

Air Quality Assessment
Silburn Way, Middleton

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Executive Summary

Redmore Environmental Ltd was commissioned by OLF1 PROPCO2 S.A.R.L to undertake an Air Quality Assessment in support of a commercial development at Rhodes Business Park, Silburn Way, Middleton.

The proposals have the potential to cause air quality impacts as a result of fugitive dust emissions during construction and road traffic exhaust emissions associated with vehicles travelling to and from the site during operation. As such, an Air Quality Assessment was undertaken in order to determine baseline conditions and consider potential effects as a result of the scheme.

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

During the operational phase of the development there is the potential for air quality impacts as a result of road traffic exhaust emissions associated with vehicles travelling to and from the site. These were assessed against the relevant screening criteria. Due to the low number of predicted vehicle trips associated with the proposals, road traffic 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 1 - Curricula Vitae

1.0 INTRODUCTION

1.1 Background

- 1.1.1 Redmore Environmental Ltd was commissioned by OLF1 PROPCO2 S.A.R.L to undertake an Air Quality Assessment in support of a commercial development at Rhodes Business Park, Silburn Way, Middleton.
- 1.1.2 The proposals have the potential to cause air quality impacts as a result of fugitive dust emissions during construction and road traffic exhaust emissions associated with vehicles travelling to and from the site during operation. As such, an Air Quality Assessment was undertaken in order to determine baseline conditions and consider potential effects as a result of the scheme.

1.2 Site Location and Context

- 1.2.1 The site is located on land off Silburn Way, Middleton, at approximate National Grid Reference (NGR): 385470, 405187. Reference should be made to Figure 1 for a site location plan.
- 1.2.2 The proposals comprise the construction of a commercial unit to provide 1,975m² of floor space for B2, B8 and E(g) use alongside provision of 27 car parking spaces, ten cycling bays and two motorcycle spaces.
- 1.2.3 The development has the potential to cause impacts at sensitive locations. These may include fugitive dust emissions associated with construction works and road traffic exhaust emissions from vehicles travelling to and from the site during the operational phase. An Air Quality Assessment was therefore undertaken in order to determine baseline conditions and consider potential air quality effects as a result of the proposals. This is detailed in the following report.

2.0 **LEGISLATION AND POLICY**

2.1 **Legislation**

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

- Nitrogen dioxide (NO₂);
- Sulphur dioxide;
- Lead;
- Particulate matter with an aerodynamic diameter of less than 10µm (PM₁₀);
- Particulate matter with an aerodynamic diameter of less than 2.5µm (PM_{2.5});
- 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_{2.5} stated in the Air Quality Standards Regulations (2010) was amended in the Environment (Miscellaneous Amendments) (EU Exit) Regulations (2020).

2.1.3 The Air Quality Strategy (AQS) was produced by the Department for Environment, Food and Rural Affairs (DEFRA) and published on 28th April 2023¹. 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 2023² was published in January 2023, providing long term and Interim Targets in order to reduce population exposure to PM_{2.5}. The concentration target for 2040 was subsequently adopted in the Environmental Targets (Fine Particulate Matter) (England) Regulations (2023).

¹ AQS: Framework for Local Authority Delivery, DEFRA, 2023.

² 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 ₂	40	Annual mean
	200	1-hour mean, not to be exceeded on more than 18 occasions per annum
PM ₁₀	40	Annual mean
	50	24-hour mean, not to be exceeded on more than 35 occasions per annum
PM _{2.5}	12 ^(a)	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 guidance³ on where the AQOs for pollutants considered within this report apply.

Table 2 Examples of Where the Air Quality Objectives Apply

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

³ Local Air Quality Management Technical Guidance (TG22), DEFRA, 2022.

Averaging Period	Objective Should Apply At	Objective Should Not Apply At
1-hour mean	All locations where the annual mean and 24 and 8-hour mean objectives apply. Kerbside sites (for example, pavements of busy shopping streets) Those parts of car parks, bus stations and railway stations etc which are not fully enclosed, where members of the public might reasonably be expected to spend one hour or more Any outdoor locations where members of the public might reasonably be expected to spend one hour or longer	Kerbside sites where the public would not be expected to have regular access

2.2 **Local Air Quality Management**

2.2.1 Local Authorities (LAs) are required to periodically review and assess air quality within their area of jurisdiction under the system of Local Air Quality Management (LAQM). This review and assessment of air quality involves comparing present and likely future pollutant concentrations against the AQOs. If it is predicted that levels at locations of relevant exposure, as summarised in Table 2, are likely to be exceeded, 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 Framework⁴ (NPPF) was published in September 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 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 [...]."

⁴ 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 Guidance⁵ (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?

⁵ <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 Local Plan: Core Strategy 2016-2028⁶ was adopted by Rochdale Borough Council (RBC) on 19th October 2016. Review of the document indicated the following of relevance to this report:

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

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

⁶ Rochdale Local Plan: Core Strategy, RBC, 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 have been taken into consideration throughout the undertaking of this assessment.

3.0 METHODOLOGY

3.1 Introduction

3.1.1 The proposed development has the potential to cause adverse impacts as a result of construction phase dust emissions and exhaust emissions from vehicles travelling to and from the site during the operational phase. These 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 V2.1'⁷.

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 PM₁₀.

3.2.4 The assessment steps are detailed below.

⁷ Guidance on the Assessment of Dust from Demolition and Construction V2.1, IAQM, 2023.

Step 1

- 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

- 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	• Total site area greater than 110,000m² • 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 6m in height

Magnitude	Activity	Criteria
	Construction	- Total building volume greater than 75,000m³ - 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	Earthworks	- Total site area 18,000m² to 110,000m² - Moderately dusty soil type (e.g. silt) 5 to 10 heavy earth moving vehicles active at any one time - Formation of bunds 3m to 6m in height
	Construction	- Total building volume 12,000m³ to 75,000m³ - Potentially dusty construction material (e.g. concrete) - On site concrete batching
	Trackout	20 to 50 HDV trips per day - Moderately dusty surface material (e.g. high clay content) - Unpaved road length 50m to 100m
Small	Earthworks	- Total site area less than 18,000m² - 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
	Construction	- Total building volume less than 12,000m³ - Construction material with low potential for dust release (e.g. metal cladding or timber)
	Trackout	- Less than 20 HDV trips per day - Surface material with low potential for dust release - Unpaved road length less than 50m

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

Table 4 Construction Dust - Examples of Factors Defining Sensitivity of an Area

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

3.2.14 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.

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

3.2.16 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	Low	Low
	10 - 100	High	Medium	Low	Low
	1 - 10	Medium	Low	Low	Low
Medium	More than 1	Medium	Low	Low	Low
Low	More than 1	Low	Low	Low	Low

3.2.17 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

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
	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	High	Medium	Low	Low	Low
			1 - 10	Medium	Low	Low	Low
	28 - 32µg/m ³	More than 10	Medium	Low	Low	Low	Low
		1 - 10	Low	Low	Low	Low	Low
	24 - 28µg/m ³	More than 10	Low	Low	Low	Low	Low
		1 - 10	Low	Low	Low	Low	Low
	Less than 24µg/m ³	More than 10	Low	Low	Low	Low	Low
		1 - 10	Low	Low	Low	Low	Low
	Low	-	1 or more	Low	Low	Low	Low

3.2.18 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	Medium	Medium
Medium	Medium	Low

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

3.2.19 Step 2C combines the dust emission magnitude with the sensitivity of the area to determine the risk of unmitigated impacts. Table 8 outlines the risk category from earthworks and construction activities.

Table 8 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

3.2.20 Table 9 outlines the risk category from trackout activities.

Table 9 Construction Dust - Dust Risk Category from Trackout Activities

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

Step 3

3.2.21 Step 3 requires the identification of site specific mitigation measures within the IAQM guidance⁸ to reduce potential dust impacts based upon the relevant risk categories identified in Step 2. For sites with **negligible** risk, mitigation measures beyond those

⁸ Guidance on the Assessment of Dust from Demolition and Construction V2.1, IAQM, 2023.

required by legislation are not required. However, additional controls may be applied as part of good practice.

Step 4

3.2.22 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**.

3.2.23 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

3.3.1 The development has the potential to increase concentrations of NO₂, PM₁₀ and PM_{2.5} as a result of road traffic exhaust emissions associated with vehicles travelling to and from the site during the operational phase. A screening assessment was therefore undertaken using the criteria contained within the IAQM 'Land-Use Planning & Development Control: Planning for Air Quality'⁹ guidance to determine the potential for trips generated by the 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 AQMA; or,

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

- 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 guidance¹⁰ considers air quality impacts associated with a scheme to be **not significant** and no further assessment is required.

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

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), as amended by the Environment Act (2021), RBC has undertaken Review and Assessment of air quality within their area of jurisdiction. This process has indicated that annual mean concentrations of NO₂ are above the AQO within the 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 the Greater Manchester Combined Authority AQMA located within the Rochdale Council area."

- 4.2.2 The development is located approximately 100m north 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 RBC 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 RBC throughout their area of jurisdiction. Recent NO₂ concentrations recorded in the vicinity of the development are shown in Table 10.

Table 10 Monitoring Results

Monitoring Site	Monitored NO ₂ Concentration (µg/m ³)			
	2019	2020	2021	2022
BU1NO	32.4	24.4	25.3	26.6
RO4ANO	33.2	22.2	22.8	22.7
RO5ANO	24.5	16.5	16.4	16.4

4.3.2 As shown in Table 10, annual mean NO₂ concentrations were below the AQO of 40µg/m³ at all monitoring sites during 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 RBC do not undertake monitoring of PM₁₀ or PM_{2.5} concentrations within 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: 385500, 405500. Data for this location was downloaded from the DEFRA website¹¹ for the purpose of this assessment and is summarised in Table 11.

Table 11 Background Pollutant Concentrations

Pollutant	Predicted 2023 Background Pollutant Concentration (µg/m ³)
NO ₂	14.13
PM ₁₀	11.21
PM _{2.5}	7.58

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

4.4.2 As shown in Table 11, predicted background NO₂, PM₁₀ and PM_{2.5} concentrations are below the relevant AQOs and Interim Target at the development site.

5.0 **ASSESSMENT**

5.1 **Introduction**

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

5.2 **Construction Phase Assessment**

Step 1

- 5.2.1 The undertaking of activities such as excavation, ground works, cutting, construction, concrete batching and storage of materials has the potential to result in fugitive dust emissions throughout the construction phase. Vehicle movements both on-site and on the local road network also have the potential to result in the re-suspension of dust from haul roads and highway surfaces.
- 5.2.2 The potential for impacts at sensitive locations depends significantly on local meteorology during the undertaking of dust generating activities, with the most significant effects likely to occur during dry and windy conditions.
- 5.2.3 Receptors sensitive to potential dust impacts during 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 12.

Table 12 Earthworks and Construction Dust Sensitive Receptors

Distance from Site Boundary (m)	Approximate Number of Human Receptors	Approximate Number of Ecological Receptors
Up to 20	1 - 10	0
Up to 50	1 - 10	1
Up to 100	10 - 100	-
Up to 350	More than 100	-

- 5.2.4 Receptors sensitive to potential dust impacts from trackout were identified from a desk-top study of the area up to 50m from the road network within 250m of the site access. These are summarised in Table 13.

Table 13 Trackout Dust Sensitive Receptors

Distance from Site Access Route (m)	Approximate Number of Human Receptors	Approximate Number of Ecological Receptors
Up to 20	10 - 100	1
Up to 50	10 - 100	1

- 5.2.5 Based on the criteria shown in Table 4, the sensitivity of the receiving environment to potential dust impacts was determined as **high** for trackout. This was because the identified receptors included residential properties. The sensitivity of the receiving environment to potential dust impacts was determined as **medium** for earthworks and construction. This was because the identified receptors included places of work.
- 5.2.6 The ecological receptor identified in Tables 12 and 13 is the Alkrington Woods LNR. This lies approximately 40m north-east of the site boundary. As the identified ecological receptor is a LNR, the sensitivity was classified as **low**.
- 5.2.7 A number of additional factors have been considered when determining the sensitivity of the surrounding area. These are summarised in Table 14.

Table 14 Additional Area Sensitivity Factors to Potential Dust Impacts

Guidance	Comment
Whether there is any history of dust generating activities in the area	A review of the planning portal and Google Maps imagery indicated a residential development (reference: 18/01041/REM) of 67 properties approximately 235m west of the site is currently under construction. It is possible that this may have caused dust generation in the area over recent months

Guidance	Comment
The likelihood of concurrent dust generating activity on nearby sites	A review of the planning portal indicated the following applications have recently been granted planning permission within the vicinity of the site: - Reference: 23/00486/FUL - erection of two storey office building to the north of the site; and, - Reference: 23/00796/LBC - conversion of Warwick Mill to 135 residential apartments and flexible commercial space It is therefore possible that these will result in concurrent dust generation should the construction phases overlap with that of the proposed scheme
Pre-existing screening between the source and the receptors	Trees and shrubs are located to the east, south and west of the site boundary. These may act as a barrier between emission sources and receptors during construction
Conclusions drawn from analysing local meteorological data which accurately represent the area: and if relevant the season during which works will take place	As shown in Figure 3, the predominant wind bearing at the site is from the south. As such, receptors to the north of the boundary are most likely to be affected by dust releases
Conclusions drawn from local topography	There are no significant topographical constraints to dust dispersion
Duration of the potential impact, as a receptor may become more sensitive over time	Currently it is unclear as to the duration of the construction phase. However, it is possible that it will extend over one year. The sensitivity of nearby receptors is unlikely to change during this time
Any known specific receptor sensitivities which go beyond the classifications given in the document	No specific receptor sensitivities identified during the baseline assessment

5.2.8 The sensitivity of the receiving environment to specific potential dust impacts, based on the criteria shown in Section 3.2, is shown in Table 15.

Table 15 Sensitivity of the Surrounding Area

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

Potential Impact	Sensitivity of the Surrounding Area		
	Earthworks	Construction	Trackout
Ecological	Low	Low	Low

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

Step 2

Earthworks

5.2.10 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 less than 18,000m². In accordance with the criteria outlined in Table 3, the magnitude of potential dust emissions from earthworks is therefore **small**.

5.2.11 Table 15 indicates the sensitivity of the area to dust soiling effects on people and property is **low**. In accordance with the criteria outlined in Table 8, the development is considered to be a **negligible** risk site for dust soiling as a result of earthworks.

5.2.12 Table 15 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 earthworks.

5.2.13 Table 15 indicates the sensitivity of the area to ecological impacts is **low**. In accordance with the criteria outlined in Table 8, the development is considered to be a **negligible** risk site for ecological impacts as a result of earthworks.

Construction

5.2.14 Due to the size of the development, the total building volume is estimated to be less than 12,000m³. In accordance with the criteria outlined in Table 3, the magnitude of potential dust emissions from construction is therefore **small**.

5.2.15 Table 15 indicates the sensitivity of the area to dust soiling effects on people and property is **low**. In accordance with the criteria outlined in Table 8, the development is considered to be a **negligible** risk site for dust soiling as a result of construction activities.

5.2.16 Table 15 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 construction activities.

5.2.17 Table 15 indicates the sensitivity of the area to ecological impacts is **low**. In accordance with the criteria outlined in Table 8, the development is considered to be a **negligible** risk site for ecological impacts as a result of construction activities.

Trackout

5.2.18 Based on the site area, it is anticipated that the unpaved road length will be between 50m and 100m. In accordance with the criteria outlined in Table 3, the magnitude of potential dust emissions from trackout is therefore **medium**.

5.2.19 Table 15 indicates the sensitivity of the area to dust soiling effects to 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 trackout.

5.2.20 Table 15 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 trackout.

5.2.21 Table 15 indicates the sensitivity of the area to ecological impacts is **low**. In accordance with the criteria outlined in Table 9, the development is considered to be a **low** risk site for ecological impacts as a result of trackout activities.

Summary of the Risk of Dust Effects

5.2.22 A summary of the risk from each dust generating activity is provided in Table 16.

Table 16 Summary of Potential Unmitigated Dust Risks

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

5.2.23 As indicated in Table 16, the potential risk of dust soiling is **medium** from trackout and **negligible** from earthworks and construction. The potential risk of human health impacts is **low** from trackout and **negligible** from earthworks and construction. The potential of ecological effects is **low** from trackout and **negligible** from earthworks and construction.

5.2.24 It should be noted that the potential for impacts depends significantly on the distance between the dust generating activity and receptor location. Risk was predicted based on a worst-case scenario of works being undertaken at the site boundary closest to each sensitive area. Therefore, actual risk is likely to be lower than that predicted during the majority of the construction phase.

Step 3

5.2.25 The IAQM guidance¹² provides potential mitigation measures to reduce impacts as a result of fugitive dust emissions during the construction phase. These have been adapted for the development site as summarised in Table 17. These may be reviewed prior to the commencement of construction works and incorporated into a Construction Environmental Management Plan or similar if required by the LA.

¹² Guidance on the Assessment of Dust from Demolition and Construction V2.1, IAQM, 2023.

Table 17 Fugitive Dust Emission Mitigation Measures

Issue	Control Measure
Communications	• Develop and implement a stakeholder communications plan that includes community engagement before work commences on site • Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager • Display the head or regional office contact information • Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the LA
Site management	• Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken • Make the complaints log available to the LA upon request • Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book
Monitoring	• Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the LA upon request • Increase the frequency of site inspections when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions
Site preparation	• Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible • Fully enclose site or specific operations where there is a high potential for dust production and they are active for an extensive period • Avoid site runoff of water or mud • Keep site fencing, barriers and scaffolding clean using wet methods • Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used • Cover, seed or fence stockpiles to prevent wind whipping
Operating vehicle/machinery and sustainable travel	• Ensure all vehicles switch off engines when stationary - no idling vehicles • Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable

Issue	Control Measure
Operations	• Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques • Ensure an adequate water supply on the site for effective dust suppression, using non-potable water where possible and appropriate • Use enclosed chutes and conveyors and covered skips • Minimise drop heights and use fine water sprays wherever appropriate • Ensure equipment is available to clean any dry spillages, and clean up spillages as soon as reasonably practicable using wet cleaning methods
Waste management	• Avoid bonfires or burning of waste materials
Construction	• Avoid scabbling (roughening of concrete surfaces) if possible • Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out
Trackout	• Use water-assisted dust sweeper(s) on the access and local roads, if required • Avoid dry sweeping of large areas • Ensure vehicles entering and leaving site are covered to prevent escape of materials • Implement a wheel washing system • Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits

Step 4

5.2.26 Assuming the relevant mitigation measures outlined in Table 17 are implemented, the residual impact from all dust generating activities is predicted to be **not significant**, in accordance with the IAQM guidance¹³.

5.3 Operational Phase Assessment

5.3.1 Any traffic movements associated with the proposals will generate exhaust emissions on the local and regional road networks. Information provided by Focus Transport Planning Limited, the Transport Consultants for the project, indicated that the development is predicted to generate 129 daily vehicle movements. These will be distributed on the local road network as summarised in Table 18.

¹³ Guidance on the Assessment of Dust from Demolition and Construction V2.1, IAQM, 2023.

Table 18 Vehicle Trip Distribution

Road Link	Number of Vehicles (AADT)	
	LDVs	HDVs
A576 Manchester Old Road, east of Silburn Way	44	8
A576 Manchester Old Road, west of Silburn Way	65	12

- 5.3.2 As shown in Table 18, the proposals are not predicted to result in an increase in LDV flows of more than 100 AADT or HDV flows of more than 25 on any individual road link. Additionally, the development does not include significant highway realignment or the introduction of a junction. As such, potential air quality impacts associated with operational phase road vehicle exhaust emissions are predicted to be **not significant**, in accordance with the IAQM¹⁴ screening criteria shown in Section 3.3.

¹⁴ Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.

6.0 CONCLUSION

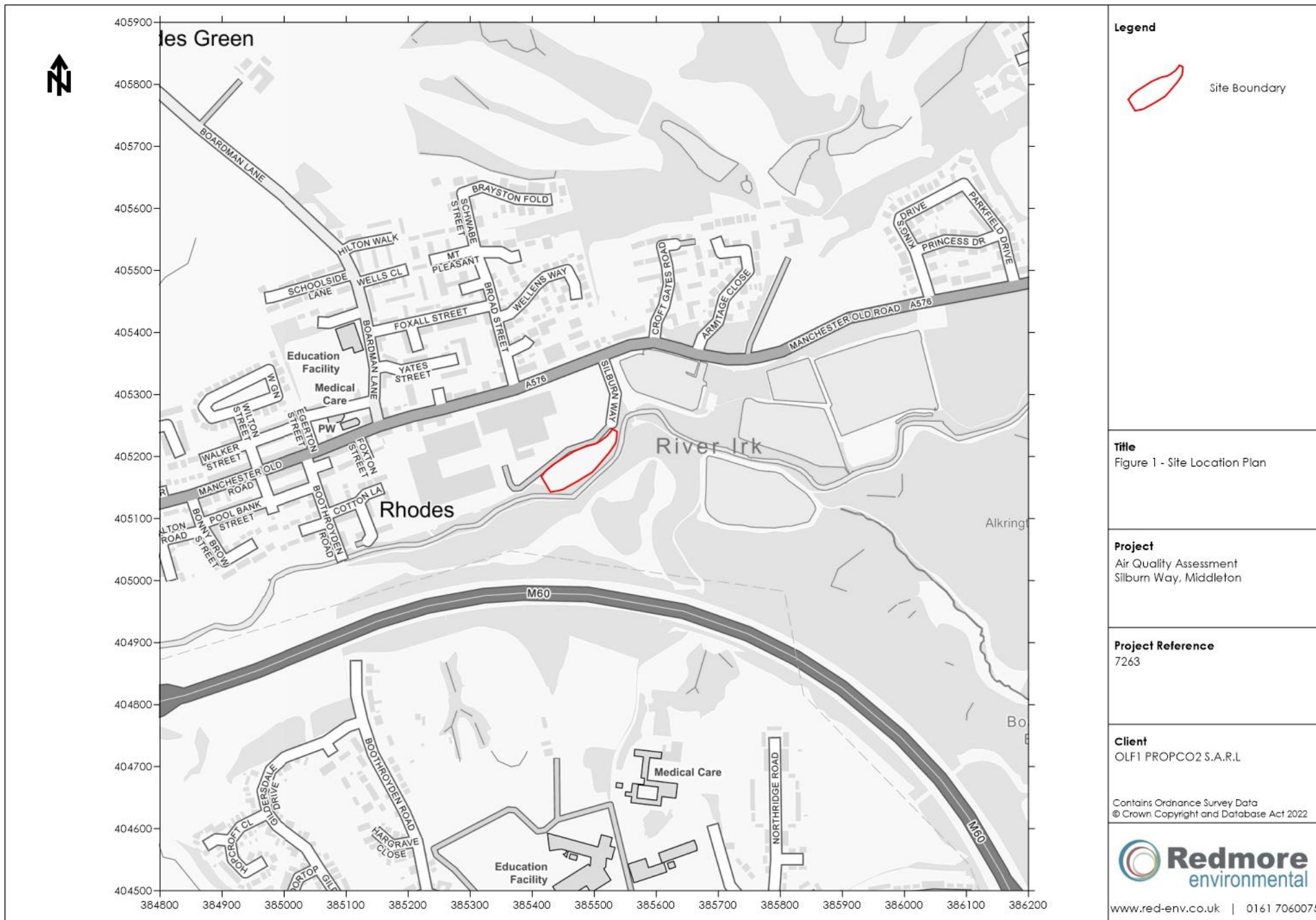
- 6.1.1 Redmore Environmental Ltd was commissioned by OLF1 PROPCO2 S.A.R.L to undertake an Air Quality Assessment in support of a commercial development at Rhodes Business Park, Silburn Way, Middleton.
- 6.1.2 The proposals have the potential to cause air quality impacts as a result of fugitive dust emissions during construction and road traffic exhaust emissions associated with vehicles travelling to and from the site during operation. As such, an Air Quality Assessment was undertaken in order to determine baseline conditions at the site and assess potential air quality effects as a result of the scheme.
- 6.1.3 During the construction phase of the development there is the potential for air quality impacts as a result of fugitive dust emissions from the site. These were assessed in accordance with the IAQM methodology. Assuming good practice dust control measures are implemented, the residual significance of potential air quality impacts from dust generated by 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 road traffic exhaust emissions associated with vehicles travelling to and from the site. These were assessed against the screening criteria provided within the IAQM¹⁵ guidance. Due to the low number of predicted vehicle trips associated with the proposals, road traffic exhaust impacts were predicted to be **not significant**.
- 6.1.5 Based on the assessment results, air quality factors are not considered a constraint to planning consent for the development.

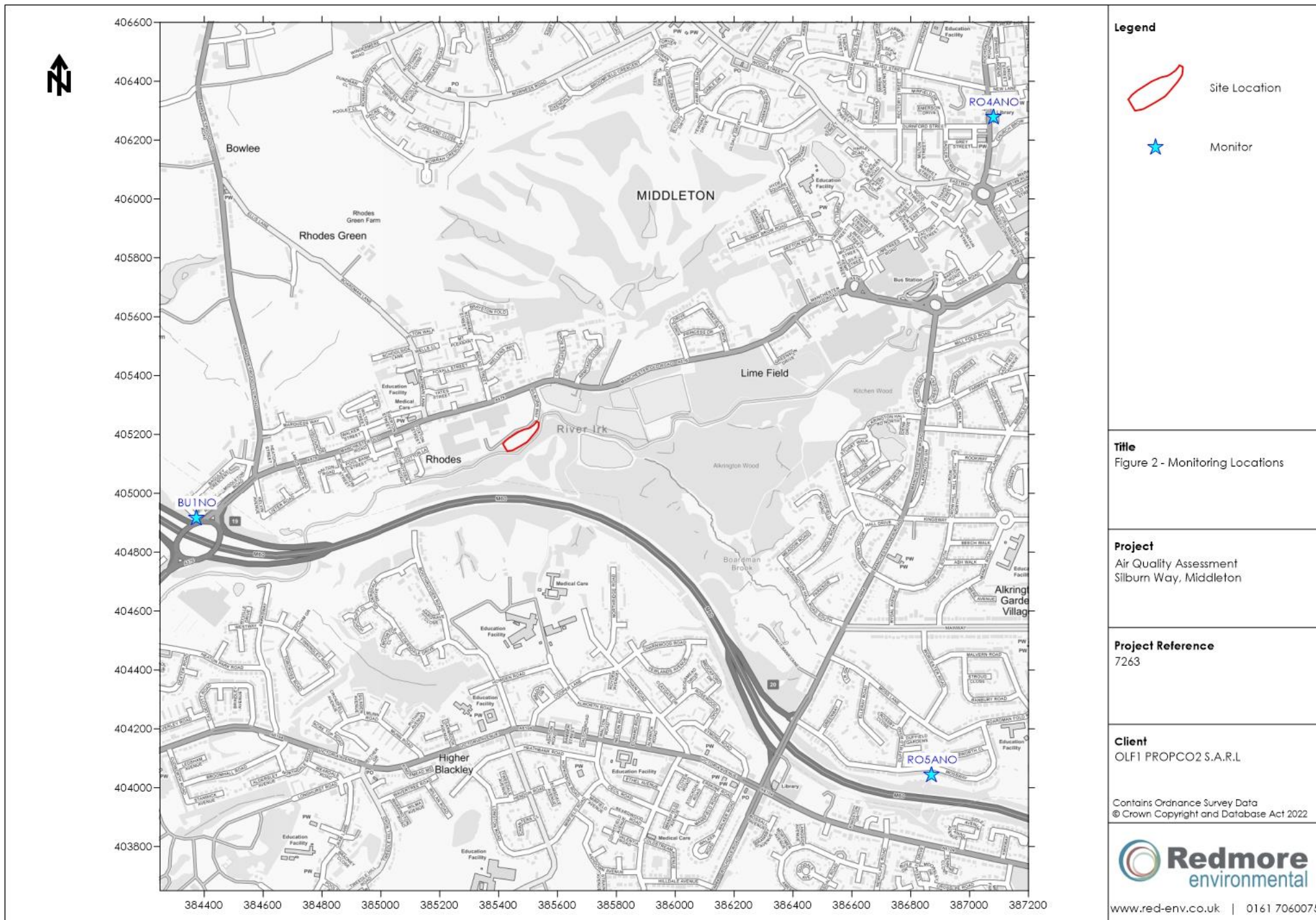
¹⁵ Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.

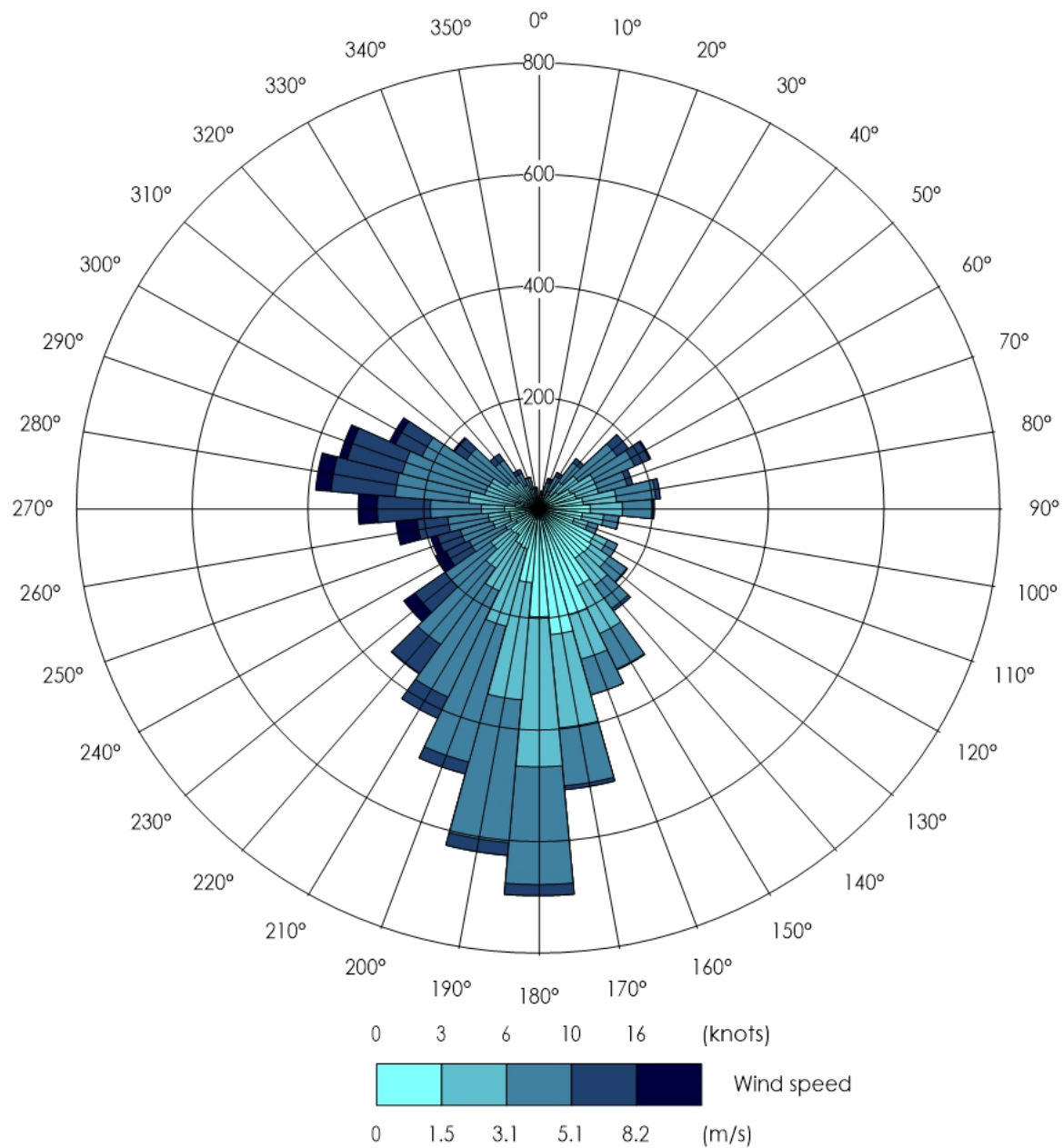
7.0 **ABBREVIATIONS**

AADT	Annual Average Daily Traffic
AQLV	Air Quality Limit Value
AQMA	Air Quality Management Area
AQO	Air Quality Objective
AQS	Air Quality Strategy
DEFRA	Department for Environment, Food and Rural Affairs
DMP	Dust Management Plan
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
LNR	Local Nature Reserve
NGR	National Grid Reference
NO ₂	Nitrogen dioxide
NPPF	National Planning Policy Framework
NPPG	National Planning Practice Guidance
PM ₁₀	Particulate matter with an aerodynamic diameter of less than 10µm
PM _{2.5}	Particulate matter with an aerodynamic diameter of less than 2.5µm
RBC	Rochdale Borough Council

Figures







Legend

Title
Figure 3 - Wind Rose of 2022
Manchester Airport
Meteorological Data

Project
Air Quality Assessment
Silburn Way, Middleton

Project Reference
7263

Client
OLF1 PROPCO2 S.A.R.L

 **Redmore**
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Appendix 1 - Curricula Vita

KEY EXPERIENCE:

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

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

SELECT PROJECTS SUMMARY:

Bowlers Yard, Manchester

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

Freemasons Arms Hotel, Heywood

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

Griffin Road, London

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

High Street, Dudley

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

East Common Lane, Selby

Air Quality Assessment in support of an industrial development on land associated with Access 63 Business Park, East Common Lane Selby. Due to the size of the development it was possible that traffic generated from the scheme may cause negative impacts on sensitive receptors nearby. NO₂ and PM₁₀ concentrations were quantified at specific receptor points to ensure there would be no significant increases in pollution levels. Results revealed negligible impacts 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 NO₂ concentrations, a comparison was made between overall concentrations with and without the development in place. Results revealed pollutant concentrations were below the relevant standards across the site and impacts associated with the development were not significant.

KEY EXPERIENCE:

Ceri 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. Odour surveys to assess amenity and suitability of sites for potential future development for residential use.

SELECT PROJECTS SUMMARY:

Warren Street, Stockport

Air Quality Assessment in support of a residential-led development comprising 553 apartments and two commercial units located in an Air Quality Management Area (AQMA). The development had the potential to expose future occupants to poor air quality and cause impacts at sensitive locations. Detailed dispersion modelling and a construction dust assessment indicated air quality factors were not a constraint to the development.

Belgrave Gate, Leicester

Air Quality Assessment in support of the conversion of an existing building to provide three residential units on Belgrave Gate, Leicester. The scheme was located in an AQMA, alongside a bus station. As such, the development had potential to expose future residents to elevated pollution levels and adverse air quality effects. Results of detailed dispersion modelling utilising advanced canyons and a volume source to represent the bus station indicated air quality issues were not a constraint to planning consent for the development.

Kings Arms Hotel, Stansted

Odour Assessment in support of a Discharge of Condition application for a consented development on land to the rear of the Kings Arms Hotel, Stansted. The site was located in close proximity to several fast food restaurants which have the potential to cause odour emissions during normal operation. A mitigation scheme was therefore identified to protect future residents from loss of amenity. Subject to the inclusion of the specified mitigation, overall effects of odour were considered to be not significant at the development.

Manchester Road West, Little Hulton

Odour Assessment in support of construction of 152 residences on land off Manchester Road West, Little Hulton. The development was located in the vicinity of several waste management facilities which may form a source of odour emissions and cause loss of amenity for future residents. A two stage Odour Assessment was undertaken to assess baseline conditions across the site and consider the risk of reduced amenity. Results of the assessment indicated odour effects at the site did not represent a constraint to planning consent.

Gravel Pit Farm, Sand Hutton

Odour Assessment in support of the conversion of existing buildings into two residential dwellings on land at Gravel Pit Farm, Sand Hutton. The development was located in the vicinity of the Sand Hutton Anaerobic Digestion Plant, which may form a source of odour emissions and cause loss of amenity for future residents. Results of a two stage Odour Assessment indicated odour effects at the site were not significant. As such, odour was not considered to represent a constraint to planning consent.

A1 Trunk Road, Long Bennington

Odour Assessment in support of a residential development on land off the A1 Trunk Road, Long Bennington. The development was located in the vicinity of a maggot farm growing bait for fishermen. Results of a two stage Odour Assessment indicated that at the location of the proposed dwellings, impacts were not at a level considered to cause loss of amenity as a result of emissions. As such, odour was not considered to represent a constraint to planning consent.