Air Quality Assessment

Mousdell Close, Ashington

Client: Penn Gardens Properties Ltd

Reference: 9286r2

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Report Issue

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Executive Summary

Redmore Environmental Ltd was commissioned by Penn Gardens Properties Ltd to undertake an Air Quality Assessment in support of a residential development on land east of Mousdell Close, Ashington.

An Air Quality Assessment was undertaken to:

- Assess potential impacts associated with fugitive dust emissions during the construction phase of the proposed development;
- Assess potential impacts associated with road transport emissions during the operational phase of the proposed development; and,
- Identify any requirement for relevant mitigation measures.

Potential construction phase 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.

Potential impacts during the operational phase of the proposals may occur due to road traffic exhaust emissions associated with vehicles travelling to and from the site. These were assessed using standard screening criteria. Due to the low number of vehicle trips, road traffic exhaust emission impacts were not predicted to be significant.

Potential emissions from the proposals were assessed in line with the requirements of the Air Quality and Emissions Mitigation Guidance for Sussex. This included completion of an Emissions Mitigation Assessment in order to determine the appropriate level of mitigation required for the scheme. Measures included as part of the proposals are consider suitable for a scheme of this size and nature and meet the requirements of the guidance.

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

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1.0 INTRODUCTION

1.1 Instruction

1.1.1 Redmore Environmental Ltd was commissioned by Penn Gardens Properties Ltd to undertake an Air Quality Assessment in support of a residential development on land east of Mousdell Close, Ashington.

1.2 Site Location and Context

1.2.1 The site is located on land east of Mousdell Close, Ashington, at approximate National Grid Reference (NGR): 512505, 116344. The relevant Local Authority (LA) is Horsham District Council (HDC). Reference should be made to Figure 1 for a map of the site and surrounding area.

1.2.2 The proposals comprise construction of 74 residential dwellings alongside associated landscaping and infrastructure.

1.3 Assessment Scope

1.3.1 The proposals have the potential to cause air quality impacts at sensitive locations. As such, an Air Quality Assessment was undertaken to:

- Assess potential impacts associated with fugitive dust emissions during the construction phase of the development;
- Assess potential impacts associated with road transport emissions during the operational phase of the development; and,
- Identify any requirement for relevant mitigation measures.

1.3.2 This is detailed in the following report.

1.4 Report Updates

1.4.1 An Air Quality Assessment was submitted in support of the planning application. A number of comments were subsequently provided by HDC relating to the methodology

utilised for the Emissions Mitigation Assessment. The following report has therefore been produced and Section 6.4 updated accordingly.

2.0 LEGISLATION AND POLICY

2.1 Legislation

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

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

2.1.2 Air Quality Target Values were also provided for several additional pollutants. It should be noted that the AQLV for $PM_{2.5}$ stated in the Air Quality Standards Regulations (2010) was amended in the Environment (Miscellaneous Amendments) (EU Exit) Regulations (2020).

2.1.3 The Air Quality Strategy (AQS) was produced by the Department for Environment, Food and Rural Affairs (DEFRA) and published on 28th April 2023[1]. 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[2] 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, Interim Target and Concentration Target for pollutants considered within this assessment.

Table 1 Air Quality Objectives/Interim Target/Concentration Target

Pollutant	Air Quality Objective/Interim Target/Concentration Target	
	Concentration (µg/m³)	Averaging Period
NO_2	40	Annual mean
	200	1-hour mean, not to be exceeded on more than 18 occasions per annum
PM_{10}	40	Annual mean
	50	24-hour mean, not to be exceeded on more than 35 occasions per annum
$PM_{2.5}$	12(a)	Annual mean
	10(b)	Annual mean

Note: (a) Interim Target to be achieved by end of January 2028.
(b) Concentration Target to be achieved by end of 2040.

2.1.6 Table 2 summarises the advice provided in DEFRA guidance[3] 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

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

Averaging Period	Objective Should Apply At	Objective Should Not Apply At
24-hour mean	All locations where the annual mean objective would apply, together with hotels Gardens of residential properties	Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term
1-hour mean	All locations where the annual mean and 24 and 8-hour mean objectives apply. Kerbside sites (for example, pavements of busy shopping streets) Those parts of car parks, bus stations and railway stations etc which are not fully enclosed, where members of the public might reasonably be expected to spend one hour or more Any outdoor locations where members of the public might reasonably be expected to spend one hour or longer	Kerbside sites where the public would not be expected to have regular access

2.2 Local Air Quality Management

2.2.1 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[4] (NPPF) was published in December 2024 and amended in February 2025. The document 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

[4] NPPF, Ministry of Housing, Communities and Local Government, 2024.

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 […]"

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[5] (NPPG) web-based resource was launched by the Department for Communities and Local Government 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?

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

7. How detailed does an air quality assessment need to be?
8. How can an impact on air quality be mitigated?

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 Horsham District Planning Framework[6] was adopted by HDC in November 2015. A review of the document indicated the following policies of relevance to this assessment:

> "Policy 1
>
> Strategic Policy: Sustainable Development
>
> When considering development proposals the Council will take a positive approach that reflects the presumption in favour of sustainable development contained in the National Planning Policy Framework. It will always work pro-actively with applicants jointly to find solutions which mean that proposals can be approved wherever possible, and to secure development that improves the economic, social and environmental conditions in the area.
>
> Planning applications that accord with the policies in this Local Plan (and, where relevant, with polices in neighbourhood plans) will be approved without delay, unless material considerations indicate otherwise.
>
> Where there are no policies relevant to the application or relevant policies are out of date at the time of making the decision then the Council will grant permission, unless material considerations indicate otherwise – taking into account whether:
>
> - Any adverse impacts of granting permission would significantly and demonstrably outweigh the benefits, when assessed against the policies in the National Planning Policy Framework taken as a whole; or

6 Horsham District Planning Framework, HDC, 2015.

- Specific policies in that Framework indicate that development should be restricted."

"Policy 24

Strategic Policy: Environmental Protection

The high quality of the district's environment will be protected through the planning process and the provision of local guidance documents. Taking into account any relevant Planning Guidance Documents, developments will be expected to minimise exposure to and the emission of pollutants including noise, odour, air and light pollution and ensure that they:

[…]

4. Minimise the air pollution and greenhouse gas emissions in order to protect human health and the environment;
5. Contribute to the implementation of local Air Quality Action Plans and do not conflict with its objectives;
6. Maintain or reduce the number of people exposed to poor air quality including odour. Consideration should be given to development that will result in new public exposure, particularly where vulnerable people (e.g. the elderly, care homes or schools) would be exposed to the areas of poor air quality; […]"

2.6.2 The Sussex Air Quality Partnership has produced the 'Air Quality and Emissions Mitigation Guidance for Sussex'[7] document in order to provide guidance on air quality considerations that should be made in relation to new developments. The guidance focusses on measures to reduce transport and construction related emissions from proposals in the district.

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

[7] Air Quality and Emissions Mitigation Guidance for Sussex, Sussex Air Quality Partnership, 2021.

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 therefore 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'[8].

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_{10}.

3.2.4 The assessment steps are detailed below.

8 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	• Total site area greater than 110,000m^2 • Potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size) • More than 10 heavy earth moving vehicles active at any one time • Formation of bunds greater than 6m in height

Magnitude	Activity	Criteria
	Construction	• Total building volume greater than 75,000m^3 • On site concrete batching • Sandblasting
	Trackout	• More than 50 Heavy Duty Vehicle (HDV) trips per day • Potentially dusty surface material (e.g. high clay content) • Unpaved road length greater than 100m
Medium	Earthworks	• Total site area 18,000m^2 to 110,000m^2 • 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 12,000m^3 to 75,000m^3 • 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 18,000m^2 • Soil type with large grain size (e.g. sand) • Less than 5 heavy earth moving vehicles active at any one time • Formation of bunds less than 3m in height
	Construction	• Total building volume less than 12,000m^3 • 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

3.2.10 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	• Users expect high levels of amenity • High aesthetic or value property • People expected to be present continuously for extended periods of time • Locations where members of the public are exposed over a time period relevant to the AQO for PM_{10}. e.g. residential properties, hospitals, schools and residential care homes	• Internationally or nationally designated site e.g. Special Area of Conservation
Medium	• Users would expect to enjoy a reasonable level of amenity • Aesthetics or value of their property could be diminished by soiling • People or property wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land e.g. parks and places of work	• Nationally designated site e.g. Sites of Special Scientific Interest
Low	• Enjoyment of amenity would not reasonably be expected • Property would not be expected to be diminished in appearance • Transient exposure, where people would only be expected to be present for limited periods. e.g. public footpaths, playing fields, shopping streets, farmland, short term car parks and roads	• Locally designated site e.g. Local Nature Reserve

3.2.11 The 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

Receptor Sensitivity	Number of Receptors	Distance from the Source (m)			
		Less than 20	Less than 50	Less than 100	Less than 250
	1 - 10	Medium	Low	Low	Low
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_{10} 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^3	More than 100	High	High	High	Medium
		10 - 100	High	High	Medium	Low
		1 - 10	High	Medium	Low	Low
	28 - 32µg/m^3	More than 100	High	High	Medium	Low
		10 - 100	High	Medium	Low	Low
		1 - 10	High	Medium	Low	Low
	24 - 28µg/m^3	More than 100	High	Medium	Low	Low
		10 - 100	High	Medium	Low	Low
		1 - 10	Medium	Low	Low	Low
	Less than 24µg/m^3	More than 100	Medium	Low	Low	Low
		10 - 100	Low	Low	Low	Low
		1 - 10	Low	Low	Low	Low
Medium	Greater than 32µg/m^3	More than 10	High	Medium	Low	Low
		1 - 10	Medium	Low	Low	Low
	28 - 32µg/m^3	More than 10	Medium	Low	Low	Low
		1 - 10	Low	Low	Low	Low

Receptor Sensitivity	Background Annual Mean PM_{10} Concentration	Number of Receptors	Distance from the Source (m)			
			Less than 20	Less than 50	Less than 100	Less than 250
	24 - 28µg/m^3	More than 10	Low	Low	Low	Low
		1 -10	Low	Low	Low	Low
	Less than 24µg/m^3	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
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[9] 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

3.3.1 The development has the potential to increase concentrations of NO_2, PM_{10} and $PM_{2.5}$ as a result of road traffic exhaust emissions associated with vehicles travelling to and from the site during the operational phase. An assessment was therefore undertaken using the criteria contained within the IAQM 'Land-Use Planning & Development Control: Planning for Air Quality'[10] 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. If any of the following apply:

[9] Guidance on the Assessment of Dust from Demolition and Construction V2.2, IAQM, 2024.

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

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

B. Coupled with any of the following:

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

3.3.3 Should these criteria not be met, then the IAQM guidance[11] considers air quality impacts associated with a scheme to be **not significant** and no further assessment is required.

3.3.4 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.

3.3.5 Should these criteria not be met, then the IAQM guidance[12] considers air quality impacts associated with a scheme to be **not significant** and no further assessment is required. Where the screening criteria is met, further assessment including atmospheric dispersion modelling of impacts may be required.

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

12 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), HDC has undertaken Review and Assessment of air quality within their area of jurisdiction. This process has indicated that annual mean NO_2 concentrations are above the AQO within the district. Two AQMAs have therefore been declared. The closest of these to the site is described as follows:

> "Storrington town centre incorporating West Street, the High Street, and part of School Hill and Manleys Hill."

4.2.2 The site is located approximately 4km north-east of the AQMA. It is considered unlikely the proposals would cause air quality impacts over a distance of this magnitude. As such, the AQMA has not been considered further in the context of this assessment.

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

4.3 Air Quality Monitoring

4.3.1 Monitoring of pollutant levels is undertaken by HDC throughout their area of jurisdiction. Recent NO_2 concentrations recorded in the vicinity of the site, as reported in the '2024 Air Quality Annual Status Report (ASR)'[13], are shown in Table 9.

[13] 2024 Air Quality ASR, HDC, 2024.

Table 9 Monitoring Results - NO_2

Monitor		Annual Mean NO_2 Concentration (µg/m³)			
		2020	2021	2022	2023
HO4	Storrington AURN	17.4	20.1	17.6	17.4
38	Storrington 14n	27.8	25.8	26.3	23.5
40	Storrington 15n	14.9	15.4	14.6	14.7

4.3.2 As shown in Table 9, annual mean NO_2 concentrations were below the AQO of 40µg/m³ at all monitors in recent years.

4.3.3 Recent PM_{10} concentrations recorded in the vicinity of the site, as reported in the '2024 Air Quality Annual Status Report (ASR)'[14], are shown in Table 10.

Table 10 Monitoring Results - PM_{10}

Monitor		Annual Mean PM_{10} Concentration (µg/m³)			
		2020	2021	2022	2023
HO4	Storrington AURN	-(a)	-(a)	14.0	13.7

Note: (a) Data not available.

4.3.4 As shown in Table 10, annual mean PM_{10} concentrations were below the AQO of 40µg/m³ at the HO4 - Storrington AURN, monitor in recent years.

4.3.5 Recent $PM_{2.5}$ concentrations recorded in the vicinity of the site, as reported in the '2024 Air Quality Annual Status Report (ASR)'[15], are shown in Table 11.

Table 11 Monitoring Results - $PM_{2.5}$

Monitor		Annual Mean $PM_{2.5}$ Concentration (µg/m³)			
		2020	2021	2022	2023
HO4	Storrington AURN	-(a)	-(a)	7.3	7.7

Note: (a) Data not available.

14 2024 Air Quality ASR, HDC, 2024.

15 2024 Air Quality ASR, HDC, 2024.

4.3.6 As shown in Table 10, annual mean $PM_{2.5}$ concentrations were below the Concentration Target of 10µg/m³ at the HO4 - Storrington AURN, monitor in recent years.

4.3.7 It is noted that 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. However, data for 2022 and beyond is now considered representative of post-pandemic conditions. This is supported by the IAQM[16], who have adopted the following position:

> "ambient air quality monitoring data for the year 2022 and beyond is generally considered to represent the current post-pandemic baseline."

4.3.8 Reference should be made to Figure 2 for a map of the monitoring positions.

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: 512500, 116500. Data for this location was downloaded from the DEFRA website[17] for the purpose of the assessment and is summarised in Table 12.

Table 12 Background Pollutant Concentration Predictions

Pollutant	Predicted 2025 Background Annual Mean Pollutant Concentration (µg/m³)
NO_2	7.01
PM_{10}	10.47
$PM_{2.5}$	5.93

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

16 Use of 2020 and 2021 Monitoring Datasets - IAQM Position Statement V1.1, IAQM, 2023.

17 http://uk-air.defra.gov.uk/data/laqm-background-maps?year=2021.

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 development boundary. These are summarised in Table 13.

Table 13 Earthworks and Construction Dust Sensitive Receptors

Distance from Site Boundary (m)	Approximate Number of Human Receptors	Approximate Number of Ecological Receptors
Up to 20	10 - 100	0
Up to 50	10 - 100	0
Up to 100	10 - 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 14.

Table 14 Trackout Dust Sensitive Receptors

Distance from Site Access Route (m)	Approximate Number of Human Receptors	Approximate Number of Ecological Receptors
Up to 20	10 - 100	0
Up to 50	10 - 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 was 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 Step 1 - Screen the Need for an Assessment

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

5.2.2 The potential for impacts at sensitive locations depends significantly on local meteorology during the undertaking of dust generating activities, with the most significant effects likely to occur during dry and windy conditions.

5.2.3 The desk-study undertaken to inform the baseline identified a number of sensitive receptors within 250m of the site boundary. As such, a detailed assessment of potential dust impacts was required.

5.3 Step 2a - Define the Potential Dust Emission Magnitude

Earthworks

5.3.1 Earthworks will primarily involve excavating material, haulage, tipping and stockpiling, as well as site levelling and landscaping. The area of the proposed development site is between 18,000m^2 and 110,000m^3. In accordance with the criteria outlined in Table 3, the magnitude of potential dust emissions from earthworks is therefore **medium**.

Construction

5.3.2 Due to the size of the development, the total building volume will be between 12,000m^3 and 75,000m^3. In accordance with the criteria outlined in Table 3, the magnitude of potential dust emissions from construction is therefore **medium**.

Trackout

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

5.4 Step 2b - Define the Sensitivity of the Area

Dust Soiling

5.4.1 Table 13 shows that 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**.

5.4.2 Table 14 shows that there are between 10 and 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 to be **high**.

Human Health

5.4.3 Table 12 shows the annual mean PM_{10} background concentration at the site is 10.47µg/m^3. As shown in Table 6, where the background annual mean PM_{10} concentration is below 24µg/m^3 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 considered to be **low**.

5.4.4 There are between 10 and 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 **low**.

5.5 Step 2c - Define the Risk of Dust Impacts

5.5.1 The derived dust emission magnitude for each activity has been 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 15.

Table 15 Summary of Potential Unmitigated Dust Risks

Potential Impact	Activity	Step 2A - Dust Emission Magnitude	Step 2B - Sensitivity of the Area	Step 2C - Risk
Dust Soiling	Earthworks	Medium	High	Medium
	Construction	Medium	High	Medium
	Trackout	Medium	High	Medium
Human Health	Earthworks	Medium	Low	Low
	Construction	Medium	Low	Low
	Trackout	Medium	Low	Low

5.5.2 As indicated in Table 15, the potential risk of dust soiling is **medium** from all activities. The potential risk of human health impacts is **low** from all activities.

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

5.6 Step 3 - Site-specific Mitigation

5.6.1 The IAQM guidance[18] 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 16. 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.

[18] Guidance on the Assessment of Dust from Demolition and Construction V2.2, IAQM, 2024.

Table 16 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, which may include measures to control other emissions, approved by the LA
Site management	• Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken • Make the complaints log available to the LA upon request • Record any exceptional incidents that cause dust and/or air emissions, either on- or off- site, and the action taken to resolve the situation in the log book
Monitoring	• Carry out regular site inspections, record inspection results, and make an inspection log available to the LA upon request • Increase the frequency of site inspections when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions
Site preparation	• Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible • Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site • Fully enclose site or specific operations where there is a high potential for dust production and the site is 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 and burning of waste materials
Earthworks	• Re-vegetate earthworks and exposed areas/soils stockpiles to stabilise surfaces as soon as practicable • Use Hessian, mulches or tackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable • Only remove the cover in small areas during work and not all at once
Construction	• Avoid scabbling (roughening of concrete surfaces) if possible • Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out • Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery • For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust
Trackout	• Use water-assisted dust sweeper on access and local roads, if required • Avoid dry sweeping of large areas • Ensure vehicles entering and leaving site are covered to prevent escape of materials • Implement a wheel washing system, if required • 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 • Access gates to be located at least 10m from receptors where possible

5.7 Step 4 - Determine Significant Effects

5.7.1 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[19].

[19] 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 Stage 1 Screening Criteria

6.2.1 The development has the potential to increase concentrations of NO_2, PM_{10} and $PM_{2.5}$ as a result of road traffic exhaust emissions associated with vehicles travelling to and from the site during the operation. The proposals have therefore been assessed against the IAQM[20] Stage 1 screening criteria detailed in Section 3.3. The development includes more than ten dwellings, coupled with more than ten car parking spaces. As such, the Stage 2 Screening Criteria have been considered below.

6.3 Stage 2 Screening Criteria

6.3.1 Information provided by i-Transport, the Transport Consultants for the project, indicated the development is predicted to generate 378 daily LDV movements and no HDV trips.

6.3.2 Based on the above information, the proposal is not predicted to change LDV flows by more than 500 AADT on any individual road link. Additionally, the proposals do not include significant highway realignment or the introduction of a junction and there will not be more than 100 HDV movements per day. As such, potential air quality impacts associated with operational phase road vehicle exhaust emissions are predicted to be **not significant**, in accordance with the IAQM[21] screening criteria shown in Section 3.3.

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

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

6.4 Air Quality and Emissions Mitigation Guidance for Sussex

6.4.1 The Sussex Air Quality Partnership have developed Air Quality and Emissions Mitigation Guidance for Sussex[22] to improve air quality throughout the county and encourage emissions reductions to improve the environment and health of the population.

6.4.2 The guidance[23] provides a methodology for determining the scale of a development and the air quality mitigation required for the relevant banding. Review of the relevant criteria indicated the proposals were classed as a **major** development as:

- The number of dwellings to be provided is ten or more.

6.4.3 Based on the development classification, an Emissions Mitigation Assessment is required to determine the appropriate amount of required mitigation. This is summarised in the following Section.

Emissions Mitigation Assessment

6.4.4 The guidance[24] sets out an Emissions Mitigation Assessment methodology in order to assess the local emissions from a development and determine the appropriate level of mitigation required to help reduce the potential effect on health and/or the local environment. The guidance has been used in combination with the DEFRA Air Quality Appraisal: Damage Costs Toolkit[25].

6.4.5 The first step of the Emissions Mitigation Assessment is to undertake a calculation to identify the monetary value of predicted emissions from the proposals. In order to simplify the assessment procedure, DEFRA has produced an Air Quality Appraisal: Damage Costs Toolkit[26] which uses the following Steps to calculate the relevant damage costs associated with a development:

22 Air Quality and Emissions Mitigation Guidance for Sussex, Sussex Air Quality Partnership, 2021.

23 Air Quality and Emissions Mitigation Guidance for Sussex, Sussex Air Quality Partnership, 2021.

24 Air Quality and Emissions Mitigation Guidance for Sussex, Sussex Air Quality Partnership, 2021.

25 Air Quality Appraisal: Damage Cost Toolkit, DEFRA, 2023.

26 Air Quality Appraisal: Damage Cost Toolkit, DEFRA, 2023.

- Step 1 - Identify and Quantify the Change in Emissions;
- Step 2 - Identify which Damage Cost Values to Use;
- Step 3 - Convert Damage Cost Values to the Relevant Base Year Prices;
- Step 4 - Uplift the Damage Costs by 2% Year-on-Year;
- Step 5 - Calculate the Benefits for Each Year; and,
- Step 6 - Discount the Benefits Across the Period of Assessment.

6.4.6 The calculation in Step 1 uses the Emissions Factor Toolkit (EFT) to determine the amount of transport related pollutant emissions the development is likely to produce over a five year period. The input data values used in the assessment are shown in Table 17.

6.4.7 It should be noted that the calculation has been undertaken using the most recent damage costs released by DEFRA in March 2023.

Table 17 Emissions Mitigation Assessment - Inputs

Data	Value
Daily Vehicle Movements Produced by Development	378
HDV Proportion (%)	0
Average Speed (km/h)	50
Average Trip Length (km)	10
NO_x Damage Costs (£/tonne)[(a)]	5,219
$PM_{2.5}$ Damage Costs (£/tonne)[(a)]	33,908

Note: (a) Road transport rural Central Damage Cost.

6.4.8 The projected yearly emissions for each of the five years from opening are shown in Table 18.

Table 18 Emissions Mitigation Assessment - Projected Emissions

Pollutant	Emissions (tonnes/year)				
	2027	2028	2029	2030	2031
NO_x	0.202	0.175	0.150	0.127	0.107
$PM_{2.5}$	0.024	0.024	0.023	0.023	0.023

6.4.9 The results shown in Table 18 were input into the Appraisal Toolkit in order to calculate the relevant damage costs for the development. This is shown in Table 19.

Table 19 Damage Cost Calculation

Data	Value (tonnes/year)				
	2027	2028	2029	2030	2031
Annual Cost of NO_x Emissions (£)	1,052	899	759	635	527
Annual Cost of $PM_{2.5}$ Emissions (£)	813	787	764	742	723
Total Annual Exposure Cost Value (£)[(a)]	1,865	1,686	1,523	1,377	1,250
Total Five Year Exposure Cost Value (£)	**7,701**				

Note: (a) Cost value based on price base year of 2025.

6.4.10 As shown in Table 19, the total damage costs were calculated as £7,701.

Mitigation

6.4.11 The guidance[27] provides a number of mitigation measures that should be considered for inclusion within **major** developments. These were reviewed and those to be incorporated within the proposals include:

- Provision of 74 active Electric Vehicle (EV) charging points. This represents one per dwelling. In accordance with the WSCC Guidance on parking at New Developments[28], this exceeds the minimum requirement of 20% of all parking spaces, providing an additional 59 charging points;
- Provision of secure cycle storage for each dwelling;
- £150 Sustainable Travel Voucher for the first occupier of each dwelling;
- Information packs for future residents detailing sustainable transport options such as local cycle networks, public transport timetables and car sharing schemes; and,
- Provision of a Travel Plan and Travel Plan Co-ordinator.

27 Air Quality and Emissions Mitigation Guidance for Sussex, Sussex Air Quality Partnership, 2021.

28 WSCC Guidance on Parking at New Developments, WSCC, 2020.

6.4.12 In addition to the above, the development will adhere to Fugitive Dust Emission Mitigation Measures throughout construction. These are outlined in Table 16.

6.4.13 Associated costs for the mitigation measures were provided by i-Transport. These are summarised in Table 20.

Table 20 Mitigation Costs

Mitigation Measure	Cost (£)
Additional EV Charging Spaces(a)	£59,000
Sustainable Travel Vouchers	£11,100
Travel Plan	£1,500

Note: (a) The number of EV charging spaces above the minimum requirement of 20%.

6.4.14 Costs for all of the mitigation measures were not available at the time of reporting. However, those available equate to a sum of £71,500. This is greater than the damage cost of £7,701. As such, the identified measures are considered appropriate for the development and meet the requirements of the Air Quality and Emissions Mitigation Guidance for Sussex[29].

6.5 Interim Planning Guidance for $PM_{2.5}$

6.5.1 Interim Planning Guidance[30] on the consideration of the $PM_{2.5}$ targets identified in the Environment Act (2021) in planning decisions has been produced by DEFRA. This requires evidence that the key sources of air pollution within a development have been identified and appropriate action to minimise $PM_{2.5}$ and its precursors as far as is reasonably practicable be provided in support of planning applications. To assist the process, two questions and associated considerations are provided. These are summarised in Table 21, along with the development response.

29 Air Quality and Emissions Mitigation Guidance for Sussex, Sussex Air Quality Partnership, 2021.

30 https://uk-air.defra.gov.uk/pm25targets/planning.

Table 21 Interim Planning Guidance Questions

Question	Response
How has exposure to $PM_{2.5}$ been considered when selecting the development site? • Site proximity to people (particularly large populations and/or vulnerable groups, e.g. schools, hospitals, care homes, areas of deprivation) and the impact of the development on these • Site proximity to pollution sources and the impact of these on users of the development • Exposure and emissions during both construction and in-use	The site is bordered to the north by Rectory Lane, to the east and west by residential properties and to the south by woodland. It is situated away from large populations and there are no schools, hospitals or care homes within the immediate vicinity of the site The site is located adjacent to Rectory Lane. However, this does not serve as a major road into Ashington. As such, vehicle movements and associated exhaust emissions would be expected to be minimal. Users of the development are therefore unlikely to be exposed to any existing air quality issues As outlined in Table 16, a number of mitigation measures will be used throughout the construction phase in order to reduce fugitive dust emissions as far as practicable. This will control potential exposure at off-site locations

What actions and/or mitigations have been considered to reduce $PM_{2.5}$ exposure for development users and nearby receptors (houses, hospitals, schools etc.) and to reduce emissions of $PM_{2.5}$ and its precursors?
• Site layout
• The development's design
• Technology used in the construction or installed for use in the development
• Construction and future use of the development
	In order to reduce emissions of $PM_{2.5}$ across the site, as well as at nearby receptors, the following measures have also been included:
	• Provision of EV charging spaces to encourage the use of low emission vehicles
	• Production of a Travel Plan to encourage sustainable modes of transport to and from the site including:
	  • Provision of secure cycle storage to encourage the use of sustainable transport modes to and from the site
	  • £150 Sustainable Travel Voucher for the first occupier of each dwelling; and,
	  • Information packs for future residents detailing sustainable transport options such as local cycle networks, public transport timetables and car sharing schemes
	Further to the above, in order to reduce emissions during the construction phase, a number of mitigation measures will be used to minimise dust generation from associated activities

6.5.2 Based on the responses provided in Table 21 and the assessment results, as outlined in Sections 6.3, it is considered that the development has identified key sources of air pollution and taken appropriate action to minimise emissions of $PM_{2.5}$.

7.0 CONCLUSION

7.1.1 Redmore Environmental Ltd was commissioned by Penn Gardens Properties Ltd to undertake an Air Quality Assessment in support of a residential development on land east of Mousdell Close, Ashington.

7.1.2 The development has the potential to cause air quality impacts at sensitive locations during the construction and operational phases. As such, an Air Quality Assessment was undertaken in order to determine baseline conditions and consider potential effects as a result of the proposals.

7.1.3 During the construction phase of the development there is the potential for air quality impacts from fugitive dust emissions from the site. These were assessed in accordance with the IAQM methodology. Site-specific dust control measures were subsequently determined based on the identified risk ratings. Subject to implementation, residual air quality impacts from dust generated by earthworks, construction and trackout activities are predicted to be **not significant**.

7.1.4 Potential impacts during the operational phase of the proposed development may occur due to road traffic exhaust emissions associated with vehicles travelling to and from the site. These were assessed against the screening criteria provided within the IAQM guidance[31]. Due to the low number of vehicle movements generated by the site, road traffic exhaust impacts were predicted to be **not significant**.

7.1.5 Potential emissions from the proposals were assessed in line with the requirements of the Air Quality and Emissions Mitigation Guidance for Sussex. This included completion of an Emissions Mitigation Assessment in order to determine the appropriate level of mitigation required for the scheme. Measures included as part of the proposals are consider suitable for a scheme of this size and nature and meet the requirements of the guidance.

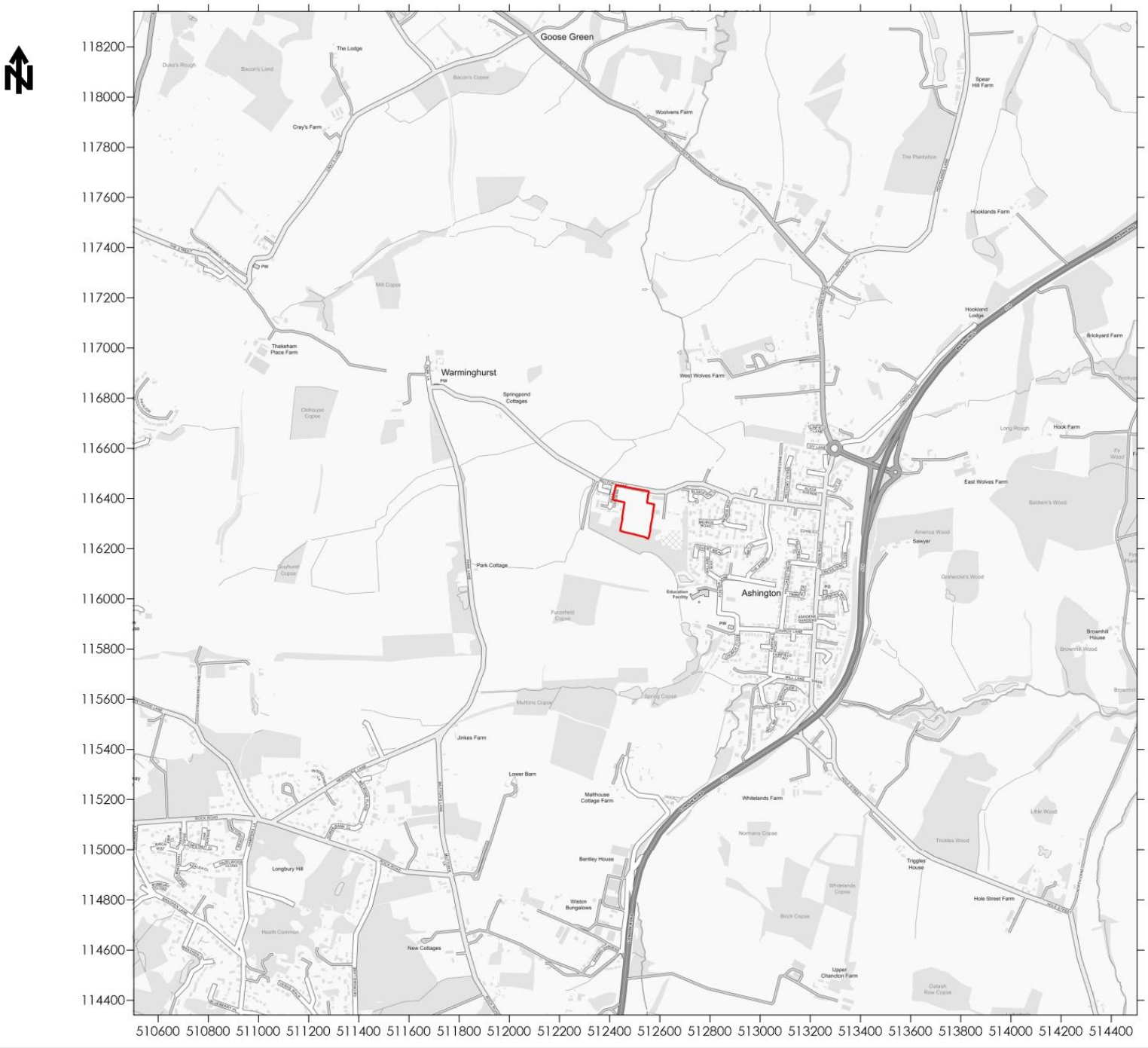
7.1.6 Based on the assessment results, air quality factors are not considered a constraint to planning consent for the development.

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

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
DEFRA	Department for Environment, Food and Rural Affairs
EFT	Emissions Factor Toolkit
EV	Electric Vehicle
HDC	Horsham District Council
HDV	Heavy Duty Vehicle
IAQM	Institute of Air Quality Management
LA	Local Authority
LAQM	Local Air Quality Management
LDV	Light Duty Vehicle
NGR	National Grid Reference
NO_2	Nitrogen dioxide
NPPF	National Planning Policy Framework
NPPG	National Planning Policy Guidance
PM_{10}	Particulate matter with an aerodynamic diameter of less than 10µm
$PM_{2.5}$	Particulate matter with an aerodynamic diameter of less than 2.5µm

Figures



Legend

Site Boundary

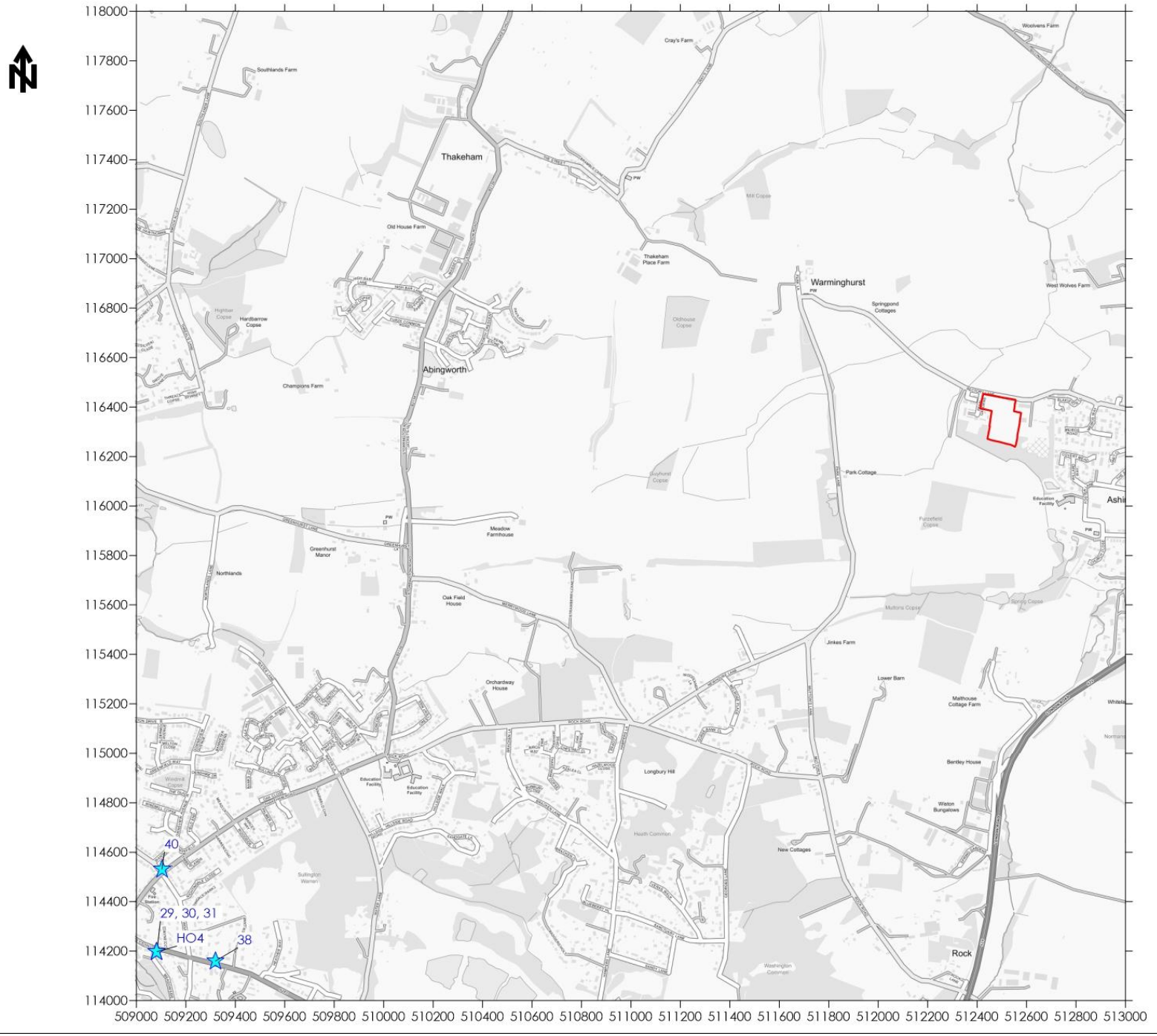
Title
Figure 1 - Site Location

Project
Mousdell Close, Ashington
Air Quality Assessment

Project Reference
9286

Client
Penn Gardens Properties Ltd

Redmore environmental
www.red-env.co.uk | 0161 7060075



Legend

Site Boundary

Monitor

Title
Figure 2 - Monitoring Locations

Project
Mousdell Close, Ashington
Air Quality Assessment

Project Reference
9286

Client
Penn Gardens Properties Ltd

Redmore environmental
www.red-env.co.uk | 0161 7060075

Appendix 1 - Curricula Vitae

CLAIRE MEDDINGS

Director

MSc, BSc (Hons), CSci, MIAQM, MIEnvSc

Tel: 0161 706 0075 | Email: Claire.Meddings@red-env.co.uk

KEY EXPERIENCE:

Claire is a Director with specialist experience in the air quality sector

Her key capabilities include:

- Production and management of Air Quality, Dust and Odour Assessments for a wide range of clients from the residential, retail, commercial, leisure and industrial and infrastructure sectors.
- Detailed dispersion modelling of road vehicle and industrial emissions using ADMS-Roads, ADMS-6 and AERMOD. 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.
- Assessment of fugitive dust impacts from a range of waste and industrial developments.
- Co-ordination and management of large-scale multi-disciplinary projects and submissions.
- Undertaken and overseeing pollutant monitoring campaigns.
- Provision of expert advice and attendance at DCO examination process.

SELECT PROJECTS SUMMARY:

Residential and Educational

Air Quality Assessments for a large number of proposed residential and educational developments across the UK. The assessments included consideration of construction phase dust emissions and mitigation was recommended to minimise fugitive dust emissions accordingly. The suitability of the sites for the proposed residential and educational uses was also assessed. The assessment utilised a range of assessment tools including relevant screening criteria, air dispersion modelling using ADMS-Roads, local air quality monitoring and Defra published assessment tools. Where required for sites in London, Air Quality Neutral assessments were also undertaken utilised the Greater London Authority guidance.

Air Quality Monitoring

Air Quality Assessments and overseeing air quality monitoring campaigns for a number of sites within Birmingham. Air dispersion modelling was undertaken and air quality monitoring utilising NO_2 diffusion tubes was carried out for use in verification of the dispersion model. Mitigation was recommended where appropriate to reduced the exposure of future uses of the sites to elevated pollutant concentrations.

Odour Assessments

Undertaken to support developments in the UK, including consideration of the impact of existing odour sources on proposed developments or to assess potential odour releases from proposed developments. A combination of field odour surveys and risk assessments were undertaken, with mitigation measures recommended where required.

Commercial and Retail

Foodstores across the UK - Air quality assessments for a number of proposed foodstores across the UK. Consideration was given to construction phase dust emissions and vehicle emissions generated by the foodstore operations. Relevant screening criteria and detailed air dispersion modelling were utilised in the assessment. Mitigation was recommended as required to minimise construction phase dust emissions.

Commercial development, Worksop - Air quality assessment and input into the EIA for a proposed large scale commercial development near Worksop. Assessments of construction phase dust and operational phase road traffic emissions were undertaken and consideration was given to both human and ecological receptors.

Industrial and Infrastructure

Greater Manchester Waste PFI Contract - Air Quality Assessments were undertaken as part of the Planning Applications and Environmental Permit applications for a number of proposed waste facilities in Greater Manchester.

Energy from Waste Development, Scotland - Air Quality Assessment and coordination of the EIA and Environmental Permit Application for a proposed Energy from Waste development in Scotland. Considered industrial emissions from flue stacks as well as additional road traffic movements generated by the development

Strategic Rail Freight Interchange, Hinckley - oversaw the Air Quality Assessment for the proposed Rail Freight Interchange and acted as expert witness as part of the Development Consent Order (DCO) examination process.

OLLY HANLON

Principal Air Quality Consultant

BSc (Hons), AMIEnvSc

Tel: 0161 706 0075 | Email: olly.hanlon@red-env.co.uk

KEY EXPERIENCE:

Olly is a Principal Environmental Consultant with specialist experience in the air quality sector. His 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 and industrial emissions using ADMS-Roads and ADMS-6. 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 (EIAs) and scoping reports for developments throughout the UK.
- Advanced canyon modelling to evaluate the impact of altered urban topography on air quality in built up areas.
- Assessment of fugitive dust impacts from a range of development sizes and mineral extraction sites.
- Production of air quality mitigation strategies specifically tailored to address issues at individual sites.
- Odour surveys to assess amenity and suitability of sites for potential future development for residential use.
- Organisation and delivery of bespoke monitoring programmes for a range of projects.

SELECT PROJECTS SUMMARY:

Medlock Street, Manchester

Air Quality Environmental Impact Assessment in support of the development of 1,014 purpose-built student accommodation units. Detailed dispersion modelling was undertaken in order to assess the potential for exposure of future occupants to any existing issues at the site, as well as air quality impacts associated with vehicles travelling to and from the scheme during operation. Modelling included complex road geometries, as well as advanced canyon inputs. The results indicated air quality conditions did not present an issue to planning consent.

Anstey Lane, Leicester

Odour Assessment in support of a residential-led development on land off Anstey Lane, Leicester. The proposals were located in close proximity to a number of eating and drinking establishments. 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 did not represent a constraint to planning consent.

Whitings Road, Barnet

Air Quality Neutral Assessment in support of a residential development comprising 35 units to determine compliance with the London Plan. Detailed consultation was undertaken with the Local Authority to ensure they were satisfied with the proposed measures aimed at reducing road vehicle exhaust emissions associated with the scheme. Following discussions and implementation of the identified strategies, compliance with the London Plan was achieved.

Honeycombe Beach, Bournemouth

Air Quality Assessment to determine air quality conditions within a covered car park serving a residential complex and evaluate the effectiveness of the existing ventilation system. Monitoring of pollutant concentrations over a three-month period at four locations at the site was undertaken. Internal concentrations of pollutants were below the relevant Work Exposure Limits (WELs) at all locations. As such, natural ventilation was considered to provide adequate control of internal air quality.

Brill Place, Camden

Organisation and delivery of a bespoke ambient monitoring programme to address a planning condition. The project included identification of appropriate monitoring equipment, agreement of the technical specifications and sampling positions with the Local Authority, as well as delivery of a text alert system to notify residents of exceedences of the relevant trigger levels and appropriate action to be taken to reduce exposure.

Matching Airport, Abbess Roding

Air Quality Assessment in support of a flexible generation facility. Dispersion modelling was undertaken to determine potential changes in pollution levels as a result of emissions from the installation and consider potential impacts at nearby sensitive receptor locations. Predicted concentrations of NO_2 were below the relevant air quality criteria at all locations of relevant exposure across all meteorological data sets modelled. The overall effects of the development were predicted to be not significant.

MEGAN POND

Air Quality Consultant

BSc (Hons), AMIAQM, AMIEnvSc

Tel: 0117 2441912 | Email: megan.pond@red-env.co.uk

KEY EXPERIENCE:

Megan is an Environmental Consultant with specialist experience in the air quality sector. Her key capabilities include:

- Production of Air Quality Assessments in accordance with Department for Environment, Food and Rural Affairs (DEFRA) methodologies for a range of residential, commercial and industrial sectors.
- Detailed dispersion modelling of road vehicle exhaust emissions using ADMS-Roads. Studies have included impact assessments 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 sites.
- Production of Air Quality Neutral Assessments in accordance with The London Plan.
- Installation and management of diffusion tube monitoring campaigns in order to determine the potential for exposure of sensitive receptors to poor air quality.

SELECT PROJECTS SUMMARY:

Whitebirk, Blackburn

Air Quality Assessment in support of a residential development comprising demolition of existing buildings and construction of 152 dwellings on land at the Whitebirk Estate, Blackburn. 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. 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.

Willow Lane, Mitcham

Air Quality Assessment in support of an industrial development off Willow Lane, Mitcham. 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_2 and PM_{10} 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. An Air Quality Neutral Assessment was also undertaken in accordance with the London Plan. Following implementation of relevant mitigation measures, the development was considered Air Quality Neutral.

Harrow Road, London

Air Quality Assessment in support of a nursery. Detailed dispersion modelling, including advanced canyon inputs, was undertaken to evaluate the potential for exposure of future occupants to any existing issues at the site. The results indicated air quality conditions did not present an issue to planning consent.

The Green, Cheadle

Air Quality Assessment in support of a new Aldi store off the Green, Cheadle. Following concerns from the Local Authority regarding the potential for traffic generated by the proposals to cause air quality impacts, dispersion modelling was undertaken in order to quantify changes in pollutant concentrations at sensitive locations in the vicinity of the site. Results revealed negligible impacts at all locations.

Holloway Road, London

Kitchen Odour Assessment undertaken in line with the EMAQ+ and DEFRA guidance in support of a new restaurant on Holloway Road, London. Site-specific odour abatement options were identified in order to conform with best practice guidance. Based on the inclusion of the specified mitigation, odour effects associated with the development were not considered a constraint to planning consent.

Wyebridge Motors, Hereford

Ambient Air Quality Monitoring in support of a residential development. The Local Authority raised concerns regarding the exposure of future residents to poor air quality as a result of pollution from the adjacent A49. Due to the irregular topography of the area, a scheme of diffusion tube monitoring was undertaken to determine baseline NO_2 concentrations at the site. Results indicated that concentrations were below the Air Quality Objective at the building façade and as such, the risk for exposure of future residents to poor air quality was not considered significant.