

**Air Quality Assessment**  
**Drake Street, Rochdale**

**Client: Cassel & Fletcher**

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## **Executive Summary**

Redmore Environmental Ltd was commissioned by Cassel & Fletcher to undertake an Air Quality Assessment in support of a planning application for a residential-led development at 42-46 Drake Street, Rochdale.

An Air Quality Assessment was undertaken to:

- Assess potential impacts associated with fugitive dust emissions during the construction phase of the proposed development;
- Assess risk of exposure of future residents to existing air quality issues;
- Assess potential impacts associated with road transport emissions during the operational phase of the proposed development; and,
- Identify any requirement for mitigation measures.

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 the identified site-specific control measures would provide suitable mitigation for a development of this size and nature and reduce potential impacts to an acceptable level.

The potential for the exposure of future residents to poor air quality was assessed based on the findings of a desk top study. This indicated that pollutant concentrations are likely to be below the relevant criteria at the development location.

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

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

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## **Appendix**

Appendix 1 - Curricula Vitae

## **1.0 INTRODUCTION**

### **1.1 Instruction**

- 1.1.1 Redmore Environmental Ltd was commissioned by Cassel & Fletcher to undertake an Air Quality Assessment in support of a planning application for a residential-led development at 42-46 Drake Street, Rochdale.

### **1.2 Site Location and Context**

- 1.2.1 The site is located at 42-46 Drake Street, Rochdale, OL16 1NU, at approximate National Grid Reference (NGR): 389816, 413287. The relevant Local Authority (LA) is Rochdale Metropolitan Borough Council (RMBC). Reference should be made to Figure 1 for a map of the site and surrounding area.
- 1.2.2 The proposals comprise the construction of a ground floor commercial unit and 33 residential units from ground floor level and above.

### **1.3 Assessment Scope**

- 1.3.1 The development proposals have the potential to cause air quality impacts. As such, an Air Quality Assessment was undertaken to:
- Assess potential impacts associated with fugitive dust emissions during the construction phase of the proposed development;
  - Assess risk of exposure of future residents to existing air quality issues;
  - Assess potential impacts associated with road transport emissions during the operational phase of the proposed development; and,
  - Identify any requirement for mitigation measures.
- 1.3.2 This is detailed in the following report.

## **2.0 LEGISLATION AND POLICY**

### **2.1 Legislation**

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

- Nitrogen dioxide (NO<sub>2</sub>);
- Sulphur dioxide;
- Lead;
- Particulate matter with an aerodynamic diameter of less than 10µm (PM<sub>10</sub>);
- Particulate matter with an aerodynamic diameter of less than 2.5µm (PM<sub>2.5</sub>);
- Benzene; and,
- Carbon monoxide.

2.1.2 Air Quality Target Values have also been provided for several additional pollutants. It should be noted that the AQLV for PM<sub>2.5</sub> stated in the Air Quality Standards Regulations (2010) was amended in the Environment (Miscellaneous Amendments) (EU Exit) Regulations (2020).

2.1.3 The Air Quality Strategy (AQS) was produced by the Department for Environment, Food and Rural Affairs (DEFRA) and published on 28<sup>th</sup> April 2023<sup>1</sup>. The document contains standards, objectives and measures for improving ambient air quality, including a number of Air Quality Objectives (AQOs). These are maximum ambient pollutant concentrations that are not to be exceeded either without exception or with a permitted number of exceedences over a specified timescale. These are generally in line with the AQLVs, although the requirements for the determination of compliance vary.

2.1.4 The Environmental Improvement Plan 2023<sup>2</sup> was published in January 2023, providing long term and Interim Targets in order to reduce population exposure to PM<sub>2.5</sub>. The concentration target for 2040 was subsequently adopted in the Environmental Targets (Fine Particulate Matter) (England) Regulations (2023).

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<sup>1</sup> AQS: Framework for Local Authority Delivery, DEFRA, 2023.

<sup>2</sup> Environmental Improvement Plan 2023, DEFRA, 2023.

2.1.5 Table 1 presents the AQOs and Interim Target for pollutants considered within this assessment.

**Table 1 Air Quality Objectives/Interim Target**

| Pollutant         | Air Quality Objective/Interim Target       |                                                                      |
|-------------------|--------------------------------------------|----------------------------------------------------------------------|
|                   | Concentration ( $\mu\text{g}/\text{m}^3$ ) | Averaging Period                                                     |
| NO <sub>2</sub>   | 40                                         | Annual mean                                                          |
|                   | 200                                        | 1-hour mean, not to be exceeded on more than 18 occasions per annum  |
| PM <sub>10</sub>  | 40                                         | Annual mean                                                          |
|                   | 50                                         | 24-hour mean, not to be exceeded on more than 35 occasions per annum |
| PM <sub>2.5</sub> | 12 <sup>(a)</sup>                          | Annual mean                                                          |

Note: (a) Interim Target to be achieved by end of January 2028.

2.1.6 Table 2 summarises the advice provided in DEFRA guidance<sup>3</sup> 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<br><br>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<br><br>Hotels, unless people live there as their permanent residence<br><br>Gardens of residential properties<br><br>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<br><br>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                                                                                                                                                                                                                                 |

<sup>3</sup> Local Air Quality Management Technical Guidance (TG22), DEFRA, 2022.

| Averaging Period | Objective Should Apply At                                                                                                                                                                                                                                                                                                                                                                                                                                      | Objective Should Not Apply At                                                |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 1-hour mean      | <p>All locations where the annual mean and 24 and 8-hour mean objectives apply. Kerbside sites (for example, pavements of busy shopping streets)</p> <p>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</p> <p>Any outdoor locations where members of the public might reasonably be expected to spend one hour or longer</p> | Kerbside sites where the public would not be expected to have regular access |

## 2.2 **Local Air Quality Management**

2.2.1 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, the objective of which is to reduce pollutant concentrations in pursuit of the AQOs.

## 2.3 **Dust**

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

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

2.3.2 Enforcement of the Act, in regard to nuisance, is currently under the jurisdiction of the local Environmental Health Department, whose officers are deemed to provide an independent evaluation of nuisance. If the LA is satisfied that a statutory nuisance exists, or is likely to occur or happen again, it must serve an Abatement Notice under Part III of

the Environmental Protection Act (1990). The only defence is to show that the process to which the nuisance has been attributed and its operation are being controlled according to best practicable means.

## **2.4 National Planning Policy**

2.4.1 The revised National Planning Policy Framework<sup>4</sup> (NPPF) was published in December 2023 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 achievements 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, or 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 [...]"

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<sup>4</sup> NPPF, Ministry of Housing, Communities and Local Government, 2023.

- 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 Guidance<sup>5</sup> (NPPG) web-based resource was launched by the Department for Communities and Local Government on 6<sup>th</sup> March 2014 and updated on 1<sup>st</sup> November 2019 to support the NPPF and make it more accessible. The air quality pages are summarised under the following headings:

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

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<sup>5</sup> <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 Rochdale Adopted Core Strategy<sup>6</sup> was adopted by RMBC on 19<sup>th</sup> October 2016. Review of the document indicated the following policies of relevance to this report:

"Policy G9 - Reducing the Impact of Pollution, Contamination and Land Instability

We will reduce all forms of pollution, contamination and land instability in the borough, by:

- a. Focusing on measures that reduce air pollution in Air Quality Management Areas, and other areas where pollution levels are unacceptable, particularly around motorways and main roads;
  - b. Requiring that development does not have impacts that lead to an unacceptable increase in air, water, noise, light or other pollution;
  - c. Ensuring sensitive new developments such as housing, schools and hospitals are not adversely affected by existing sources of pollution such as roads and certain types of industry;
  - d. Requiring a Low Emissions Strategy (LES) where development requires a Transport Assessment, and in other circumstances as appropriate;
- [...]
- g. Using planning conditions or obligations to control pollution from new development, or the impact of pollution on new development."

"Policy DM1 - General Development Requirements

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<sup>6</sup> Rochdale Adopted Core Strategy, RMBC, 2016.

All development proposals, including changes of use of land and buildings, extensions and alterations, will be expected to demonstrate that they:

[...]

d. Mitigate against any impacts due to noise, air, dust, light and odour pollution, traffic generation or inadequate access, where such mitigation is identified as being necessary;

[...]

f. Do not have an adverse impact on health, through its impact or the effect of existing problems e.g. land contamination, or poor air quality;

[...]"

"DM2 - Delivering planning contributions and infrastructure

[...]

For all types of development, including housing, we will seek contributions for any infrastructure or other measures necessary to mitigate any on site or off-site impacts from the development.

These contributions may cover, dependent on need:

[...]

e. Mitigation or compensation against environmental impacts e.g. noise, air quality (particularly in Air Quality Management Areas);

[...]."

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

## **3.0 METHODOLOGY**

### **3.1 Introduction**

3.1.1 The proposed development has the potential to cause air quality impacts during the construction and operational phases. These have been 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 V2.2'<sup>7</sup>.

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

- Earthworks;
- Construction; and,
- Trackout.

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

- Annoyance due to dust soiling;
- Harm to ecological receptors; and,
- The risk of health effects due to a significant increase in exposure to PM<sub>10</sub>.

3.2.4 The assessment steps are detailed below.

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<sup>7</sup> Guidance on the Assessment of Dust from Demolition and Construction V2.2, IAQM, 2024.

## Step 1 - Screen the Need for an Assessment

- 3.2.5 Step 1 screens the requirement for a more detailed assessment. Should human receptors be identified within 250m from the boundary or 50m from the construction vehicle route up to 250m 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 250m from the site entrance, then the assessment also proceeds to Step 2.
- 3.2.6 Should sensitive receptors not be present within the relevant distances then **negligible** impacts would be expected and further assessment is not necessary.

## Step 2 - Assess the Risk of Dust Impacts

- 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     | Earthworks | <ul style="list-style-type: none"><li>• Total site area greater than 110,000m<sup>2</sup></li><li>• Potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size)</li><li>• More than 10 heavy earth moving vehicles active at any one time</li><li>• Formation of bunds greater than 6m in height</li></ul> |

| Magnitude | Activity     | Criteria                                                                                                                                                                                                                                                                        |
|-----------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           | Construction | <ul style="list-style-type: none"> <li>Total building volume greater than 75,000m<sup>3</sup></li> <li>On site concrete batching</li> <li>Sandblasting</li> </ul>                                                                                                               |
|           | Trackout     | <ul style="list-style-type: none"> <li>More than 50 Heavy Duty Vehicle (HDV) trips per day</li> <li>Potentially dusty surface material (e.g. high clay content)</li> <li>Unpaved road length greater than 100m</li> </ul>                                                       |
| Medium    | Earthworks   | <ul style="list-style-type: none"> <li>Total site area 18,00m<sup>2</sup> to 110,000m<sup>2</sup></li> <li>Moderately dusty soil type (e.g. silt)</li> <li>5 to 10 heavy earth moving vehicles active at any one time</li> <li>Formation of bunds 3m to 6m in height</li> </ul> |
|           | Construction | <ul style="list-style-type: none"> <li>Total building volume 12,000m<sup>3</sup> to 75,000m<sup>3</sup></li> <li>Potentially dusty construction material (e.g. concrete)</li> <li>On site concrete batching</li> </ul>                                                          |
|           | Trackout     | <ul style="list-style-type: none"> <li>20 to 50 HDV trips per day</li> <li>Moderately dusty surface material (e.g. high clay content)</li> <li>Unpaved road length 50m to 100m</li> </ul>                                                                                       |
| Small     | Earthworks   | <ul style="list-style-type: none"> <li>Total site area less than 18,000m<sup>2</sup></li> <li>Soil type with large grain size (e.g. sand)</li> <li>Less than 5 heavy earth moving vehicles active at any one time</li> <li>Formation of bunds less than 3m in height</li> </ul> |
|           | Construction | <ul style="list-style-type: none"> <li>Total building volume less than 12,000m<sup>3</sup></li> <li>Construction material with low potential for dust release (e.g. metal cladding or timber)</li> </ul>                                                                        |
|           | Trackout     | <ul style="list-style-type: none"> <li>Less than 20 HDV trips per day</li> <li>Surface material with low potential for dust release</li> <li>Unpaved road length less than 50m</li> </ul>                                                                                       |

3.2.10 Step 2B defines the sensitivity of the area around the development to potential dust impacts. The sensitivities of specific receptors are summarised in Table 4.

**Table 4 Construction Dust - Sensitivities of People and Ecological Receptors**

| Receptor Sensitivity | Examples                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                     |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
|                      | Human Receptors                                                                                                                                                                                                                                                                                                                                                                                                            | Ecological Receptors                                                                                                                |
| High                 | <ul style="list-style-type: none"> <li>• Users expect high levels of amenity</li> <li>• High aesthetic or value property</li> <li>• People expected to be present continuously for extended periods of time</li> <li>• Locations where members of the public are exposed over a time period relevant to the AQO for PM<sub>10</sub>. e.g. residential properties, hospitals, schools and residential care homes</li> </ul> | <ul style="list-style-type: none"> <li>• Internationally or nationally designated site e.g. Special Area of Conservation</li> </ul> |
| Medium               | <ul style="list-style-type: none"> <li>• Users would expect to enjoy a reasonable level of amenity</li> <li>• Aesthetics or value of their property could be diminished by soiling</li> <li>• 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</li> </ul>               | <ul style="list-style-type: none"> <li>• Nationally designated site e.g. Sites of Special Scientific Interest</li> </ul>            |
| Low                  | <ul style="list-style-type: none"> <li>• Enjoyment of amenity would not reasonably be expected</li> <li>• Property would not be expected to be diminished in appearance</li> <li>• Transient exposure, where people would only be expected to be present for limited periods. e.g. public footpaths, shopping streets, playing fields, farmland, short term car park and roads</li> </ul>                                  | <ul style="list-style-type: none"> <li>• Locally designated site e.g. Local Nature Reserve</li> </ul>                               |

3.2.11 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 250 |
| High                 | More than 100       | High                         | High         | Medium        | Low           |
|                      | 10 - 100            | High                         | Medium       | Low           | Low           |
|                      | 1 - 10              | Medium                       | Low          | Low           | Low           |

| Receptor Sensitivity | Number of Receptors | Distance from the Source (m) |              |               |               |
|----------------------|---------------------|------------------------------|--------------|---------------|---------------|
|                      |                     | Less than 20                 | Less than 50 | Less than 100 | Less than 250 |
| Medium               | More than 1         | Medium                       | Low          | Low           | Low           |
| Low                  | More than 1         | Low                          | Low          | Low           | Low           |

3.2.12 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 <sub>10</sub> Concentration | Number of Receptors | Distance from the Source (m) |              |               |               |
|----------------------|-------------------------------------------------------|---------------------|------------------------------|--------------|---------------|---------------|
|                      |                                                       |                     | Less than 20                 | Less than 50 | Less than 100 | Less than 250 |
| High                 | Greater than 32µg/m <sup>3</sup>                      | More than 100       | High                         | High         | High          | Medium        |
|                      |                                                       | 10 - 100            | High                         | High         | Medium        | Low           |
|                      |                                                       | 1 - 10              | High                         | Medium       | Low           | Low           |
|                      | 28 - 32µg/m <sup>3</sup>                              | More than 100       | High                         | High         | Medium        | Low           |
|                      |                                                       | 10 - 100            | High                         | Medium       | Low           | Low           |
|                      |                                                       | 1 - 10              | High                         | Medium       | Low           | Low           |
|                      | 24 - 28µg/m <sup>3</sup>                              | More than 100       | High                         | Medium       | Low           | Low           |
|                      |                                                       | 10 - 100            | High                         | Medium       | Low           | Low           |
|                      |                                                       | 1 - 10              | Medium                       | Low          | Low           | Low           |
|                      | Less than 24µg/m <sup>3</sup>                         | More than 100       | Medium                       | Low          | Low           | Low           |
|                      |                                                       | 10 - 100            | Low                          | Low          | Low           | Low           |
|                      |                                                       | 1 - 10              | Low                          | Low          | Low           | Low           |
| Medium               | Greater than 32µg/m <sup>3</sup>                      | More than 10        | High                         | Medium       | Low           | Low           |
|                      |                                                       | 1 - 10              | Medium                       | Low          | Low           | Low           |
|                      | 28 - 32µg/m <sup>3</sup>                              | More than 10        | Medium                       | Low          | Low           | Low           |

| Receptor Sensitivity | Background Annual Mean PM <sub>10</sub> Concentration | Number of Receptors | Distance from the Source (m) |              |               |               |
|----------------------|-------------------------------------------------------|---------------------|------------------------------|--------------|---------------|---------------|
|                      |                                                       |                     | Less than 20                 | Less than 50 | Less than 100 | Less than 250 |
|                      |                                                       | 1 - 10              | Low                          | Low          | Low           | Low           |
|                      |                                                       | More than 10        | Low                          | Low          | Low           | Low           |
|                      | 24 - 28µg/m <sup>3</sup>                              | 1 - 10              | Low                          | Low          | Low           | Low           |
|                      |                                                       | More than 10        | Low                          | Low          | Low           | Low           |
|                      |                                                       | 1 - 10              | Low                          | Low          | Low           | Low           |
| Low                  | -                                                     | 1 or more           | Low                          | Low          | Low           | Low           |

3.2.13 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          |

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

3.2.15 Table 8 outlines the risk category from earthworks, construction and trackout activities.

**Table 8 Construction Dust - Dust Risk Category from Earthworks, Construction and Trackout Activities**

| Receptor Sensitivity | Dust Emission Magnitude |        |       |
|----------------------|-------------------------|--------|-------|
|                      | Large                   | Medium | Small |
| High                 | High                    | Medium | Low   |

| Receptor Sensitivity | Dust Emission Magnitude |        |            |
|----------------------|-------------------------|--------|------------|
|                      | Large                   | Medium | Small      |
| Medium               | Medium                  | Medium | Low        |
| Low                  | Low                     | Low    | Negligible |

### Step 3 - Site-specific Mitigation

3.2.16 Step 3 requires the identification of site-specific mitigation measures within the IAQM guidance<sup>8</sup> 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 - Determine Significant Effects

3.2.17 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**.

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

## 3.3 Operational Phase Assessment

### Potential Future Exposure

3.3.1 The proposed development comprises residential land use. This is considered a location of relevant exposure for long-term and short term AQOs in accordance with DEFRA

<sup>8</sup> Guidance on the Assessment of Dust from Demolition and Construction V2.2, IAQM, 2024.

guidance<sup>9</sup>, as shown in Table 2. Existing air quality conditions at the site were therefore assessed through consideration of the following factors:

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

3.3.2 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 Development Impacts**

3.3.3 The development has the potential to increase concentrations of NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> 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'<sup>10</sup> guidance to determine the potential for trips generated by the development to affect local air quality.

3.3.4 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. If any of the following apply:

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

B. Coupled with any of the following:

- the development has more than 10 parking spaces; or,

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<sup>9</sup> Local Air Quality Management Technical Guidance (TG22), DEFRA, 2022.

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

- the development will have a centralised energy facility or other centralised combustion process.

3.3.5 Should these criteria not be met, then the IAQM guidance<sup>11</sup> considers air quality impacts associated with a scheme to be **not significant** and no further assessment is required.

3.3.6 Where the above criteria are met, then the assessor should proceed to assess the development proposals against the following Stage 2 screening criteria:

- The development leads to a change of Light Duty Vehicle (LDV) flows of:
  - More than 100 Annual Average Daily Traffic (AADT) within an AQMA;
  - More than 500 AADT outside of an AQMA;
- The development leads to a change of HDV flows of:
  - More than 25 AADT within an AQMA;
  - More than 100 AADT outside of an AQMA;
- Introduce a new junction that would cause traffic flow to change behaviour with respect to acceleration/deceleration or introduce queueing traffic where there previously wasn't any (such as a roundabout or traffic lights); and,
- Introduce one or more significant combustion processes where there is a risk of impact to relevant receptors.

3.3.7 Should these criteria not be met, then the IAQM guidance<sup>12</sup> considers air quality impacts associated with a scheme to be **not significant** and no further assessment is required.

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

<sup>12</sup> Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.

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## **4.0 BASELINE**

### **4.1 Introduction**

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

### **4.2 Local Air Quality Management**

- 4.2.1 As required by the Environment Act (1995), as amended by the Environment Act (2021) RMBC has undertaken review and assessment of air quality within their area of jurisdiction. This process has indicated that annual mean NO<sub>2</sub> concentrations are above the AQO within the borough. As such a number of roads within Rochdale have been included within the Greater Manchester Combined Authority (GMCA) AQMA. This is described as follows:

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

- 4.2.2 The development is partly located within the AQMA. As such, there is the potential for the exposure of future residents to poor air quality and any emissions associated with the proposals to cause air quality effects within this sensitive location. This has therefore been considered within the assessment.
- 4.2.3 RMBC has concluded that concentrations of all other pollutants considered within the AQS are currently below the relevant AQOs. As such, no further AQMA's have been designated.

### **4.3 Air Quality Monitoring**

- 4.3.1 Monitoring of pollutant concentrations is undertaken by RMBC throughout their area of jurisdiction. Recent NO<sub>2</sub> results recorded in the vicinity of the development, as provided in GMCA's '2022 Air Quality Annual Status Report (ASR)'<sup>13</sup>, are shown in Table 9.

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<sup>13</sup> GMCA 2022 Air Quality ASR, GMCA, 2023.

**Table 9 Monitoring Results**

| Monitoring Site        | Monitored Annual Mean NO <sub>2</sub> Concentration (µg/m <sup>3</sup> ) |      |      |      |
|------------------------|--------------------------------------------------------------------------|------|------|------|
|                        | 2019                                                                     | 2020 | 2021 | 2022 |
| RO18ANO                | 26.8                                                                     | 20.9 | 18.7 | 22.7 |
| RO19ANO <sup>(a)</sup> | 35.8                                                                     | 29.3 | 35.4 | -    |

Note: (a) Monitor decommissioned in 2021.

4.3.2 As shown in Table 9, annual mean NO<sub>2</sub> concentrations were below the AQO of 40µg/m<sup>3</sup> at both monitoring locations in recent years. Reference should be made to Figure 2 for a map of the survey positions.

4.3.3 Pollutant concentrations recorded during 2020 and 2021 were affected by changes to travel patterns associated with the COVID-19 pandemic. The results should therefore be viewed with caution.

4.3.4 RMBC do not undertake PM<sub>10</sub> or PM<sub>2.5</sub> monitoring within the vicinity of the proposed development.

#### **4.4 Background Pollutant Concentrations**

4.4.1 Predictions of background annual mean 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 within grid square NGR: 389500, 413500. Data for this location was downloaded from the DEFRA website<sup>14</sup> for the purpose of the assessment and is summarised in Table 10.

**Table 10 Background Annual Mean Pollutant Concentration Predictions**

| Pollutant         | Predicted 2024 Background Annual Mean Pollutant Concentration (µg/m <sup>3</sup> ) |
|-------------------|------------------------------------------------------------------------------------|
| NO <sub>2</sub>   | 16.76                                                                              |
| PM <sub>10</sub>  | 11.11                                                                              |
| PM <sub>2.5</sub> | 7.49                                                                               |

<sup>14</sup> <http://uk-air.defra.gov.uk/data/laqm-background-maps?year=2018>.

- 4.4.2 As shown in Table 10, predicted background annual mean NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> concentrations are below the relevant AQOs and Interim Target at the proposed 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. Receptors sensitive to potential dust impacts during earthworks and construction were identified from a desk-top study of the area up to 250m from the boundary. These are summarised in Table 11.

**Table 11 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 250                       | More than 100                         | -                                          |

- 4.5.2 Receptors sensitive to potential dust impacts from trackout were identified from a desk-top study of the area up to 50m from the road network within 250m of the site access. These are summarised in Table 12.

**Table 12 Trackout Dust Sensitive Receptors**

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

- 4.5.3 There are no ecological receptors within 50m of the development boundary or the access route within 250m of the site entrance. As such, ecological impacts have not been assessed further within this report.

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

## **5.0 CONSTRUCTION PHASE ASSESSMENT**

### **5.1 Introduction**

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

### **5.2 Construction Phase Assessment**

#### **Step 1 - Screen the Need for an Assessment**

- 5.2.1 The undertaking of activities such as excavation, ground works, cutting, construction, concrete batching and storage of materials has the potential to result in fugitive dust emissions throughout the construction phase. Vehicle movements on the local road network also have the potential to result in the re-suspension of dust from highway surfaces.
- 5.2.2 The potential for impacts at sensitive locations depends significantly on local meteorology during the undertaking of dust generating activities, with the most significant effects likely to occur during dry and windy conditions.
- 5.2.3 The desk-study undertaken to inform the baseline identified a number of sensitive receptors within 250m of the site boundary and within 50m of routes to be used by construction vehicles to access the site. As such, a detailed assessment of potential dust impacts was required.

#### **Step 2a - Define the Potential Dust Emission Magnitude**

##### Earthworks

- 5.2.4 The total site area is less than 18,000m<sup>2</sup>. In accordance with the criteria outlined in Table 3, the magnitude of potential dust emissions from construction is therefore **small**.

### Construction

- 5.2.5 Due to the size of the development, the total building volume is likely to be less than 12,000m<sup>3</sup>. In accordance with the criteria outlined in Table 3, the magnitude of potential dust emissions from construction is therefore **small**.

### Trackout

- 5.2.6 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**.

## **Step 2b - Define the Sensitivity of the Area**

### Dust Soiling

- 5.2.7 As shown in Table 11, there are between 10 and 100 **high** sensitivity receptors within 20m of the site boundary. The sensitivity of the area with respect to dust soiling from earthworks and construction, as defined using the criteria summarised in Table 5, is therefore considered to be **high**.
- 5.2.8 As shown in Table 12, there are more than 100 **high** sensitivity receptors within 20m of the road network within 250m of the site access. The sensitivity of the area with respect to dust soiling from trackout, as defined using the criteria summarised in Table 5, is therefore considered **high**.

### Human Health

- 5.2.9 As shown in Table 10, the annual mean PM<sub>10</sub> background concentration at the site is 11.11µg/m<sup>3</sup>. As shown in Table 6, where the background annual mean PM<sub>10</sub> concentration is below 24µg/m<sup>3</sup> and there are between 10 and 100 **high** sensitivity receptors within 20m of the site boundary, the sensitivity of the area with respect to human health from earthworks and construction is **low**.

5.2.10 There are more than 100 **high** sensitivity receptors within 20m of the road network within 250m of the site access. The sensitivity of the area with respect to human health from trackout, as defined using the criteria in Table 6, is therefore considered to be **medium**.

### Step 2c - Define the Risk of Dust Impacts

5.2.11 The derived dust emission magnitude for each activity was combined with the sensitivity of the area to determine the risk of unmitigated impacts in line with the methodology set out in Table 8. A summary of the risk from each dust generating activity is provided in Table 13.

**Table 13 Summary of Potential Unmitigated Dust Risks**

| Potential Impact | Risk       |              |          |
|------------------|------------|--------------|----------|
|                  | Earthworks | Construction | Trackout |
| Dust Soiling     | Low        | Low          | Low      |
| Human Health     | Negligible | Negligible   | Low      |

5.2.12 As indicated in Table 13, the potential risk of dust soiling effects is **low** from earthworks, construction and trackout. The potential risk of human health effects is **low** from trackout and **negligible** from earthworks and construction.

5.2.13 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 construction phase.

### Step 3 - Site-specific Mitigation

5.2.14 The IAQM guidance<sup>15</sup> 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 14 These may be reviewed prior to the

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<sup>15</sup> Guidance on the Assessment of Dust from Demolition and Construction V2.2, IAQM, 2024.

commencement of construction works and incorporated into a Construction Environmental Management Plan (CEMP) or similar if required by the LA.

**Table 14 Fugitive Dust Emission Mitigation Measures**

| Issue                                              | Control Measure                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Communications                                     | <ul style="list-style-type: none"> <li>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</li> <li>Display the head or regional office contact information</li> </ul>                                                                                                                                                    |
| Site management                                    | <ul style="list-style-type: none"> <li>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</li> <li>Make the complaints log available to the LA upon request</li> <li>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</li> </ul>    |
| Monitoring                                         | <ul style="list-style-type: none"> <li>Carry out regular site inspections, record inspection results, and make an inspection log available to the LA upon request</li> <li>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</li> </ul>                                                                                                  |
| Site preparation                                   | <ul style="list-style-type: none"> <li>Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible</li> <li>Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site</li> <li>Avoid site runoff of water or mud</li> </ul>                                                                                               |
| Operating vehicle/machinery and sustainable travel | <ul style="list-style-type: none"> <li>Ensure all vehicles switch off engines when stationary - no idling vehicles</li> <li>Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable</li> </ul>                                                                                                                                                                                       |
| Operations                                         | <ul style="list-style-type: none"> <li>Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques</li> <li>Ensure an adequate water supply on the site for effective dust suppression, using non-potable water where possible and appropriate</li> <li>Use enclosed chutes and conveyors and covered skips</li> <li>Minimise drop heights and use fine water sprays wherever appropriate</li> </ul> |
| Waste management                                   | <ul style="list-style-type: none"> <li>Avoid bonfires or burning of waste materials</li> </ul>                                                                                                                                                                                                                                                                                                                                                             |
| Construction                                       | <ul style="list-style-type: none"> <li>Avoid scabbling (roughening of concrete surfaces) if possible</li> <li>Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out</li> </ul>                                                                                                                                                                                                                                        |

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| Issue    | Control Measure                                                                                                                                                                    |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Trackout | <ul style="list-style-type: none"><li>• Avoid dry sweeping of large areas</li><li>• Ensure vehicles entering and leaving site are covered to prevent escape of materials</li></ul> |

#### Step 4 - Determine Significant Effects

5.2.15 Assuming the relevant mitigation measures outlined in Table 16 are implemented, the residual impact from all dust generating activities is predicted to be **not significant**, in accordance with the IAQM guidance<sup>16</sup>.

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<sup>16</sup> Guidance on the Assessment of Dust from Demolition and Construction V2.2, IAQM, 2024.

## **6.0 OPERATIONAL PHASE ASSESSMENT**

### **6.1 Introduction**

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

### **6.2 Potential Future Exposure**

- 6.2.1 Residential developments are considered sensitive to elevated long-term and short-term pollutant concentrations. As such, there is the potential for new receptors to be introduced into an area of poor air quality. Existing conditions at the site are therefore considered in the following Section.
- 6.2.2 The site is partly located within the GMCA AQMA, which has been declared due to exceedences of the annual mean AQO for NO<sub>2</sub>. Although the designation covers a number of roads across Rochdale, it is likely that some locations that do not experience exceedences of the AQO. This is shown in the 2022 monitoring results, as reported in the GMCA Air Quality ASR<sup>17</sup>, which indicate compliance with the annual mean AQO for NO<sub>2</sub> at all sites within the AQMA across Rochdale.
- 6.2.3 As shown in Table 9, annual mean NO<sub>2</sub> concentrations at both monitors in the vicinity of the site were below the AQO in recent years.
- 6.2.4 As shown in the GMCA Air Quality ASR<sup>18</sup>, there were also no recorded exceedences of the 1-hour AQO for NO<sub>2</sub> or AQOs for PM<sub>10</sub> at any location of relevant exposure within Rochdale during 2022.
- 6.2.5 There is one road vehicle emission source within the vicinity of the site. Drake Street is located adjacent to the boundary and is only accessible to trams. As such, it is not likely to contribute significantly to pollution levels above background. It is noted that there are no A-roads or motorways within 200m of the boundary, which is the maximum extent of

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<sup>17</sup> GMCA 2022 Air Quality ASR, GMCA, 2023.

<sup>18</sup> GMCA 2022 Air Quality ASR, GMCA, 2023.

emission dispersion outlined in the Design Manual for Roads and Bridges (DMRB)<sup>19</sup>. As such, road traffic exhaust emissions are unlikely to contribute significantly to pollution levels above background at the proposals.

6.2.6 As shown in Table 10, predicted background pollutant concentrations for the grid square containing the site are below the annual mean for NO<sub>2</sub> and PM<sub>10</sub> during 2024. Concentrations are also below the Interim Target for PM<sub>2.5</sub>.

6.2.7 In summary, it is considered likely that pollutant concentrations are below the relevant AQOs at the proposed development site for the following reasons:

- Although the site is partly located within an AQMA, recent monitoring has indicated compliance with the relevant AQOs at all locations within the designation and within the vicinity of the site;
- The site is distanced from major pollutant sources; and,
- Predicted background concentrations are well below the relevant AQOs and Interim Target.

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

### 6.3 **Potential Development Impacts**

6.3.1 Any vehicle movements associated with the development will generate exhaust emissions on the local and regional road networks. The proposals have therefore been assessed against the IAQM<sup>20</sup> Stage 1 screening criteria detailed in Section 3.3. The development includes less than 10 parking spaces. As such, air quality impacts associated with the scheme are predicted to be **not significant**.

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<sup>19</sup> LA 105: Air Quality, Highways England, 2019.

<sup>20</sup> Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.

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## 7.0 CONCLUSION

7.1.1 Redmore Environmental Ltd was commissioned by Cassel & Fletcher to undertake an Air Quality Assessment in support of a planning application for a residential-led development at 42-46 Drake Street, Rochdale.

7.1.2 The development has the potential to cause air quality impacts at sensitive locations during the construction and operational phases, as well as expose future residents to any existing air quality issues at the site. As such, an Air Quality Assessment was undertaken to determine baseline conditions and assess potential impacts as a result of the scheme.

7.1.3 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. Site-specific dust control measures were subsequently determined. Following implementation, the residual significance of potential air quality impacts from dust generated by earthworks, construction and trackout activities are predicted to be **not significant**.

7.1.4 The potential for exposure of future residents to exceedences of the AQOs was assessed based on the findings of a desktop study. This indicated that concentrations of NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> are likely to be below the relevant AQOs and Interim Target at the development location. As such, the site is considered suitable for the proposed use from an air quality perspective.

7.1.5 Potential impacts during the operational phase of the proposed development may occur due to road traffic exhaust emissions associated with vehicles travelling to and from the site. These were assessed against the screening criteria provided within the IAQM<sup>21</sup> guidance document. This indicated road traffic exhaust impacts were predicted to be **not significant**.

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

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

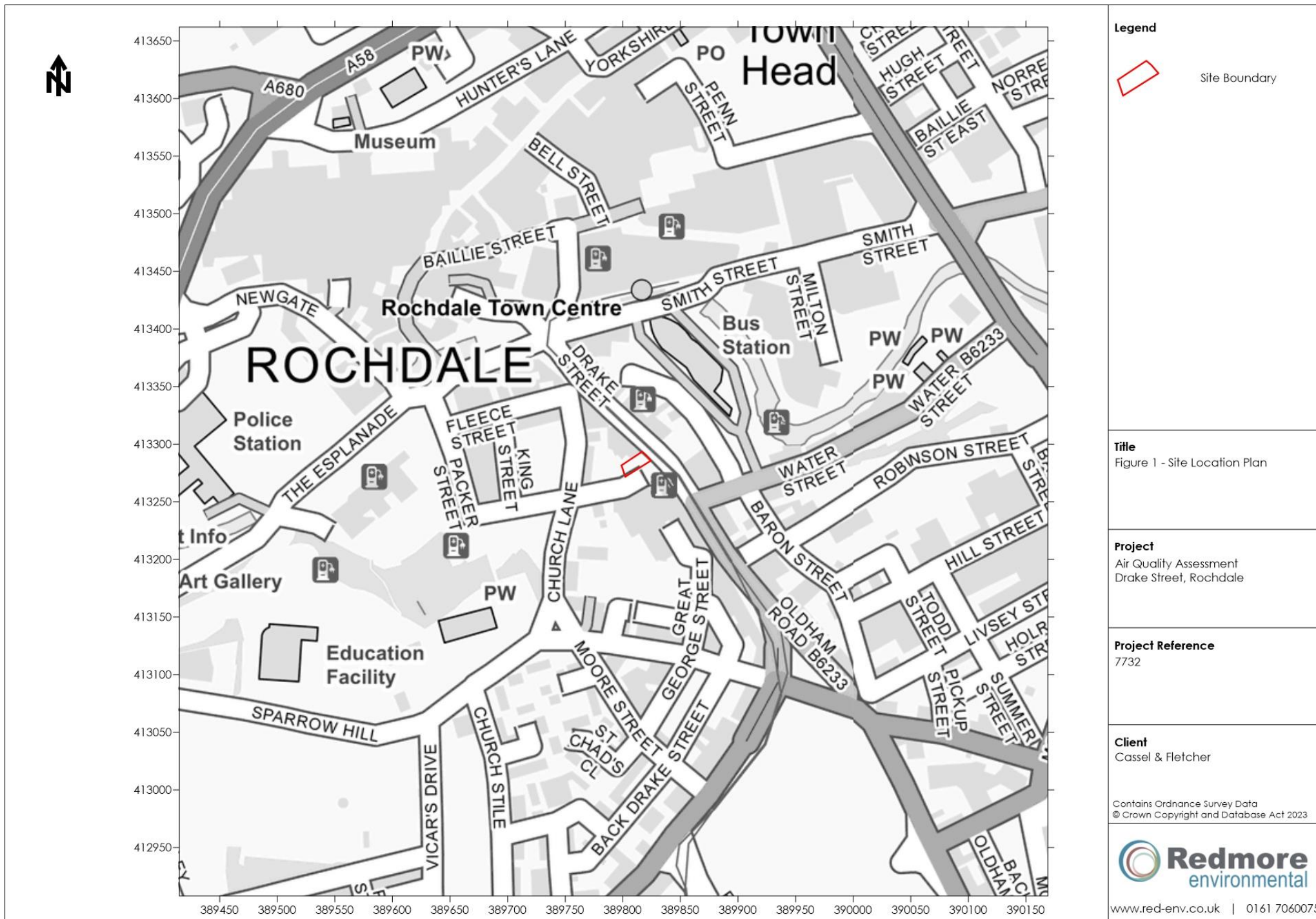
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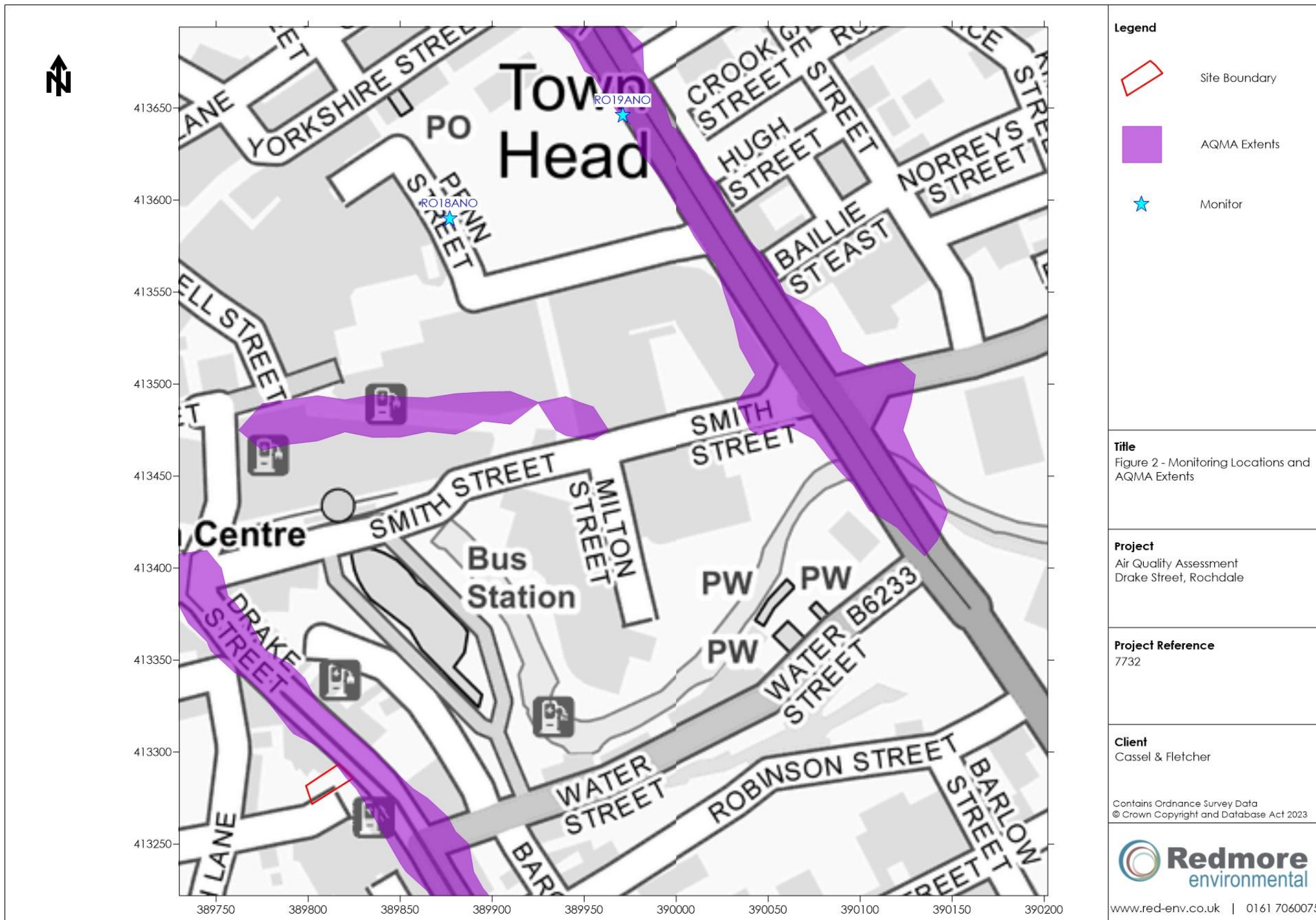
## 8.0 **ABBREVIATIONS**

|                   |                                                                    |
|-------------------|--------------------------------------------------------------------|
| AADT              | Annual Average Daily Traffic                                       |
| AQLV              | Air Quality Limit Value                                            |
| AQMA              | Air Quality Management Area                                        |
| AQO               | Air Quality Objective                                              |
| AQS               | Air Quality Strategy                                               |
| ASR               | Annual Status Report                                               |
| CEMP              | Construction Environmental Management Plan                         |
| DEFRA             | Department for Environment, Food and Rural Affairs                 |
| DMRB              | Design Manual for Roads and Bridges                                |
| GMCA              | Greater Manchester Combines 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 <sub>2</sub>   | Nitrogen dioxide                                                   |
| NPPF              | National Planning Policy Framework                                 |
| NPPG              | National Planning Policy Guidance                                  |
| PM <sub>10</sub>  | Particulate matter with an aerodynamic diameter of less than 10µm  |
| PM <sub>2.5</sub> | Particulate matter with an aerodynamic diameter of less than 2.5µm |
| RMBC              | Rochdale Metropolitan Borough Council                              |

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**Figures**





**Appendix 1 - Curricula Vitae**

### KEY EXPERIENCE:

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

- Production and management of Air Quality, Dust and Odour Assessments for a wide-range of clients from the retail, residential, infrastructure, commercial and industrial sectors.
- Production and co-ordination of Environmental Permit applications for a variety of industrial sectors.
- Detailed dispersion modelling of road vehicle and industrial emissions using ADMS-Roads, ADMS-5, AERMOD-PRIME and BREEZE-ROADS. Studies have included impact assessment of ground level pollutant and odour concentrations and assessment of suitability of development sites for proposed end-use.
- Project management and co-ordination of Environmental Impact Assessments and scoping reports for developments throughout the UK.
- Provision of expert witness services at Planning Inquiries.
- Design and project management of pollutant monitoring campaigns.
- Co-ordination and management of large-scale multi-disciplinary projects and submissions.
- Provision of expert advice to local government and international environmental bodies, as well as involvement in production of industry guidance.

### SELECT PROJECTS SUMMARY:

#### Industrial

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

Tatweer Petroleum - dispersion modelling of Bahrain oil field.

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

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

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

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

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

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

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

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

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

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

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

#### Residential

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

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

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

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

Elephant and Castle Leisure Centre - baseline AQA for redevelopment.

Carr Lodge, Doncaster - EIA for large residential development.

Queensland Road, Highbury - residential scheme including CHP.

Bicester Ecotown - dispersion modelling of energy centre.

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

York St, Bury - residential development adjacent to AQMA.

Temple Point Leeds - residential development adjacent to M1.

#### Commercial and Retail

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

Wakefield College - redevelopment of city centre campus in AQMA.

Manchester Airport Cargo Shed - commercial development.

Manchester Airport Apron Extension - EIA including aircraft emission modelling.

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

#### KEY EXPERIENCE:

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

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

#### SELECT PROJECTS SUMMARY:

##### **Bowlers Yard, Manchester**

Air Quality Assessment in support of an eleven storey residential development to provide circa 65 units on land known as Bowlers Yard, Manchester. The site was located in an Air Quality Management Area (AQMA) and concerns were raised regarding the exposure of future occupants to poor air quality due to road traffic emissions. Detailed dispersion modelling was undertaken using ADMS-roads to assess PM<sub>2.5</sub>, PM<sub>10</sub> and NO<sub>2</sub> concentrations across the site. Results indicated that pollution levels were below the air quality objectives across the development.

##### **Freemasons Arms Hotel, Heywood**

Air Quality Assessment to support a residential-led development in an AQMA. Detailed dispersion modelling was undertaken with the inclusion of advanced canyon modelling to evaluate the impact of the urban topography within the locality on the dispersion of traffic related pollutants. Predicted concentrations of NO<sub>2</sub> were found to exceed air quality criteria at the building façade fronting Market Place at first floor level. As such, mitigation was specified for the affected units to ensure future residents would not be exposed to poor air quality.

##### **Griffin Road, London**

Air Quality Assessment in support of a residential development located in an AQMA. Detailed dispersion modelling was undertaken using ADMS-roads to assess PM<sub>10</sub> and NO<sub>2</sub> concentrations across the site. Results indicated that pollution levels were classified as APEC - A in accordance with the London Councils Air Quality and Planning Guidance.

##### **High Street, Dudley**

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

##### **East Common Lane, Selby**

Air Quality Assessment in support of an industrial development on land associated with Access 63 Business Park, East Common Lane Selby. Due to the size of the development it was possible that traffic generated from the scheme may cause negative impacts on sensitive receptors nearby. NO<sub>2</sub> and PM<sub>10</sub> concentrations were quantified at specific receptor points to ensure there would be no significant increases in pollution levels. Results revealed negligible impacts at all locations.

##### **Wharton Road, Winsford**

Air Quality Assessment in support of a residential development of circa 138 units on land off Wharton Road, Winsford. Using sensitive receptors, located in areas where increased road traffic may affect NO<sub>2</sub> concentrations, a comparison was made between overall concentrations with and without the development in place. Results revealed pollutant concentrations were below the relevant standards across the site and impacts associated with the development were not significant.

#### KEY EXPERIENCE:

- Natasha is a Graduate Environmental Consultant with specialist experience in the air quality sector. Her key capabilities include:
- Production of Air Quality Assessments in accordance with Department for Environment, Food and Rural Affairs (DEFRA) methodologies for a range of residential, commercial and industrial sectors.
- Detailed dispersion modelling of road vehicle exhaust emissions using ADMS-Roads. Studies have included impact assessments on sensitive receptors and exposure of new residents to poor air quality.
- Assessment of construction dust impacts from a range of development sites.
- Odour Surveys to assess amenity and suitability of sites for potential future developments for residential use, including the production of Odour Assessments in support of planning applications.
- Production of Air Quality Neutral Assessments in accordance with The London Plan.
- Periodic bioaerosol monitoring campaigns at a permitted waste facility in support of a permit application.
- Measurement and assessment of workplace air quality. This includes monitoring of different parameters in accordance with the EH40/2005 Workplace Exposure Limits (WELS).

#### SELECT PROJECTS SUMMARY:

##### **Redbeck Motel, Crofton**

Air Quality Assessment in support of a residential development comprising demolition of the existing motel and construction of up to 90 dwellings on land off Doncaster Road, Crofton. The development had the potential to expose future occupants to any existing air quality issues and cause impacts at sensitive locations. Dispersion modelling was undertaken using ADMS-Roads due to the number of vehicle movements expected to be generated by the development. A construction dust assessment was also performed to provide mitigation for proposed dust generating activities. Results of the study indicated that air quality impacts and fugitive dust emissions were not significant.

##### **Arundel Road, Tangemere**

Air Quality Assessment in support of a residential development at Cassons Restaurant, Tangmere. Following concerns from the Local Authority regarding the potential exposure of future residents to poor air quality, dispersion modelling was undertaken in order to predict air quality conditions across the site. Results indicated concentrations did not represent a constraint to planning consent.

##### **Hespin Wood, Carlisle**

Monitoring and assessment of Ambient Bioaerosols in support of Environmental Permit compliance for an Open Windrow Compost. The facility has the potential to impact nearby sensitive receptors to *Aspergillus fumigatus* and Mesophilic bacteria. As such, monitoring was undertaken in accordance with the EA M9 guidance to determine conditions within the vicinity of the site. The results indicated both species were below the EA benchmark levels at all positions.

##### **Land off Hayward Gardens, Ashburton South Estate, Putney**

Air Quality Neutral Assessment in support of demolition of existing structures and construction of two new buildings to provide 43 dwellings, with a community room. The assessment was carried out in accordance with the London Plan requirements to ensure proposals did not lead to further deterioration of existing air quality. Following discussions and implementation of the identified strategies, compliance with the London Plan was achieved.

##### **Arcade Street, Wigan**

Odour Assessment in support of a conversion from existing offices to provide seven apartments. The proposals were located in close proximity to a number of hot food takeaways. As such, the Local Authority raised concerns that odour emissions may cause loss of amenity to future residents. A programme of Field Odour Surveys was undertaken to assess odour impacts from said premises. Results indicated odour effects at the site were not considered significant.

##### **Placefirst, Exchange Quay**

Workplace Air Quality Monitoring to investigate concerns that employees may be at risk of exposure to poor air quality as a result of the existing ventilation. Following a previous programme of monitoring, relative humidity levels (RH) were below the Health and Safety Executive guidelines (HSE). As such, an additional programme of monitoring was undertaken. This included monitoring of inhalable and respirable dusts, Volatile Organic Compounds, Carbon monoxide, Carbon dioxide, RH and temperature. Results indicated all parameters were below the relevant WELS and within HSE guidelines.