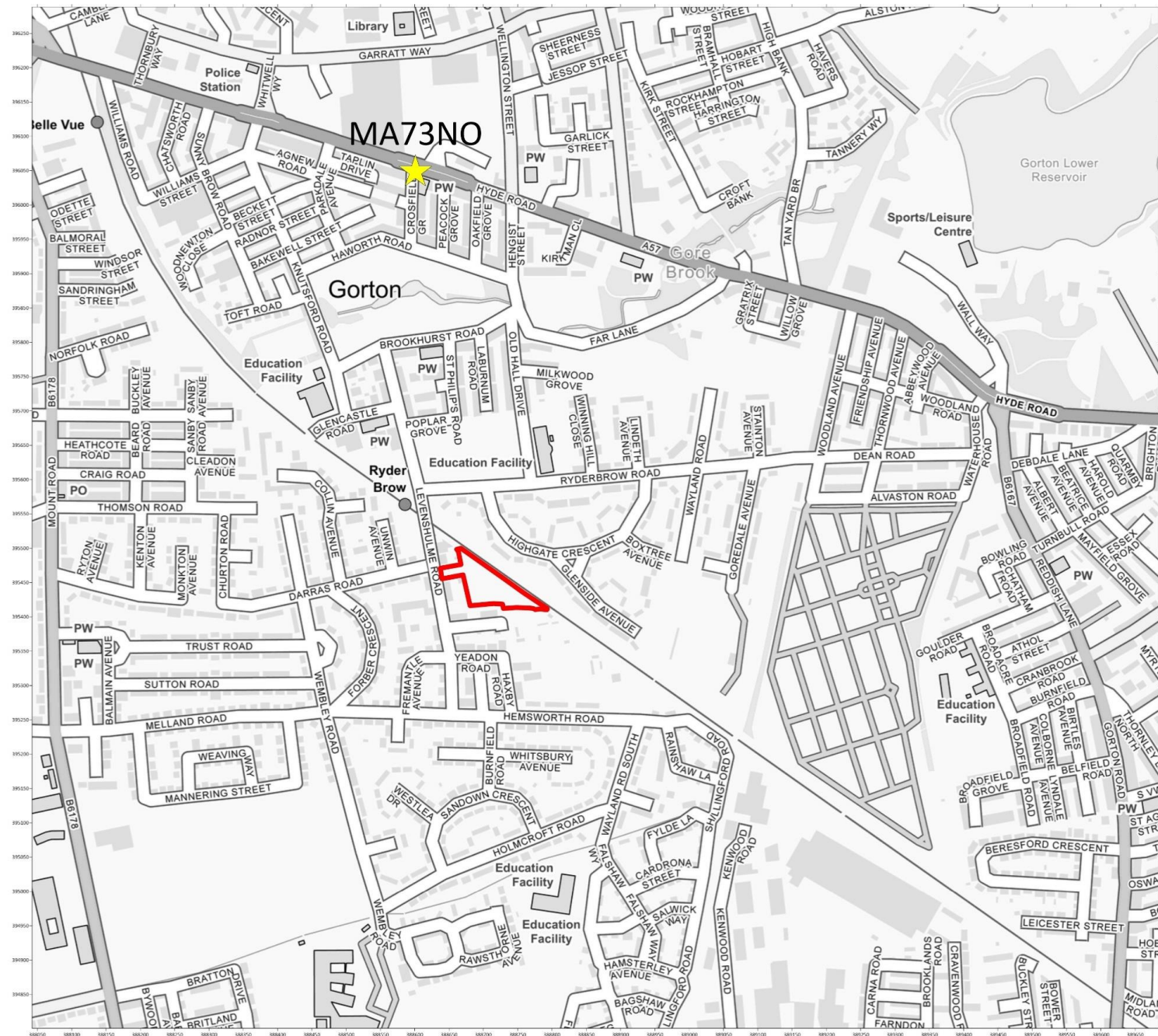
Levenshulme Lane, Gorton

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Legend

- Site Boundary
- 20 m Buffer Radius
- 50 m Buffer Radius
- 100 m Buffer Radius
- 350 m Buffer Radius

Title

Construction Phase Buffers

Client

Watson Group

Project

C010764

Project Name

Levenshulme Lane, Gorton

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AIR QUALITY ASSESMENT

LEVENSHULME RAOD- GORTON