

Air Quality Assessment

Shermanbury Road, Partridge Green

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Executive Summary

Redmore Environmental Ltd was commissioned by Wain Estates (Land) Limited to undertake an Air Quality Assessment in support of a residential development on land at Shermanbury Road, Partridge Green.

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 demolition, 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 generated by the site, 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.

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

Table of Contents

1.0	INTRODUCTION	1
1.1	Instruction	1
1.2	Site Location and Context	1
1.3	Assessment Scope	1
2.0	LEGISLATION AND POLICY	2
2.1	Legislation	2
2.2	Local Air Quality Management	4
2.3	Dust	4
2.4	National Planning Policy	5
2.5	National Planning Practice Guidance	6
2.6	Local Planning Policy	7
3.0	METHODOLOGY	9
3.1	Introduction	9
3.2	Construction Phase Assessment	9
	Step 1 - Screen the Need for an Assessment	10
	Step 2 - Assess the Risk of Dust Impacts	10
	Step 3 - Site-specific Mitigation	15
	Step 4 - Determine Significant Effects	15
3.3	Operational Phase Assessment	16
4.0	BASELINE	18
4.1	Introduction	18
4.2	Local Air Quality Management	18
4.3	Air Quality Monitoring	18
4.4	Background Pollutant Concentrations	20
4.5	Sensitive Receptors	20
5.0	CONSTRUCTION PHASE ASSESSMENT	22
5.1	Introduction	22
5.2	Step 1 - Screen the Need for an Assessment	22
5.3	Step 2a - Define the Potential Dust Emission Magnitude	22
	Demolition	22
	Earthworks	22
	Construction	23
	Trackout	23
5.4	Step 2b - Define the Sensitivity of the Area	23

Dust Soiling	23
Human Health	23
5.5 Step 2c - Define the Risk of Dust Impacts	24
5.6 Step 3 - Site-specific Mitigation	25
5.7 Step 4 - Determine Significant Effects	27
6.0 OPERATIONAL PHASE ASSESSMENT	28
6.1 Introduction	28
6.2 Potential Development Impacts	28
6.3 Air Quality and Emissions Mitigation Guidance for Sussex	28
Development Classification	28
Emissions Mitigation Assessment	29
Mitigation	31
6.4 Interim Planning Guidance for PM _{2.5}	31
7.0 CONCLUSION	33
8.0 ABBREVIATIONS	35

Appendix

Appendix 1 - Curriculum Vitae

1.0 INTRODUCTION

1.1 Instruction

- 1.1.1 Redmore Environmental Ltd was commissioned by Wain Estates (Land) Limited to undertake an Air Quality Assessment in support of a residential development on land at Shermanbury Road, Partridge Green.

1.2 Site Location and Context

- 1.2.1 The proposed development is located on land at Shermanbury Road, Partridge Green, at approximate National Grid Reference (NGR): 519820, 119690. 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 an outline planning application for the demolition of existing buildings and structures and the erection of up to 75 dwellings with public open space, landscaping, sustainable urban drainage system and vehicular access point from Shermanbury Road. All matters reserved except for access.

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.
-

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 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 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 2025² was published in December 2025, providing long term and Interim Targets in order to reduce population exposure to PM_{2.5}. The Concentration Target for 2040 was adopted in the Environmental Targets (Fine Particulate Matter) (England) Regulations (2023).

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

² Environmental Improvement Plan 2025, DEFRA, 2025.

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 ($\mu\text{g}/\text{m}^3$)	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}	10 ^(a)	Annual mean
	10 ^(b)	Annual mean

Note: (a) Interim Target to be achieved by 2030.

(b) Concentration Target to be achieved by 2040.

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

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 Framework⁴ (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 Guidance⁵ (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 Framework⁶ 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 policies 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 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 four types to reflect their different potential impacts. These are:

- Demolition;
- Earthworks;
- Construction; and,
- Trackout.

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

- Annoyance due to dust soiling;
- Harm to ecological receptors; and,
- The risk of health effects due to a significant increase in exposure to PM₁₀.

3.2.4 The assessment steps are detailed below.

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	Demolition	• Total building volume greater than 75,000m³ • Potentially dusty construction material (e.g. concrete) • On site crushing and screening • Demolition activities greater than 12m above ground level

Magnitude	Activity	Criteria
	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
	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	Demolition	- Total building volume 12,000m³ to 75,000m³ - Potentially dusty construction material - Demolition activities 6m to 12m above ground level
	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	Demolition	- Total building volume less than 12,000m³ - Construction material with low potential for dust release (e.g. metal cladding or timber) - Demolition activities less than 6m above ground levels - Demolition during wetter months
	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 3m in height

Magnitude	Activity	Criteria
	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

3.2.10 Step 2B defined 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 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

3.2.11 The criteria for determining the sensitivity of the area to dust soiling effects on people and property is summarised in Table 5.

Table 5 Construction Dust - Sensitivity of the Area to Dust Soiling Effects on People and Property

Receptor Sensitivity	Number of Receptors	Distance from the Source (m)			
		Less than 20	Less than 50	Less than 100	Less than 250
High	More than 100	High	High	Medium	Low
	10 - 100	High	Medium	Low	Low
	1 - 10	Medium	Low	Low	Low
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

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
		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
	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 demolition activities.

Table 8 Construction Dust – Dust Risk Category from Demolition Activities

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

3.2.16 Table 9 outlines the risk category from earthworks, construction and trackout activities.

Table 9 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

3.2.17 Step 3 requires the identification of site-specific mitigation measures within the IAQM guidance⁹ 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

3.2.18 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

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

effective mitigation. Experience shows that this is normally possible. Hence the residual effect will normally be **not significant**.

3.2.19 The determination of significance relies on professional judgement and reasoning should be provided as far as practicable. The IAQM guidance¹⁰ 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. An assessment was therefore undertaken using the criteria contained within the IAQM 'Land-Use Planning & Development Control: Planning for Air Quality'¹¹ 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:

- 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.

3.3.3 Should these criteria not be met, then the IAQM guidance¹² considers air quality impacts

¹⁰ Guidance on the Assessment of Dust from Demolition and Construction V2.2, IAQM, 2024.

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

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

associated with a scheme to be **not significant** and no further assessment is required.

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 its area of jurisdiction. This process has indicated that annual mean NO₂ 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:

"Horsham Cowfold AQMA: Cowfold town centre incorporating The Street, part of Station Road and Bolney Road."

- 4.2.2 The site is located approximately 3km south-west 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 its area of jurisdiction. Recent NO₂ concentrations recorded in the vicinity of the development, as provided in HDC's '2025 Air Quality Annual Status Report (ASR)'¹³, are shown in Table 10.

¹³ 2025 Air Quality ASR, HDC, 2025.

Table 10 Monitoring Results – NO₂

Monitoring Site		Monitored NO ₂ Concentration (µg/m ³)		
		2022	2023	2024
Cowfold 1, Cowfold 2	The Street (between the roundabouts)	26.4	24.1	21.5
Cowfold 3	Station Road (near roundabout)	25.5	24.1	21.9
Cowfold 4	Brook Hill (near roundabout)	20.3	19.5	17.5
Cowfold 5N	Station Road / Thornden	20.3	18.7	(a)
Cowfold 6N	South Leas Bus Stop (A281)	20.3	19.6	16.5
Cowfold 7n	3 Huntscroft Gardens, Bolney Road	31.7	28.3	24.9
Cowfold 8n	Fairfield Cottages	10.3	8.9	8.1
Cowfold 9N	Oakfield Road / Bolney Road	18.7	(b)	(b)
Cowfold 9N.1	Oakleigh (Bolney Road)	(c)	18.2	(a)
Cowfold AU A, Cowfold AU B, Cowfold AU C	Cowfield AQMS	20.0	17.5	15.8
HO5	Cowfold	21.0	24.6	16.2

Note: (a) Monitor decommissioned in 2023.

(b) Monitor decommissioned in 2022.

(c) Monitor commissioned in 2023.

4.3.2 As shown in Table 10, annual mean NO₂ concentrations were below the AQO of 40µg/m³ at all monitoring locations in recent years. Reference should be made to Figure 2 for a map of the survey positions.

4.3.3 HDC undertakes monitoring of PM_{2.5} concentrations within the vicinity of the site at the HO5 monitor, however as data capture was below 25% within recent years, data was not provided.

4.3.4 HDC does not undertake PM₁₀ monitoring 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: 519500, 119500. Data for this location was downloaded from the DEFRA website¹⁴ for the purpose of the assessment and is summarised in Table 11.

Table 11 Background Pollutant Concentration Predictions

Pollutant	Predicted 2025 Background Annual Mean Pollutant Concentration ($\mu\text{g}/\text{m}^3$)
NO ₂	7.37
PM ₁₀	10.47
PM _{2.5}	6.27

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

4.5 **Sensitive Receptors**

- 4.5.1 A sensitive receptor is defined as any location which may be affected by changes in air quality as a result of a development. Receptors sensitive to potential dust impacts during demolition, 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 12.

Table 12 Demolition, Earthworks and Construction Dust Sensitive Receptors

Distance from Site Boundary (m)	Approximate Number of Human Receptors	Approximate Number of Ecological Receptors
Up to 20	10 - 100	0
Up to 50	10 - 100	0
Up to 100	10 - 100	-
Up to 250	More than 100	-

¹⁴ <http://uk-air.defra.gov.uk/data/laqm-background-maps?year=2021>.

- 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 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	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 demolition, 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

Demolition

- 5.3.1 Demolition will be undertaken at the start of the construction phase and will involve clearance of the existing buildings on site. The total building volume to be demolished is less than 12,000m³. In accordance with the criteria outlined in Table 3, the magnitude of potential dust emissions from demolition is therefore **small**.

Earthworks

- 5.3.2 Earthworks will primarily involve excavating material, haulage, tipping and stockpiling, as well as site levelling and landscaping. The area of the site is between 18,000m² and
-

110,000m². In accordance with the criteria outlined in Table 3, the magnitude of potential dust emissions from earthworks is therefore **medium**.

Construction

- 5.3.3 Due to the size of the development, the total building volume will be between 12,000m³ and 75,000m³. In accordance with the criteria outlined in Table 3, the magnitude of potential dust emissions from construction is therefore **medium**.

Trackout

- 5.3.4 Based on the site area, it is anticipated that the unpaved road length may be greater than 100m during certain stages of construction. In accordance with the criteria outlined in Table 3, the magnitude of potential dust emissions from trackout is therefore **large**.

5.4 Step 2b - Define the Sensitivity of the Area

Dust Soiling

- 5.4.1 Table 12 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 demolition, earthworks and construction, as defined using the criteria summarised in Table 5, is therefore considered to be **high**.
- 5.4.2 Table 13 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 11 shows the 2025 annual mean PM₁₀ background concentration at the site is 10.47µg/m³. As shown in Table 6, where the background annual mean PM₁₀ concentration is below 24µg/m³ 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 demolition, 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 and Table 9. A summary of the risk from each dust generating activity is provided in Table 14.

Table 14 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	Demolition	Small	High	Medium
	Earthworks	Medium	High	Medium
	Construction	Medium	High	Medium
	Trackout	Large	High	High
Human Health	Demolition	Small	Low	Negligible
	Earthworks	Medium	Low	Low
	Construction	Medium	Low	Low
	Trackout	Large	Low	Low

5.5.2 As indicated in Table 14, the potential risk of dust soiling is **high** from trackout and **medium** from demolition, earthworks and construction. The potential risk of human health impacts is **low** from earthworks, construction and trackout and **negligible** from demolition.

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 guidance¹⁵ 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 15. These may be reviewed prior to the commencement of construction works and will be incorporated into a Construction Environmental Management Plan.

Table 15 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 or similar, 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 • Hold regular liaison meetings with other high risk construction sites within 250m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised
Monitoring	• Undertake daily on-site and off-site inspection to monitor dust, record inspection results, and make the log available to the LA upon request • 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

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

Issue	Control Measure
Site preparation	• Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible • Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site • Fully enclose site or specific operations where there is a high potential for dust production and they are active for an extensive period • Avoid site runoff of water or mud • 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 • Impose and signpost a maximum speed limit of 15mph on surfaced and 10mph on unsurfaced haul roads and work areas • Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials
Operations	• Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques • Ensure an adequate water supply on the site for effective dust suppression, using non-potable water where possible and appropriate • Use enclosed chutes and conveyors and covered skips • Minimise drop heights and use fine water sprays wherever appropriate • Ensure equipment is available to clean any dry spillages, and clean up spillages as soon as reasonably practicable using wet cleaning methods
Waste management	• Avoid bonfires and burning of waste materials
Demolition	• Ensure effective water suppression is used during demolition operations • Avoid explosive blasting, using appropriate manual or mechanical alternatives • Bag and remove any biological debris or damp down such material before demolition
Construction	• Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out

Issue	Control Measure
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 15 are implemented, the residual impact from all dust generating activities is predicted to be **not significant**, in accordance with the IAQM guidance¹⁶.

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

6.0 OPERATIONAL PHASE ASSESSMENT

6.1 Introduction

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

6.2 Potential Development Impacts

- 6.2.1 Information provided by Eddisons, the Transport Consultants for the project, indicated the development is predicted to generate 431 daily vehicle movements. It should be noted that the development will not produce any HDV trips.
- 6.2.2 Based on the above, the development is not predicted to result in an increase of LDV flows of more than 500 AADT or HDV flows of more than 100 AADT on any individual road link. Additionally, the proposals do not include significant highway realignment or the introduction of a junction. As such, potential air quality impacts associated with the operational phase road vehicle exhaust emissions are predicted to be **not significant**, in accordance with the IAQM guidance¹⁷.
- 6.2.3 It should be noted that the trip generation was informed by a previous iteration of the scheme comprising up to 85 dwellings. The scheme has since been reduced to 75 dwellings. As such, the approach to the assessment is considered to be robust.

6.3 Air Quality and Emissions Mitigation Guidance for Sussex

Development Classification

- 6.3.1 The Sussex Air Quality Partnership have developed Air Quality and Emissions Mitigation Guidance for Sussex¹⁸ to improve air quality throughout the county and encourage emissions reductions to improve the environment and health of the population.

¹⁷ Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.

¹⁸ Air Quality and Emissions Mitigation Guidance for Sussex, Sussex Air Quality Partnership, 2021.

6.3.2 The guidance¹⁹ 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 10 or more.

6.3.3 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

6.3.4 The guidance²⁰ 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.

6.3.5 The first step of the Emissions Mitigation Assessment is to undertake a calculation to identify the monetary value of predicted emissions from the proposals and detail the mitigation measures to control air quality impacts associated with the scheme.

6.3.6 The calculation uses the Emissions Factor Toolkit (EFT) to calculate the amount of transport related pollutant emissions the development is likely to produce. The output is then multiplied by the Interdepartmental Group on Costs and Benefits damage costs for the key pollutants nitrogen oxides (NO_x) and PM_{2.5} and finally multiplied by 5 to provide a five-year exposure cost value. This is the value of mitigation that is expected to be spent on measures to reduce the impact of the proposed development. This has been summarised in the following equation:

$$\text{5 Year Exposure Cost Value} = \text{EFT Output} \times \text{Damage Costs} \times 5$$

6.3.7 It should be noted that the calculation has been undertaken using the most recent damage costs released by DEFRA in December 2025²¹.

¹⁹ Air Quality and Emissions Mitigation Guidance for Sussex, Sussex Air Quality Partnership, 2021.

²⁰ Air Quality and Emissions Mitigation Guidance for Sussex, Sussex Air Quality Partnership, 2021.

²¹ Air Quality Appraisal: Damage Cost Guidance, DEFRA, 2025.

6.3.8 The input data values used in the assessment are shown in Table 16.

Table 16 Emissions Mitigation Assessment - Inputs

Data	Value
Daily Vehicle Movements Produced by Development	431
HDV Proportion (%)	0
Average Speed (km/h)	50
Average Trip Length (km)	10
NO _x Damage Costs (£/tonne) ^(a)	5,944
PM _{2.5} Damage Costs (£/tonne) ^(a)	49,192

Note: (a) Road Transport Rural Central Damage Cost.

6.3.9 The projected yearly emissions for each of the five years from opening are shown in Table 17.

Table 17 Emissions Mitigation Assessment - Projected Emissions

Data	Value (tonnes/year)				
	2028	2029	2030	2031	2032
NO _x Output	0.20	0.17	0.14	0.12	0.10
PM _{2.5} Output	0.03	0.03	0.03	0.03	0.03

6.3.10 The calculation is shown in Table 18.

Table 18 Emissions Mitigation Assessment - Cost Calculation

Data	Value				
	2028	2029	2030	2031	2032
Annual Cost of NO _x Emissions (£)	1,197	1,026	871	734	616
Annual Cost of PM _{2.5} Emissions (£)	1,335	1,315	1,297	1,283	1,271
Total Annual Exposure Cost Value (£)	2,532	2,341	2,168	2,017	1,887
Total Five Year Exposure Cost Value (£)	10,946				

6.3.16 As shown in Table 18, the total damage costs were calculated as £10,946.

Mitigation

6.3.17 There are a number of potential mitigation options for inclusion within a development. These were reviewed and the following measures appropriate for the proposals identified:

- Provision of secure cycle storage for each dwelling; and,
- EV charging points in accordance with national standards.

6.3.18 As an outline planning application is being submitted, costs for the above measures were unavailable. As such, it is suggested that a suitably worded planning condition is added to any forthcoming consent requiring completion of a revised Damage Cost Assessment based on the final development specification and costings. This will ensure that an appropriate amount of mitigation is included in the scheme.

6.4 Interim Planning Guidance for PM_{2.5}

6.4.1 Interim Planning Guidance²² 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 19, along with the development response.

²² <https://uk-air.defra.gov.uk/pm25targets/planning>.

Table 19 Interim Planning Guidance Questions

Question	Response
How has exposure to PM_{2.5} been considered when selecting the development site? Factors to consider include: • 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 proposals are located in a rural setting to the north-east of Partridge Green village, bordered by agricultural fields in all directions and Shermanbury Road to the south. There are no vulnerable groups in the vicinity of the site. However, as shown in Section 6.2, impacts associated with the development are predicted to be not significant at receptors The site is distanced from any major road pollution sources As outlined in Table 15, 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? Factors to consider include: • 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	A number of mitigation measures have been incorporated into the design of the scheme in order to reduce PM_{2.5} emissions. These include the following: • Provision of Electric Vehicle (EV) charging points to encourage the use of low emission vehicles • Secure cycle storage will be provided throughout the development. This will encourage the uptake of sustainable modes of travel 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

6.4.2 Based on the responses provided in Table 19 and the assessment results, as outlined in Sections 5.0 and 6.0, 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 Wain Estates (Land) Limited to undertake an Air Quality Assessment in support of a residential development on land at Shermanbury Road, Partridge Green.
- 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 methodology²³. 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 demolition, 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 guidance²⁴. 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 A Damage Cost Assessment was undertaken in order to calculate the quantity of transport emissions associated with the development and to determine the appropriate level of mitigation required to help avoid, minimise and/ or off-set the impact on air quality. As an outline planning application is being submitted, costs for the identified measures were unavailable. As such, it is suggested that a suitably worded planning condition is added to any forthcoming consent requiring completion of a revised Damage Cost Assessment based on the final development specification and costings. This will ensure that an appropriate amount of mitigation is included in the scheme.

²³ Guidance on the Assessment of Dust from Demolition and Construction V2.2, IAQM, 2024.

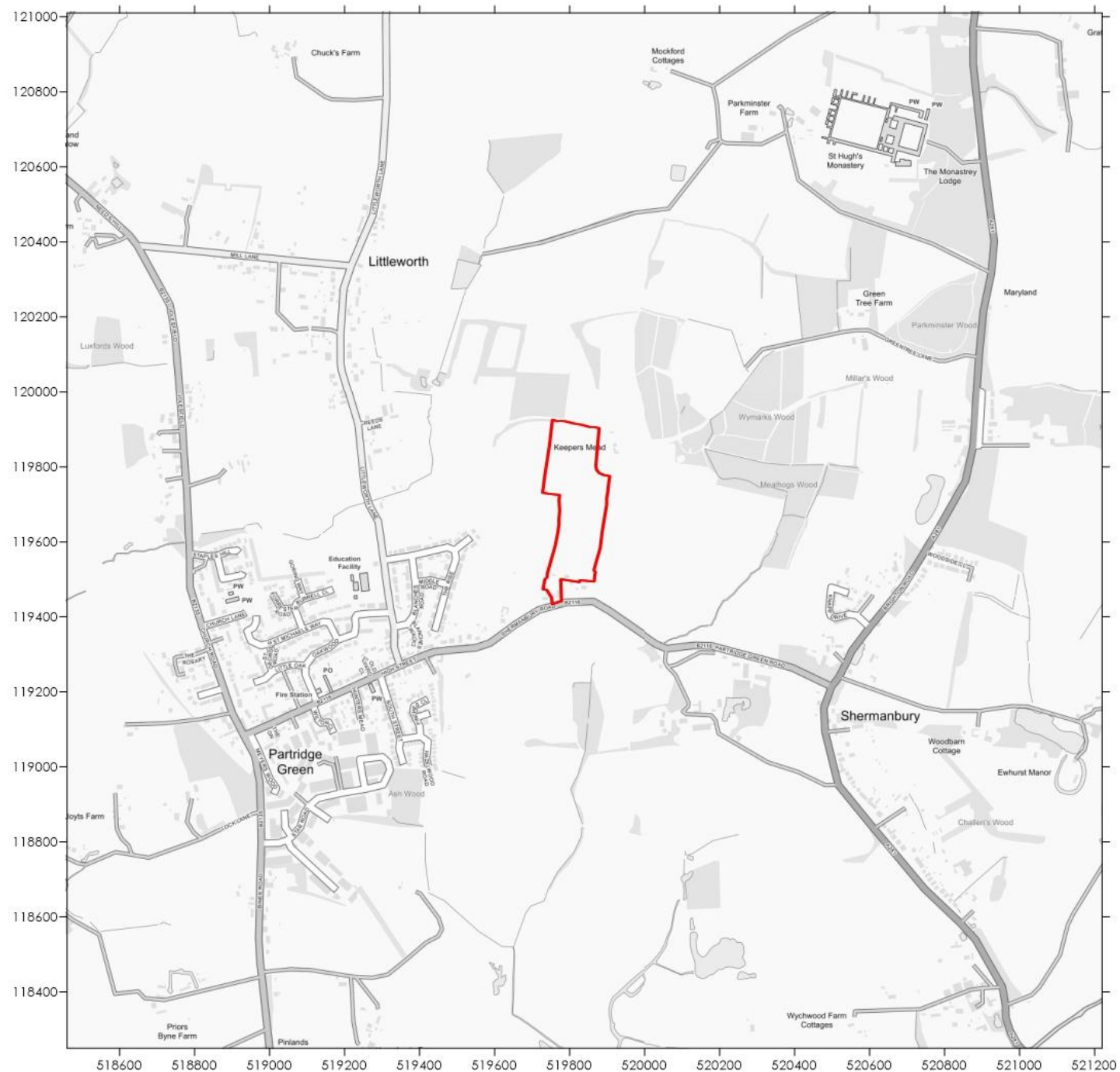
²⁴ Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.

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

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
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
NO _x	Oxides of nitrogen
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

Figures



Legend



Site Boundary

Title

Figure 1 - Site Location Plan

Project

Air Quality Assessment
Shermanbury Road, Partridge Green

Project Reference

10152

Client

Wain Estates (Land) Limited

Contains Ordnance Survey Data
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Date: 15th June 2026

Ref: 10152

Appendix 1 - Curricula Vitae

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 NO₂ 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 proposed odour releases. A combination of field odour surveys, risk assessments and detailed dispersion modelling 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,

Workshop - Air quality assessment and input into the EIA for a proposed large scale commercial development near Workshop. 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 and Odour 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.

KEY EXPERIENCE:

Charlotte is a Graduate 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 Neutral Assessments in accordance with The London Plan.
- Odour surveys and risk assessments to assess amenity and suitability of sites for potential future development for residential use.

SELECT PROJECTS SUMMARY:

Stretford Memorial Hospital, Stretford

Air Quality Assessment in support of the demolition of the former Stretford Memorial Hospital and construction of 29 residential dwellings alongside car parking and associated infrastructure. The site was located adjacent to an Air Quality Management Area (AQMA) therefore there was concern that there could be potential impacts due to vehicle movements as a result of the site within this sensitive area as well as exposure of future occupants to poor air quality due to traffic emissions. Results indicated that potential impacts were predicted to be not significant and the site was considered suitable for the proposed end use.

River Road, Barking

Air Quality Assessment and Air Quality Neutral Assessment in support of an industrial development to provide a temporary contractors yard. A Fugitive Dust Emissions Assessment was required to determine potential impacts of operational phase fugitive dust emissions. Dispersion modelling of road vehicle exhaust emissions was also undertaken in support of the scheme. The site was concluded to be Air Quality Neutral in accordance with the relevant guidance and the overall impacts of fugitive dust emissions and road vehicle exhaust emissions associated with the site were concluded to be not significant.

Crewe Road, Shavington

An Odour Assessment in support of a residential development with associated access, infrastructure and landscaping works. The development was located in the vicinity of a meat processing

facility which may form a source of odour emissions and cause loss of amenity to 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.

Land North of Parklands, Waltham Abbey

Air Quality Assessment in support of a residential development comprising 400 dwellings, a local centre and public open space. Detailed dispersion modelling was undertaken to predict pollutant concentrations at sensitive locations as a result of emissions from the highway network both with and without the development in place. Review of the dispersion modelling results indicated that residual impacts due to the operation of the development were considered to be not significant.

Masshouse Lane, Birmingham

Air Quality Assessment in support of a mixed-use development to provide a new part-three, part-six storey building including ground and first floor retail space with a mix of residential dwellings from first to sixth floor, to provide 10 residential units. The site was located within an AQMA therefore there was concern that future occupants could be exposed to existing air quality conditions due to traffic emissions as well as potential impacts to sensitive receptors due to vehicle movements as a result of the proposals. Results revealed negligible impacts at all locations and that pollution levels were below the air quality objectives across the development.

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.