



Azymuth Acoustics UK

Professional Acoustic Services

Air Quality Assessment

Ref: AA0239

Every Street

Land off Every Street

Bury

BL9 5BE

On behalf of

**BGI – Housing Development,
Bury Council**



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1.0 INTRODUCTION

1.1 Background

- 1.1.1 Azymuth Acoustics UK was commissioned by BGI – Housing Development to undertake an Air Quality Assessment in support of the redevelopment of an existing residential site on land off Every Street, Bury.
- 1.1.2 The proposals have the potential to cause air quality impacts at sensitive locations during construction and operation, as well as expose future residents to any existing air quality issues. As such, an Air Quality Assessment was undertaken in order to determine baseline conditions and assess potential effects associated with the scheme.

1.2 Site Location and Context

- 1.2.1 The site is located on land off Every Street, Bury, BL9 5BE, at approximate National Grid Reference (NGR): 380560, 411708. Reference should be made to Figure 1 for a site location plan.
- 1.2.2 The site is currently operational as an existing traveller site with 17 plots. The proposals comprise redevelopment of the land to provide 12 plots and associated parking and site facilities.
- 1.2.3 The development has the potential to cause air quality impacts at sensitive locations. These may include fugitive dust emissions associated with construction works and road traffic exhaust emissions from vehicles travelling to and from the site during the operational phase, as well as exposure future site users to any existing air quality issues. 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) came into force on 11th June 2010 and include Air Quality Limit Values (AQLVs) for the following pollutants:
- Nitrogen dioxide (NO₂);
 - Sulphur dioxide;
 - Lead;
 - Particulate matter with an aerodynamic diameter of less than 10µm (PM₁₀);
 - Particulate matter with an aerodynamic diameter of less than 2.5µm;
 - Benzene; and,
 - Carbon monoxide.

2.1.2 Air quality target values have also been provided for several additional pollutants.

2.1.3 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 Air Quality Objectives (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.

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

Table 1 - Air Quality Objectives

Pollutant	Air Quality Objective	
	Concentration ($\mu\text{g}/\text{m}^3$)	Averaging Period
NO ₂	40	Annual mean

Pollutant	Air Quality Objective	
	Concentration ($\mu\text{g}/\text{m}^3$)	Averaging Period
	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

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

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

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

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
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 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 Air Quality

Management Area (AQMA). For each AQMA the LA is required to produce an Air Quality Action Plan (AQAP), the objective of which is to reduce pollutant concentrations in pursuit of the AQOs.

2.3 Dust

- 2.3.1 The main requirements with respect to dust control from industrial or trade premises not regulated under the Environmental Permitting (England and Wales) Regulations (2016) and

subsequent amendments, such as construction sites, is that provided in Section 79 of Part III of the Environmental Protection Act (1990). The Act defines nuisance as:

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

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

2.4 National Planning Policy

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

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

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

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

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

[...]

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

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

2.5 National Planning Practice Guidance

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

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

2.6 Local Planning Policy

- 2.6.1 The Bury Unitary Development Plan⁵ (UDP) acts as a guide for development or protection of land in the borough and its policies and proposals currently form the basis for Bury Council's (BC's) decisions on planning applications.

- 2.6.2 The current Bury UDP was adopted on 29th August 1997. BC is now working to replace the adopted UDP with the Bury Local Plan. Until the new Local Plan is produced the UDP will continue be used to make planning decisions.

- 2.6.3 A review of the Bury UDP was undertaken in order to identify any planning policies relevant to the assessment. This indicated the following:

"EN7 - Pollution Control

The Council will seek to control environmental nuisance and minimise pollution levels associated with development by limiting the environmental impact of pollution, wherever possible, in conformity with current legislation and prescribed standards."

"EN7/1 - Atmospheric Pollution

In seeking to limit atmospheric pollution the Council will not permit development which:

- Would result in unacceptable levels of atmospheric pollution; and/or
- Is not compatible with the achievement of the Council's long term air quality standards."

- 2.6.4 The implications of the stated policies have been considered throughout this assessment.

⁵ Bury UDP, BC, 1997.



3.0 METHODOLOGY

3.1 Introduction

- 3.1.1 The proposed development has the potential to cause adverse air quality impacts during the construction and operational phases, as well as expose future residents to any existing air quality issues. These factors were assessed in accordance with the following methodology.

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 V1.1'⁶.

- 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 PM₁₀.

- 3.2.4 The assessment steps are detailed below.

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.

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

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

Magnitude	Activity	Criteria
	Earthworks	• Total site area greater than 10,000m² • Potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size) • More than 10 heavy earth moving vehicles active at any one time • Formation of bunds greater than 8m in height • More than 100,000 tonnes of material moved
	Construction	• Total building volume greater than 100,000m³ • On site concrete batching • Sandblasting



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

	Trackout	• Less than 10 HDV trips per day • Surface material with low potential for dust release • Unpaved road length less than 50m
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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
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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	Low	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 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.

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

Road Vehicle Exhaust Emissions

- 3.3.1 The development has the potential to increase concentrations of NO₂ and PM₁₀ 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'⁸ guidance 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:
- 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

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.

AQMA; or,

- Introduction of a new junction or removal of an existing junction near to relevant receptors.

3.3.3 Should these criteria not be met, then the IAQM guidance⁹ 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 guidance¹⁰.

Potential Future Exposure to Elevated Pollutant Concentrations

3.3.5 The proposed development is considered a location of relevant exposure for long and short term AQOs in accordance with the criteria provided within DEFRA guidance¹¹, 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;
- Background pollutant concentration predictions; and,
- Local monitoring results.

3.3.6 The findings were subsequently used to determine the potential for AQO exceedance 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 the predictions.

Potential Future Exposure to Fugitive Dust Emissions

3.3.7 The site is located in the vicinity of existing industrial facilities that have the potential to cause exposure of future residents to fugitive dust emissions. As such, potential impacts have been assessed in accordance with the following methodology.

3.3.8 There is no adopted guidance on the assessment of dust from industrial or commercial premises within the UK. As such, potential effects have been assessed in accordance with the following approach which has been developed based on a number of other best practice

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

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

¹¹ Local Air Quality Management Technical Guidance (TG16), DEFRA, 2021.

documents produced by the IAQM^{12 13} which refer to the Source-Pathway Receptor concept. This is the hypothetical relationship between the source of the pollutant, the pathway by which exposure might occur and the receptor that could be adversely affected. The dust impact at relevant receptors was assessed using this concept.

- 3.3.9 The first step in the assessment is to estimate the dust generating potential of the site activities. This is termed the Source Dust Potential, which takes into account the following:
- The scale (magnitude) of the release from the dust source, taking into account the effectiveness of any control or mitigation measures that are already in place. This involves judging the relative size of the release rate after mitigation and taking account of any pattern of release (e.g. intermittency).
- 3.3.10 Using the example risk ranking in Table 11, the Source Dust Potential can be categorised as **small, medium** or **large**.

Table 11 - Source Dust Potential

Source Dust Potential	Examples
Large	• Larger Environmentally Permitted processes or activities with a significant potential for dust generation • Continuous emissions • Activities with significant potential for dust generation such as earthworks, quarrying, landfilling etc. or a large number of vehicles travelling on unpaved roads
Medium	• Smaller Environmentally Permitted processes or sites with a moderate potential for dust generation • Periodic emissions • Activities with moderate potential for dust generation such as municipal waste processing, dusty material storage etc.
Small	• Falls below Environmental Permit Part B threshold or sites with limited potential for dust generation • Occasional emissions • Activities with limited potential for dust generation such as handling and processing of solid materials, metal storage etc.

- 3.3.11 The next step is to estimate the effectiveness of the pollutant pathway as the transport mechanism for dust through the air to the receptor, versus the dilution/dispersion in the atmosphere. Any factor that increases dilution and dispersion of the plume as it travels from

¹² Guidance on the Assessment of Odour for Planning V1.1, IAQM, 2018.

¹³ Guidance on the Assessment of Mineral Dust Impacts for Planning V1.1, IAQM, 2016.

source to receptor will reduce the concentration at the end point, and hence reduce exposure. Important factors for consideration are:

- The distance between sensitive receptors and the dust source;
- Whether receptors are downwind with respect to the prevailing wind direction.
Significant episodes can occur during stable atmospheric conditions with low wind speed, which gives poor dispersion and dilution. Receptors close to the source in all directions can be affected under these conditions. When circumstances are not calm, it will be the downwind receptors that are affected. As such, receptors that are downwind with respect to the prevailing wind direction tend to be at higher risk of dust impact; and,
- The topography and terrain, as well as any screening, between the source and receptor. The presence of topographical features such as hills and valleys, or urban terrain features such as buildings, as well as screening such as walls or fencing, can affect air flow and therefore increase, or inhibit, dispersion and dilution.

3.3.12 Using the example risk ranking in Table 12, the pollutant pathway from source to receptor can be categorised as **ineffective**, **moderately effective**, or **highly effective**.

Table 12 - Dust Pathway Effectiveness

Pathway Effectiveness	Examples
Highly effective	Distance - receptor is adjacent to the source/site Direction - high frequency of winds from source to receptor, or, qualitatively, receptors downwind of source with respect to prevailing wind Effectiveness of dispersion/dilution - no screening between source and receptor
Moderately effective	Distance - receptor is local to the source Effectiveness of dispersion/dilution - some screening between source and receptor, though may not be solid
Ineffective	Distance - receptor is remote from the source Direction - low frequency of winds from source to receptor, or, qualitatively, receptors upwind of source with respect to prevailing wind Effectiveness of dispersion/dilution - solid screening between source and receptor

3.3.13 Different land uses display varying sensitivities to potential dust impacts. These are defined in Table 4 and have been used in lieu of other guidance as outlined above.

3.3.14 The estimates of Source Dust Potential and Pathway Effectiveness are considered together to predict the risk of dust impact at the receptor location, as shown by the matrix in Table 13.

Table 13 - Risk of Dust Impact

Pathway Effectiveness	Source Dust Potential		
	Small	Medium	Large
Highly effective	Low	Medium	High
Moderately effective	Negligible	Low	Medium
Ineffective	Negligible	Negligible	Low

3.3.15 The final step is to determine the significance of dust effect at the specified receptor location through the interaction between sensitivity and risk, as outlined in Table 14.

Table 14 - Significance of Dust Effect

Risk of Dust Exposure	Receptor Sensitivity		
	Low	Medium	High
High	Slight	Moderate	Substantial
Medium	Negligible	Slight	Moderate
Low	Negligible	Negligible	Slight
Negligible	Negligible	Negligible	Negligible

3.3.16 The IAQM guidance¹⁴¹⁵ states that an assessment must reach a conclusion on the likely significance of the predicted impact. Where the overall effect is **moderate** or **substantial**, the effect is likely to be considered **significant**, whilst if the effect is **slight** or **negligible**,

¹⁴ Guidance on the Assessment of Odour for Planning v1.1, IAQM, 2018.

¹⁵ Guidance on the Assessment of Mineral Dust Impacts for Planning V1.1, IAQM, 2016.

the impact is likely to be considered **not significant**. It should be noted that this is a binary judgement of either it is **significant** or it is **not significant**. This has been considered to determine the overall significance of potential effects at the proposed development site.

4.0 BASELINE

4.1 Introduction

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

4.2 Local Air Quality Management

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

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

- 4.2.2 The site is located approximately 300m west of the AQMA. As such, there is the potential for vehicles travelling to and from the site to increase pollution levels in this sensitive area.

This has been considered throughout the assessment.

- 4.2.3 BC 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

- 4.3.1 Monitoring of pollutant concentrations is undertaken by BC throughout their area of jurisdiction. Recent results recorded in the vicinity of the development are shown in Table 15. Exceedances of the AQO are shown in **bold**.

Table 15 - Monitoring Results

Monitoring Site	Monitored NO ₂ Concentration (µg/m ³)		
	2017	2018	2019

BU8NO	Walmersley Road	28.4	28.2	34.3
BU11NO	Moorgate Bury ^(a)	-	-	41.3

Note: (a) Monitor commissioned in 2019.

4.3.2 As shown in Table 15, annual mean NO₂ concentrations were above the AQO at the BU11NO monitoring position during 2019. As the monitor is located at a roadside position within an AQMA, elevated levels would be expected. Concentrations were below the AQO at the BU8NO monitor during recent years. Reference should be made to Figure 2 for a map of the survey positions.

4.3.3 BC do not undertake monitoring of PM₁₀ concentrations in the vicinity of the site.

4.4 Background Pollutant Concentrations

4.4.1 Predictions of background pollutant concentrations on a 1km by 1km grid basis have been produced by DEFRA for the entire of the UK to assist LAs in their Review and

Assessment of air quality. The proposed development site is located in grid square NGR: 380500, 411500. Data for this location was downloaded from the DEFRA website¹⁶ for the purpose of this assessment and is summarised in Table 16.

Table 16 - Background Pollutant Concentrations

Pollutant	Predicted 2021 Background Pollutant Concentration (µg/m ³)
NO ₂	14.81
PM ₁₀	11.97

4.4.2 As shown in Table 16, predicted background concentrations are below the relevant AQOs at the development site.

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.

4.5.2 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 17.

¹⁶ <https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2018>.

Table 17 - Demolition, Earthworks and Construction Dust Sensitive Receptors

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

- 4.5.3 Receptors sensitive to potential dust impacts from trackout were identified from a desktop study of the area up to 50m from the road network within 500m of the site access. These are summarised in Table 18.

Table 18 - 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

- 4.5.4 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.
- 4.5.5 A number of additional factors have been considered when determining the sensitivity of the surrounding area. These are summarised in Table 19.

Table 19 - Additional Area Sensitivity Factors to Potential Dust Impacts

Guidance	Comment
Whether there is any history of dust generating activities in the area	The desk top study indicated the presence of several industrial and waste facilities within the vicinity of the site. As such, it is possible that there has been a history of dust generation from these premises
The likelihood of concurrent dust generating activity on nearby sites	A review of the planning portal did not indicate any additional development proposals likely to result in concurrent dust generation in the vicinity of the site

Pre-existing screening between the source and the receptors	Trees and shrubs are located along the eastern and western development 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 as to the duration of the construction phase. However, it is possible 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

4.5.6 Dust sensitive receptors within 350m of the development site include places of work, residential dwellings and educational facilities. These are considered to be of **medium** and **high** sensitivity in accordance with the criteria shown in Table 4. All receptors were therefore classified as **high** sensitivity to provide a worst case assessment.

4.5.7 The sensitivity of the receiving environment to specific potential dust impacts, based on the criteria shown in Section 3.2, is shown in Table 20.

Table 20 - 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

4.5.8 The potential risk of dust impacts at the identified receptors is considered in Section 5.

4.6 Potential Dust Sources

- 4.6.1 A study was undertaken in order to identify any potential sources of dust in the vicinity of the site that required specific consideration during the assessment. The identified sources and associated emissions are summarised in Table 21.

Table 21 - Potential Fugitive Dust Emission Sources

Source		Distance from Site (m)	Description of Activities	Potential Emissions
1	Industrial facility ^(a)	10	Breakers yard	Dust from workshop activities
2	SUEZ Recycling and Recovery UK	15	Household waste Recycling facility	Dust from processing of waste
3	Bettamix Concrete	20	Concrete supplier	Dust from storage and movement of concrete and other aggregate
4	Diggers Bury	120	Hire and sales of construction machinery and material processing	Dust from storage and movement of material
5	Abbey Skips Waste Transfer Station	120	Aggregates processing	Dust from storage and movement of materials and other aggregate

Note: (a) Specific operator could not be identified

- 4.6.2 As shown in Table 21, there are several potential emission sources within the vicinity of the site. Reference should be made to Figure 3 for a map of the facilities.

4.7 Meteorological Conditions

- 4.7.1 The potential for atmospheric emissions to impact at sensitive locations depends significantly on the meteorology, particularly wind direction, during emissions. In order to consider prevailing conditions at the site, review of historical weather data was undertaken. The closest observation station to the development is Manchester Airport meteorological station at NGR: 381792, 384116, which is approximately 27.6km south of the boundary. It is considered that conditions are likely to be reasonably similar over a distance of this magnitude and the information is a suitable source of data for an assessment of this nature.
- 4.7.2 Meteorological data was obtained from Manchester Airport meteorological station over the period 1st January 2015 to 31st December 2019 (inclusive). This is summarised in Table 22.

Reference should be made to Figure 4 for a wind rose of the meteorological data. The sector with the highest frequency of winds is shown in **bold**.

Table 22 - Wind Frequency Data

Wind Direction (°)	Frequency of Wind (%)
345 - 15	1.74
15 - 45	3.52
45 - 75	5.94
75 - 105	6.11
105 - 135	5.15
135 - 165	8.08
165 - 195	17.99
195 - 225	14.07
225 - 255	9.65
255 - 285	11.31
285 - 315	9.56
315 - 345	3.55
Sub-Total	96.66
Calms	1.93
Wind Direction (°)	Frequency of Wind (%)
Missing/Incomplete	1.41

- 4.7.3 As shown in Table 22, the prevailing wind direction at the site is from the south. Winds from the north are relatively infrequent, which is indicative of conditions throughout the majority of the UK.
- 4.7.4 All meteorological data used in the assessment was provided by Atmospheric Dispersion Modelling Ltd, which is an established distributor of meteorological data within the UK.



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 at the site. These factors are considered in the following Sections.

5.2 Construction Phase Assessment

Step 1

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

Step 2

Demolition

- 5.2.3 Demolition will be undertaken at the start of the construction phase and will involve clearance of the existing building on site. It is estimated that the building volume to be demolished is less than 20,000m³. In accordance with the criteria outlined in Table 3, the magnitude of potential dust emissions from demolition is therefore **small**.
- 5.2.4 Table 20 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.
- 5.2.5 Table 20 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

- 5.2.6 Earthworks will primarily involve excavating material, haulage, tipping and stockpiling, as well as site levelling and landscaping. The proposed development site covers an area of between 2,500m³ and 10,000m². In accordance with the criteria outlined in Table 3, the magnitude of potential dust emissions from earthworks is therefore **medium**.

5.2.7 Table 20 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.

5.2.8 Table 20 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.

Construction

5.2.9 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**.

5.2.10 Table 20 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.

5.2.11 Table 20 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

5.2.12 Based on the site area 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**.

5.2.13 Table 20 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.

5.2.14 Table 20 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

5.2.15 A summary of the risk from each dust generating activity is provided in Table 23.

Table 23 - Summary of Potential Unmitigated Dust Risks

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

5.2.16 As indicated in Table 23, the potential risk of dust soiling is **medium** from demolition and earthworks and **low** from construction and trackout. The potential risk of human health impacts is **negligible** from demolition, construction and trackout and **low** from earthworks.

5.2.17 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

5.2.18 The IAQM guidance¹⁷ 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 24. These may be reviewed prior to the commencement of construction works and incorporated into a Construction Environmental Management Plan or similar if required by the LA.

Table 24 - Fugitive Dust Emission Mitigation Measures

Issue	Control Measure
Communications	- Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager - Display the head or regional office contact information

¹⁷ Guidance on the Assessment of Dust from Demolition and Construction V1.1, IAQM, 2016.

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, 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 - Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site - Fully enclose 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 - 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

Issue	Control Measure
Operating vehicle/machinery and sustainable travel	- Ensure all vehicles switch off engines when stationary - no idling vehicles - Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable
Operations	- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques - Ensure an adequate water supply on the site for effective dust suppression, using non-potable water where possible and appropriate - Use enclosed chutes and conveyors and covered skips - Minimise drop heights and use fine water sprays wherever appropriate - Ensure equipment is available to clean any dry spillages, and clean up spillages as soon as reasonably practicable using wet cleaning methods
Waste management	No 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
Construction	• Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out
Trackout	• Use water-assisted dust sweeper on access and local roads, if required • Avoid dry sweeping of large areas • Ensure vehicles entering and leaving site are covered to prevent escape of materials

Step 4

- 5.2.19 Assuming the relevant mitigation measures outlined in Table 24 are implemented, the residual impact from all dust generating activities is predicted to be **not significant**, in accordance with the IAQM guidance¹⁸.

5.3 Operational Phase Assessment

Road Vehicle Exhaust Emissions

- 5.3.1 Any vehicle movements associated with the proposals will generate exhaust emissions on the local and regional road networks. Information provided by the applicant indicated that the development is predicted to generate 88 daily vehicle movements.
- 5.3.2 Based on the above information, the proposals are not predicted to result in an increase of LDV flows of more than 500 AADT on any individual road link or 100 AADT within an AQMA, include significant highway realignment or the introduction of a junction and there will not be a requirement for more than 100 HDV deliveries per day. As such, potential air quality impacts associated with operational phase road vehicle exhaust emissions are predicted to be **not significant**, in accordance with the IAQM¹⁹ screening criteria shown in Section 4.

Potential Future Exposure to Elevated Pollutant Concentrations

- 5.3.3 The proposed development includes land use sensitive to long term and short term pollutant concentrations. Existing conditions at the site are therefore considered in the following Sections.

AQMA Designation

- 5.3.4 The site is located approximately 300m west of the BC AQMA. As the site is currently used for residential use and also located within close proximity to other residential areas and an education facility, it would be anticipated that there would be a need for an AQMA to cover nearby housing and schools if exceedances of the AQOs had been recorded or predicted

¹⁸ Guidance on the Assessment of Dust from Demolition and Construction V1.1, IAQM, 2016.

¹⁹ Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.

locally. As this is not the case, it is considered that exceedances 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 25.

Table 25 - Significant Pollution Sources

Source	Distance to Site (m)	Comment
Every Street	Adjacent	Every Street is an unclassified road and traffic counts have not been undertaken for the area. However, similar roads within Bury have low traffic levels, with an AADT flow of 5,483 and HDV proportion of fleet of 1.99% during 2009 ^(a) (obtained from Bridge Street)

Note: (a) Source: Department for Transport, <https://roadtraffic.dft.gov.uk/manualcountpoints/930684>

- 5.3.6 As shown in Table 25, there is one identified pollutant source within the vicinity of the site. Every Street is minor in nature and as such, it is unlikely to contribute significantly to pollution levels above background at the proposed development.

Local Monitoring Results

- 5.3.7 As summarised in Table 15, there are two monitors within the vicinity of the development. Exceedances of the AQO were recorded at BU11NO during 2019. This is located on the B6222 Bell Lane, adjacent to the A56 junction with the A58 within Bury town centre. As identified previously, the development is located on Every Street, which is minor in nature. It is therefore considered that these locations are not comparable and pollutant concentrations would be expected to be lower at the site.
- 5.3.8 The BU8NO monitor is located on the A56 Walmersley Road. Recorded annual mean NO₂ concentrations were below the AQO in recent years. The proposed site is located 300m from the A56 Walmersley Road. As outlined in DEFRA guidance²⁰, pollution levels decrease with distance from sources such as roads. It is therefore anticipated that concentrations at the development would be lower than the monitoring results and therefore compliant with the relevant AQO.
- 5.3.9 Based on the above, exceedances of the relevant AQOs are considered unlikely at the development location.

²⁰ Local Air Quality Management Technical Guidance (TG16), DEFRA, 2021.

Background Pollutant Concentration Predictions

- 5.3.10 As shown in Table 16, predicted background pollutant concentrations for the grid square containing the site are predicted to be well below the annual mean AQOs for NO₂ and PM₁₀.
- 5.3.11 Based on the predicted background concentrations, exceedances 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 AQOs at the proposed development site for the following reasons:
- The site is not located within an AQMA;
 - The site is distanced from major pollution sources;
 - Analysis of local monitoring results in the context of the site location and survey positions has indicated likely compliance with the AQO for NO₂ at the development; and;
 - Predicted background concentrations are well below the relevant AQOs.
- 5.3.13 Based on the assessment results, exposure of future residents to exceedances of the AQOs is not considered likely. As such, the site is considered suitable for the proposed use from an air quality perspective.

Potential Future Exposure to Fugitive Dust Emissions

- 5.3.14 The development has the potential to expose residents to any existing dust at the site. The associated risk was therefore assessed in accordance with the stated methodology.
- 5.3.15 The first step of the assessment was to classify the magnitude of dust impact for each source identified in Table 21. This is summarised in Table 26.

Table 26 - Source Dust Potential

Source Dust Potential		Source Dust Potential	Justification
1	Industrial facility	Small	- The facility is not regulated under the Environmental Permitting Regulations - Potential for occasional emissions when certain activities are undertaken - Activities with limited potential for dust generation
2	SUEZ Recycling and Recovery UK	Medium	- The facility is regulated by the Environment Agency (EA) in accordance with an Environmental Permit (Ref: GB3907KB/T001) - Activities include processing of waste take place within a dedicated processing building which provides a high level of containment and reduces the potential for release of dust emissions
3	Bettamix Concrete	Medium	- Operations are controlled under an Environmental Permit regulated by BC (Ref: LAPPC07-04) - Potential for occasional emissions when certain activities are undertaken during working hours (Monday to Friday, 8am - 4pm) - Activities with potential for dust generation
4	Diggers Bury	Small	- The facility is not regulated under the Environmental Permitting Regulations - Potential for occasional emissions when certain activities are undertaken during working hours - Activities with limited potential for dust generation
5	Abbey Skips Waste Transfer Station	Medium	- The facility is regulated by the EA in accordance with an Environmental Permit (Ref: EMB3404MT/A001) - Activities with limited potential for dust generation

5.3.16 The pathway effectiveness was subsequently defined between the source and the development based on the distance from the facility boundary and the prevailing wind direction in relation to the site. This is summarised in Table 27.

Table 27 - Pathway Effectiveness

Source		Pathway Effectiveness	Justification
1	Industrial facility	Moderately effective	- The receptor is adjacent to the source - There are trees on the western boundary of the facility, these will act as a barrier between emission sources and receptors - Low frequency of winds from source to receptor (5.15%)
2	SUEZ Recycling and Recovery UK	Ineffective	- The receptor is adjacent to the source - Emissions are contained within the building - There are trees on the eastern boundary of the facility, these will act as a barrier between emission sources and receptors - High frequency of winds from source to receptor (35.80%)
3	Bettamix Concrete	Moderately effective	- The receptor is adjacent to the source - Low frequency of winds from source to receptor (15.56%)
4	Diggers Bury	Moderately effective	- The receptor is local to the source - High frequency of winds from source to receptor (53.02%)
5	Abbey Skips Waste Transfer Station	Moderately effective	- The receptor is local to the source - There are trees on the eastern boundary of the facility, there may act as a barrier between emissions sources and receptors - High frequency of winds from source to receptor (66.13%)

5.3.17 The proposals include residential land-use and is therefore considered to be of **high** sensitivity to potential dust impacts.

5.3.18 The above information has been used to assess dust risk from each source. This is summarised in Table 28

Table 28 - Dust Risk Assessment.

Source		Source Emissions Potential	Pathway Effectiveness	Exposure Risk	Sensitivity	Effect Significance
1	Industrial facility	Small	Moderately effective	Negligible	High	Negligible
2	SUEZ Recycling and Recovery UK	Medium	Ineffective	Negligible	High	Negligible
3	Bettamix Concrete	Medium	Moderately effective	Low	High	Slight
4	Diggers Bury	Small	Moderately effective	Negligible	High	Negligible
5	Abbey Skips Waste Transfer Station	Medium	Moderately effective	Low	High	Slight

5.3.19 As shown in Table 28, the predicted dust effect significance was **slight** as a result of Bettamix Concrete and Abbeys Skips Waste Transfer Station and **negligible** from the remaining sources.

5.3.20 The IAQM guidance states that only if the impact is greater than **slight**, the effect is considered **significant**. As such, impacts are considered not significant, in accordance with the stated methodology.

6.0 CONCLUSION

6.1.1 Azymuth Acoustics UK was commissioned by BGI – Housing Development to undertake an Air Quality Assessment in support of the redevelopment of an existing residential site on land off Every Street, Bury.

6.1.2 The proposals have the potential to cause air quality impacts at sensitive locations during construction and operation, as well as expose future residents to any existing air quality issues. As such, an Air Quality Assessment was undertaken in order to determine baseline conditions and assess potential effects associated with the scheme.



- 6.1.3 During the construction phase of the development there is the potential for air quality impacts as a result of fugitive dust emissions from the site. These were assessed in accordance with the IAQM methodology. Assuming good practice dust control measures are implemented, the residual significance of potential air quality impacts from dust generated by demolition, earthworks, construction and trackout activities was predicted to be **not significant**.
- 6.1.4 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 against the screening criteria provided within the IAQM²¹ guidance. Due to the low number of potential vehicle trips produced by the scheme, impacts were predicted to be **not significant**.
- 6.1.5 The potential for the exposure of future residents to poor air quality was assessed based on the AQMA designation, proximity of pollution sources to the site, local monitoring results and background pollutant level predictions. This indicated that concentrations of NO₂ and PM₁₀ are likely to be below the relevant AQOs at the development location. As such, the site is considered suitable for the proposed use from an air quality perspective.
- 6.1.6 The risk of potential dust effects at the development was assessed using a sourcepathway-receptor approach. This included consideration of the Source Dust Potential, pathway effectiveness and receptor sensitivity. The results of the assessment indicated the predicted dust effect significance was **slight** as a result of emissions from Bettamix Concrete and Abbeys Skips Waste Transfer Station and **negligible** from the remaining sources. As such, the overall dust effects are considered to be **not significant**.
- 6.1.7 Based on the assessment results, air quality factors are not considered a constraint to planning consent for the development.

²¹ Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.

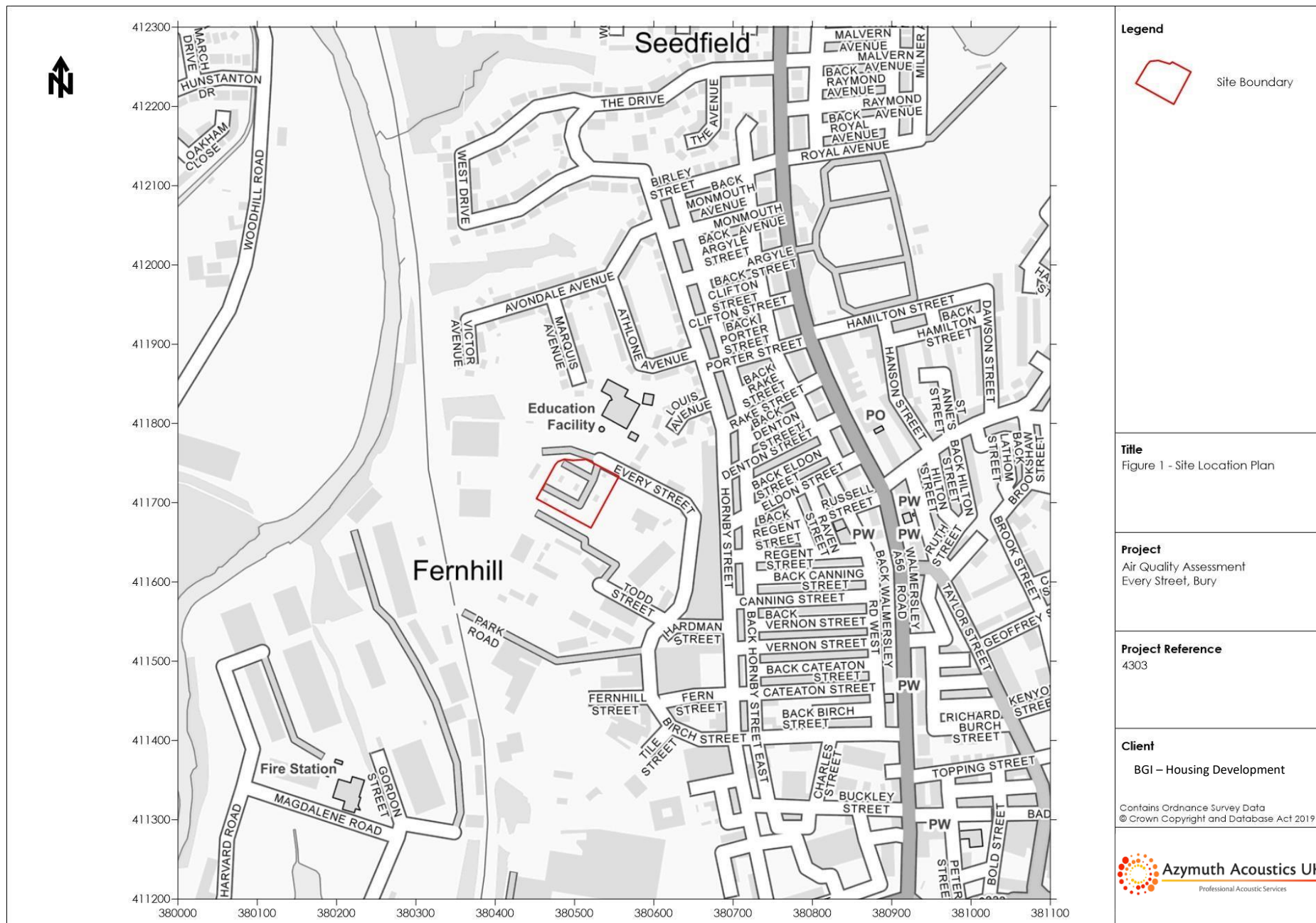


7.0 ABBREVIATIONS

AADT	Annual Average Daily Traffic
AQAP	Air Quality Action Plan
AQLV	Air Quality Limit Value
AQMA	Air Quality Management Area
AQO	Air Quality Objective
AQS	Air Quality Strategy
BC	Bury Council
DEFRA	Department for Environment, Food and Rural Affairs
EA	Environment Agency
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
NGR	National Grid Reference
NO ₂	Nitrogen dioxide
NPPF	National Planning Policy Framework
NPPG	Annual Average Daily Traffic
PM ₁₀	Air Quality Action Plan



FIGURES





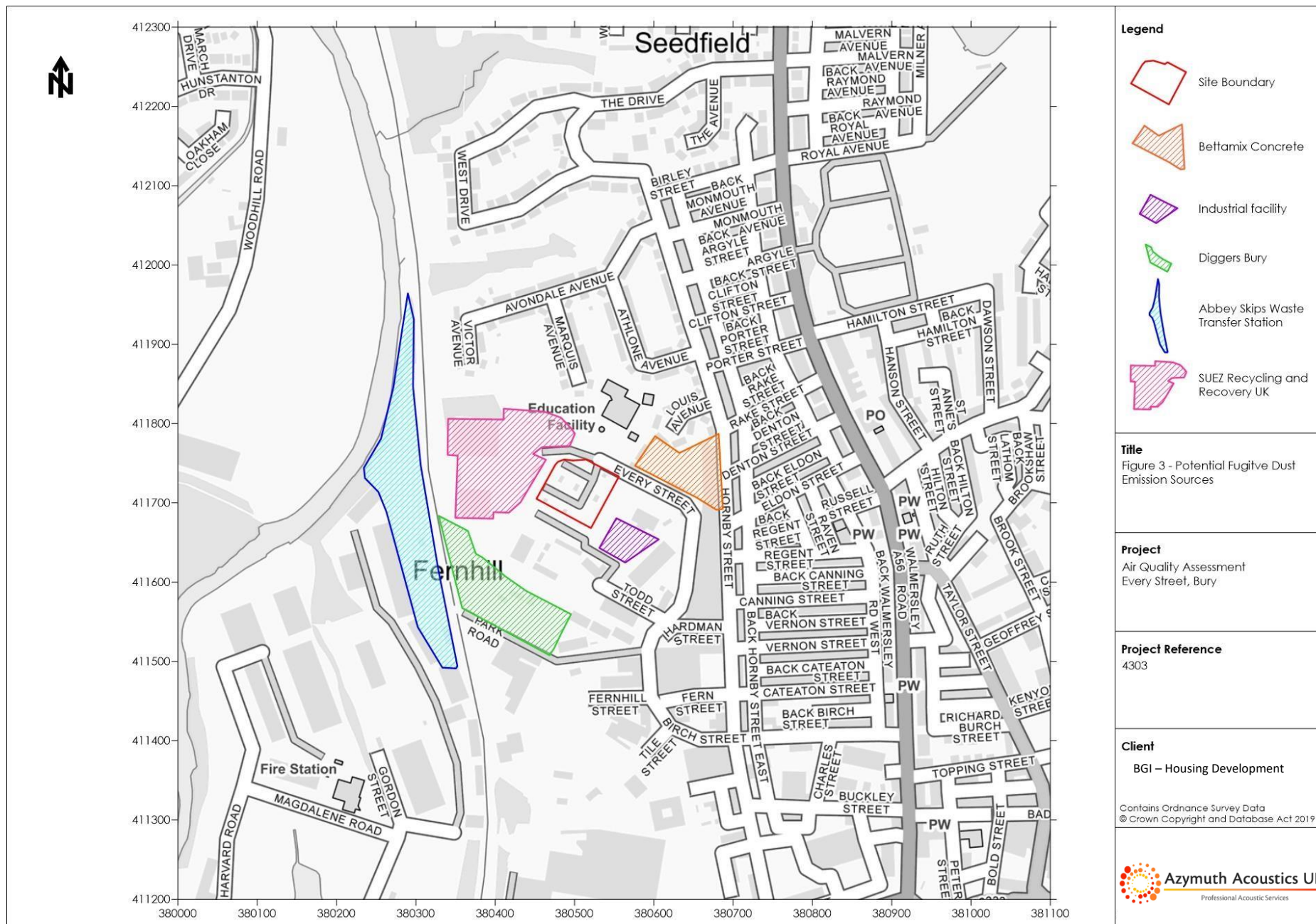
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Figure 2 - Monitoring Locations

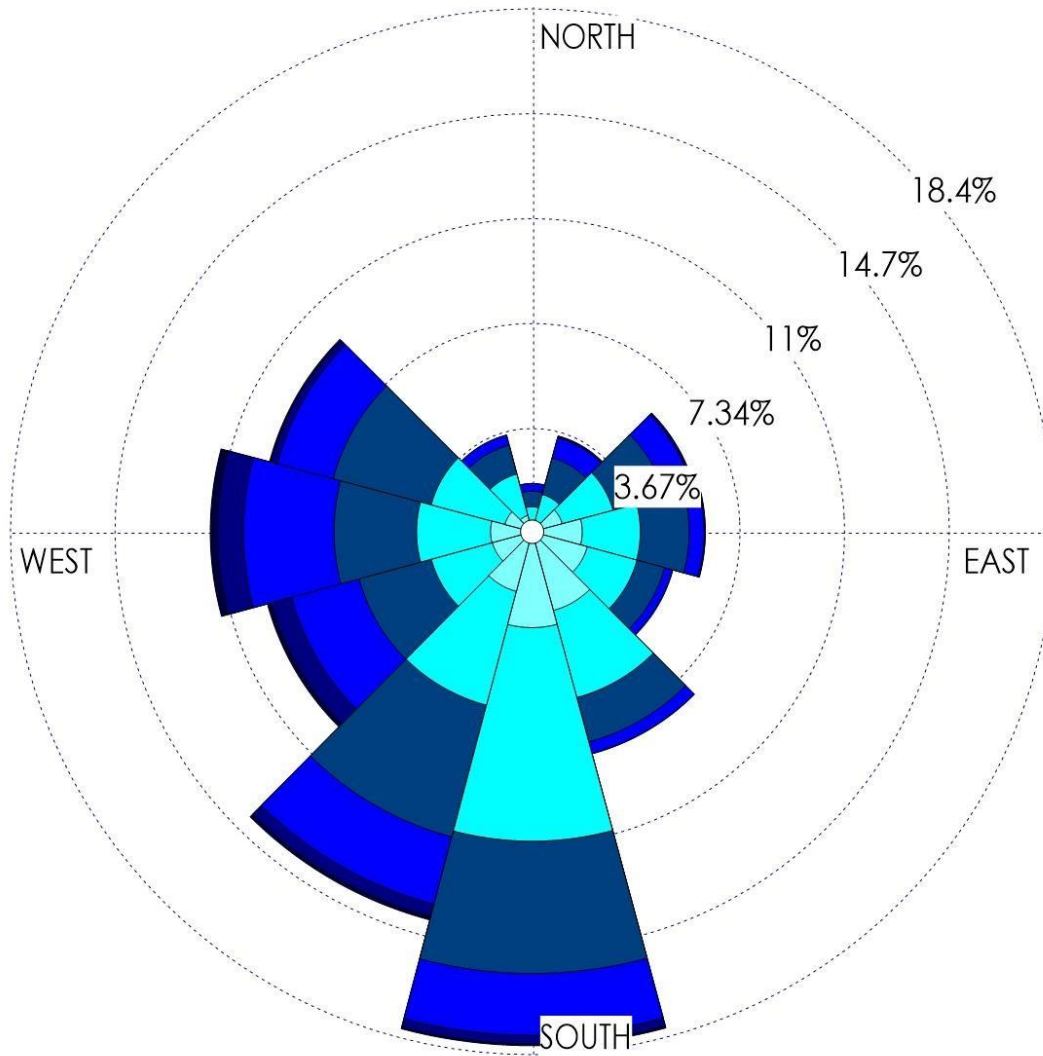
Project
Air Quality Assessment
Every Street, Bury

Project Reference
4303

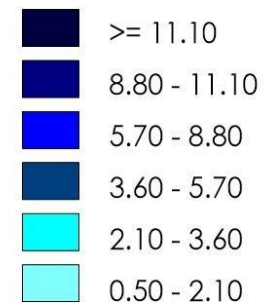
Client
BGI – Housing Development

Contains Ordnance Survey Data
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WIND SPEED
(m/s)



Calms: 1.93%

Legend

Title

Figure 4 - Wind Rose of 2015 to 2019
Manchester Airport Meteorological Data

Project

Air Quality Assessment
Every Street, Bury

Project Reference

4303

Client

BGI – Housing Development

Contains Ordnance Survey Data
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