# Air Quality Assessment

## Land West of Marwick Close, Bolney Road, Ansty

*Prepared for:*
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*133 Church Hill Road*
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**January 2026**

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# QUALITY ASSURANCE

## Project Number: C11312
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Air Quality

### Air Quality Assessment

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| Executive Summary | |
|---|---|
| **Site Address** | **Bolney Road, Ansty** |

An Air Quality Assessment was undertaken to support a planning application for a residential development on land west of Marwick Close, Bolney Road, Ansty.

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

Potential construction phase air quality impacts from fugitive dust emissions were assessed as a result of earthworks, construction and trackout activities. It is considered that the use of 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 development, 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 development.

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**APPENDIX**

# 1.0 INTRODUCTION

## 1.1 Background

An Air Quality Assessment was undertaken to support a planning application for a residential development on land west of Marwick Close, Bolney Road, Ansty.

The Air Quality Assessment was undertaken by Omnia's partner Redmore Environmental Ltd.

The proposals have the potential to cause air quality impacts as a result of fugitive dust emissions during construction and road vehicle exhaust emissions during operation. As such, an Air Quality Assessment was undertaken to determine baseline conditions and assess potential impacts as a result of the scheme.

## 1.2 Proposed Development

The site is located on land west of Marwick Close, Bolney Road, Ansty at approximate National Grid Reference (NGR): 528905, 123090. The relevant Local Authority (LA) is Mid Sussex District Council (MSDC). Reference should be made to Figure 1 for a map of the site and surrounding area.

The proposals comprise the construction of 34 residential dwellings and associated works.

## 1.3 Objectives

The proposals have the potential to cause air quality impacts at sensitive locations during the construction and operational phases. As such, an Air Quality Assessment was undertaken to determine baseline conditions and assess potential impacts associated with the scheme. This is detailed in the following report.

## 1.4 Acronyms

All acronyms used within this report are defined in the Abbreviations listings, set out in Section 7.

## 1.5 Confidentiality

This report has been prepared solely for the use of the Client. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from Omnia; a charge may be levied against such approval.

# 2.0 LEGISLATION AND POLICY

## 2.1 Legislation

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.

Air Quality Target Values were also provided for several other 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).

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.

The Environmental Improvement Plan 2025[2] 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).

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 | 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 |

[1] AQS: Framework for Local Authority Delivery, DEFRA, 2023.
[2] Environmental Improvement Plan 2025, DEFRA, 2025.

Note: (a) Interim Target to be achieved by 2030.
(b) Concentration Target to be achieved by 2040.

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

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

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

quality involves comparing present and likely future pollutant concentrations against the AQOs. If it is predicted that levels at locations of relevant exposure, as summarised in Table 2, are likely to be exceeded, the LA is required to declare an Air Quality Management Area (AQMA). For each AQMA the LA is required to produce an Air Quality Action Plan (AQAP), the objective of which is to reduce pollutant concentrations in pursuit of the AQOs.

## 2.3 Dust

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."*

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

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.

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

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

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:*
>
> *[...]*

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

> *e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality [...]"*

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."*

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

## 2.5 National Planning Practice Guidance

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 considerations be relevant to the development management process?
6. What specific issues may need to be considered when assessing air quality impacts?
7. How detailed does an air quality assessment need to be?
8. How can an impact on air quality be mitigated?

These were reviewed and the relevant guidance considered as necessary throughout the undertaking of this assessment.

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

## 2.6 Local Planning Policy

The Mid Sussex District Plan 2014 - 2031[6] was adopted by MSDC on 28th March 2018. A review of the document indicated the following policies in relation to air quality of relevance to this assessment:

> *"DP29: Noise, Air and Light Pollution*
>
> *The environment, including nationally designated environmental sites, nationally protected landscapes, areas of nature conservation or geological interest, wildlife habitats, and the quality of people's life will be protected from unacceptable levels of noise, light and air pollution by only permitting development where:*
>
> *[...]*
>
> *Air Pollution:*
>
> *• It does not cause unacceptable levels of air pollution;*
>
> *• Development on land adjacent to an existing use which generates air pollution or odour would not cause any adverse effects on the proposed development or can be mitigated to reduce exposure to poor air quality to recognised and acceptable levels;*
>
> *• Development proposals (where appropriate) are consistent with Air Quality Management Plans.*
>
> *[...]"*
>
> *"DP26 Character and Design*
>
> *All development and surrounding spaces, including alterations and extensions to existing buildings and replacement dwellings, will be well designed and reflect the distinctive character of the towns and villages while being sensitive to the countryside. All applicants will be required to demonstrate that development:*
>
> *[...]*
>
> *does not cause significant harm to the amenities of existing nearby residents and future occupants of new dwellings, including taking account of the impact on privacy, outlook, daylight and sunlight, and noise, air and light pollution (see Policy DP29);*
>
> *[...]"*

[6] Mid Sussex District Plan 2014 - 2031, MSDC, 2018.

The Sussex Air Quality Partnership have developed Air Quality and Emissions Mitigation Guidance for Sussex[7] to improve air quality throughout the county and encourage emissions reductions to improve the environment and health of the population. The guidance includes direction on when an air quality assessment will be required, the recommended scope of works and proposed mitigation measures.

The above policies and technical guidance have been considered 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

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

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].

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

- Earthworks;
- Construction; and,
- Trackout.

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 $PM_{10}$.

The assessment steps are detailed below.

### 3.2.1 Step 1

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.

Should sensitive receptors not be present within the relevant distances then **negligible** impacts would be expected and further assessment is not necessary.

### 3.2.2 Step 2

Step 2 assesses the risk of potential dust impacts. A site is allocated a risk category based on two factors:

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

- 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).

The two factors are combined in Step 2C to determine the risk of dust impacts without mitigation applied.

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$^2$<br>• Potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size)<br>• More than 10 heavy earth moving vehicles active at any one time<br>• Formation of bunds greater than 6m in height |
| | Construction | • Total building volume greater than 75,000m$^3$<br>• On site concrete batching<br>• Sandblasting |
| | Trackout | • More than 50 Heavy Duty Vehicle (HDV) trips per day<br>• Potentially dusty surface material (e.g. high clay content)<br>• Unpaved road length greater than 100m |
| Medium | Earthworks | • Total site area 18,000m$^2$ to 110,000m$^2$<br>• Moderately dusty soil type (e.g. silt)<br>• 5 to 10 heavy earth moving vehicles active at any one time<br>• Formation of bunds 3m to 6m in height |
| | Construction | • Total building volume 12,000m$^3$ to 75,000m$^3$<br>• Potentially dusty construction material (e.g. concrete)<br>• On site concrete batching |
| | Trackout | • 20 to 50 HDV trips per day<br>• Moderately dusty surface material (e.g. high clay content)<br>• Unpaved road length 50m to 100m |
| Small | Earthworks | • Total site area less than 18,000m$^2$<br>• Soil type with large grain size (e.g. sand)<br>• Less than 5 heavy earth moving vehicles active at any one time<br>• Formation of bunds less than 3m in height |
| | Construction | • Total building volume less than 12,000m$^3$<br>• Construction material with low potential for dust release (e.g. metal cladding or timber) |

| Magnitude | Activity | Criteria |
|---|---|---|
| | Trackout | • Less than 20 HDV trips per day<br>• Surface material with low potential for dust release<br>• Unpaved road length less than 50m |

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 Human and Ecological Receptors*

| Receptor Sensitivity | Examples | |
|---|---|---|
| | Human Receptors | Ecological Receptors |
| High | • Users expect high levels of amenity<br>• High aesthetic or value property<br>• People expected to be present continuously for extended periods of time<br>• 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<br>• Aesthetics or value of their property could be diminished by soiling<br>• 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. Site of Special Scientific Interest |
| Low | • Enjoyment of amenity would not reasonably be expected<br>• Property would not be expected to be diminished in appearance<br>• 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 |

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 |

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

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 |
| | 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 |

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 |

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

Table 8 outlines the risk category from earthworks, 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 |

### 3.2.3 Step 3

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.

### 3.2.4 Step 4

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**.

## 3.3 Operational Phase Assessment

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. 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.

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

[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.

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.

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.

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

# 4.0 BASELINE

## 4.1 Introduction

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

As required by the Environment Act (1995), as amended by the Environment Act (2021), MSDC has undertaken Review and Assessment of air quality within its area of jurisdiction. This process has indicated that concentrations of all pollutants considered within the AQS are currently below the relevant AQOs. As such, no AQMAs have been declared within the district.

## 4.3 Air Quality Monitoring

Monitoring of pollutant concentrations is undertaken by MSDC throughout its area of jurisdiction. Recent $NO_2$ concentrations recorded in the vicinity of the development, as provided in MSDC's '2025 Air Quality Annual Status Report (ASR)'[12], are shown in Table 9.

*Table 9 Monitoring Results - Annual Mean $NO_2$*

| Monitoring Site | | Monitored Annual Mean $NO_2$ Concentration (µg/m$^3$) | |
|---|---|---|---|
| | | 2023 | 2024 |
| MSAQ45 | Telegraph Pole Cuckfield Road Ansty | 35.0 | 32.6 |
| MSAQ47 | Footpath sign adjacent The Lizard 49 Cuckfield Road[(a)] | - | 24.3 |
| MSAQ48 | Cuckfield Road Ansty[(a)] | - | 13.2 |

Note: (a) Monitor commissioned in 2024

As shown in Table 9, annual mean $NO_2$ concentrations were below the AQO of 40µg/m$^3$ at all monitors in recent years. Reference should be made to Figure 2 for a map of the survey positions.

MSDC do not undertake monitoring of $PM_{10}$ or $PM_{2.5}$ concentrations in the vicinity of the site.

## 4.4 Background Pollutant Concentration Predictions

Predictions of $NO_2$, $PM_{10}$ and $PM_{2.5}$ concentrations on a 1km by 1km grid basis have been produced by DEFRA. These maps cover the entire of the UK to assist LAs in their Review and Assessment of air quality. The proposed development site is located within grid square NGR: 528500, 123500. Data for this location was downloaded from the DEFRA website[13] for the purpose of the assessment and is summarised in Table 10.

[12] 2025 Air Quality ASR, MSDC, 2025.
[13] https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2021.

*Table 10 Background Pollutant Concentration Predictions*

| Grid Square (NGR) | Predicted 2026 Background Pollutant Concentration (µg/m$^3$) |
|---|---|
| $NO_2$ | 7.34 |
| $PM_{10}$ | 9.90 |
| $PM_{2.5}$ | 5.99 |

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

## 4.5 Sensitive Receptors

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 11.

*Table 11 Earthworks and Construction Dust Sensitive Receptors*

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

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

*Table 12 Trackout Dust Sensitive Receptors*

| Distance from Site Access Route (m) | Approximate Number of Human Receptors | Approximate Number of Ecological Receptors |
|---|---|---|
| Up to 20 | 10 - 100 | 0 |
| Up to 50 | 10 - 100 | 0 |

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

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.

The sensitivity of the receiving environment to specific potential dust impacts, based on the criteria shown in Section 3.2, is shown in Table 13.

*Table 13 Sensitivity of the Surrounding Area to Potential Dust Impacts*

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

# 5.0 ASSESSMENT

## 5.1 Introduction

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

## 5.2 Construction Phase

### 5.2.1 Step 1

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

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.

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.

### 5.2.2 Step 2

#### 5.2.2.1 Earthworks

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

Table 13 indicates the sensitivity of the area to dust soiling effects on people and property is **high**. In accordance with the criteria outlined in Table 8, the development is considered to be a **low** risk site for dust soiling as a result of earthworks.

Table 13 indicates the sensitivity of the area to human health impacts is **low**. In accordance with the criteria outlined in Table 8, the development is considered to be a **negligible** risk site for human health impacts as a result of earthworks.

#### 5.2.2.2 Construction

The total building volume to be constructed is estimated to be less than 12,000m$^3$. In accordance with the criteria outlined in Table 3, the magnitude of potential dust emissions from construction is therefore **small**.

Table 13 indicates the sensitivity of the area to dust soiling effects on people and property is **high**. In accordance with the criteria outlined in Table 8, the development is considered to be a **low** risk site for dust soiling as a result of construction activities.

Table 13 indicates the sensitivity of the area to human health impacts is **low**. In accordance with the criteria outlined in Table 8, the development is considered to be a **negligible** risk site for human health impacts as a result of construction activities.

#### 5.2.2.3 Trackout

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

Table 13 indicates the sensitivity of the area to dust soiling effects to people and property is **high**. In accordance with the criteria outlined in Table 8, the development is considered to be a **medium** risk site for dust soiling as a result of trackout activities.

Table 13 indicates the sensitivity of the area to human health impacts is **low**. In accordance with the criteria outlined in Table 8, the development is considered to be a **low** risk site for human health impacts as a result of trackout activities.

Summary of the Risk of Dust Effects

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

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

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.

### 5.2.3 Step 3

The IAQM guidance[14] 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

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

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

*Table 15 Fugitive Dust Emission Mitigation Measures*

| Issue | Comment |
|---|---|
| Communications | • Develop and implement a stakeholder communications plan that includes community engagement before work commences on site<br>• 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<br>• Display the head or regional office contact information<br>• A Dust Management Plan (DMP) will be implemented as part of the proposals which includes measures to control other emissions |
| 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<br>• Make the complaints log available to the LA upon request<br>• Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book |
| Monitoring | • Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the LA upon request<br>• 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<br>• Erect solid screens or barriers around dusty activities or the site<br>• Fully enclose site or specific operations where there is a high potential for dust production and they are active for an extensive period<br>• Avoid site runoff of water or mud<br>• Keep site fencing, barriers and scaffolding clean using wet methods<br>• Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used<br>• 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<br>• Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable |

| Issue | Comment |
|---|---|
| Operations | • Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques<br>• Ensure an adequate water supply on the site for effective dust suppression, using non-potable water where possible and appropriate<br>• Use enclosed chutes and conveyors and covered skips<br>• Minimise drop heights and use fine water sprays wherever appropriate<br>• Ensure equipment is available to clean any dry spillages, and clean up spillages as soon as reasonably practicable using wet cleaning methods |
| Waste management | • Avoid bonfires or burning of waste materials |
| Trackout | • Use water-assisted dust sweeper on access and local roads, if required<br>• Avoid dry sweeping of large areas<br>• Ensure vehicles entering and leaving site are covered to prevent escape of materials<br>• Implement a wheel washing system, if required<br>• 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 |

#### 5.2.4 Step 4

Assuming the relevant mitigation measures outlined in Table 15 are implemented, the residual impacts from all dust generating activities is predicted to be **not significant**, in accordance with the IAQM guidance[15].

### 5.3 Operational Phase

#### 5.3.1 Potential Development Impacts

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. These are assessed in the following Sections.

Information provided by i-Transport, the Transport Consultants for the scheme, indicated that the proposals are predicted to generate approximately 194 daily vehicle movements, inclusive of 1 daily HDV movement.

Based on the above, the scheme is not predicted to result in an increase in LDV flows of more than 500 AADT. Additionally, the proposals do not include significant highway realignment or the introduction of an off-site 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

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

emissions are predicted to be **not significant**, in accordance with the IAQM[16] screening criteria shown in Section 3.3.

### 5.3.2 Air Quality and Emissions Mitigation Guidance for Sussex

#### 5.3.2.1 Development Classification

The Sussex Air Quality Partnership have developed Air Quality and Emissions Mitigation Guidance for Sussex[17] to improve air quality throughout the county and encourage emissions reductions to improve the environment and health of the population.

The guidance[18] 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.

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.

#### 5.3.2.2 Emissions Mitigation Assessment

The guidance[19] 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 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.

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:

*5 Year Exposure Cost Value = EFT Output x Damage Costs x 5*

It should be noted that the calculation has been undertaken using the most recent damage costs released by DEFRA in December 2025[20].

[16] Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.
[17] Air Quality and Emissions Mitigation Guidance for Sussex, Sussex Air Quality Partnership, 2021.
[18] Air Quality and Emissions Mitigation Guidance for Sussex, Sussex Air Quality Partnership, 2021.
[19] Air Quality and Emissions Mitigation Guidance for Sussex, Sussex Air Quality Partnership, 2021.
[20] Air Quality Apprasial: Damage Cost Guidance, DEFRA, 2025.

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 | 194 |
| HDV Proportion (%) | 0.5 |
| Average Speed (km/h) | 50 |
| Average Trip Length (km) | 10 |
| $NO_x$ Damage Costs (£/tonne)[(a)] | 6,005 |
| $PM_{2.5}$ Damage Costs (£/tonne)[(a)] | 49,694 |

Note: (a) Road Transport Rural Central Damage Cost uplifted to 2026

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) | | | | |
|---|---|---|---|---|---|
| | 2027 | 2028 | 2029 | 2030 | 2031 |
| $NO_x$ Output | 0.11 | 0.09 | 0.08 | 0.07 | 0.06 |
| $PM_{2.5}$ Output | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |

The calculation is shown in Table 18.

*Table 18 Damage Cost Calculation*

| Data | Value (£) | | | | |
|---|---|---|---|---|---|
| | 2027 | 2028 | 2029 | 2030 | 2031 |
| Annual Cost of NOx Emissions | 631 | 548 | 471 | 400 | 339 |
| Annual Cost of PM2.5 Emissions | 620 | 609 | 600 | 592 | 586 |
| Total Annual Exposure Cost Value | 1,251 | 1,157 | 1,071 | 992 | 924 |
| Total Five-Year Exposure Cost Value | 5,396 | | | | |

As shown in Table 18, the total damage costs were calculated as £5,396.

#### 5.3.2.3 Mitigation

The guidance[21] 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 34 Electric Vehicle (EV) charging points;
- Provision of secure cycle storage; and,
- Connection to local cycle and pedestrian routes.

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

In addition to the above, the development will adhere to Fugitive Dust Emission Mitigation Measures throughout construction. These are outlined in Table 15.

Information provided by i-Transport, the Transport Consultants for the scheme, indicated that the cost of each EV charging point is approximately £1,000. As such, the monetary value would be approximately £34,000. This is significantly higher than the calculated damage cost of £5,396. As such, the mitigation measures outlined above are considered appropriate for the development and would be anticipated to further reduce air quality impacts of road traffic emissions.

### 5.3.3 Interim Planning Guidance for $PM_{2.5}$

Interim Planning Guidance[22] 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 emissions of $PM_{2.5}$ 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.

*Table 19 Interim Planning Guidance Questions*

| Question | Response |
|---|---|
| How has exposure to $PM_{2.5}$ been considered when selecting the development site?<br><br>Factors to consider include:<br>• 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<br>• Site proximity to pollution sources and the impact of these on users of the development<br>• Exposure and emissions during both construction and in-use | The proposals are located in Ansty, a small rural village. The site is bounded to the north and west by residential properties and to the east and south by open land. There are no schools, hospitals, care homes or large populations in the vicinity of the site. Additionally, as outlined in Section 5.3, air quality impacts associated with the development are predicted to be **not significant**<br><br>Proposed dwellings are set back from the A272 and associated road vehicle exhaust emission by approximately 20m. As such, users of the development are unlikely to be exposed to any existing air quality issues<br><br>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 |

[22] https://uk-air.defra.gov.uk/pm25targets/planning.

| Question | Response |
|---|---|
| What actions and/or mitigation 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?<br><br>Factors to consider include:<br>• Site layout<br>• The development's design<br>• Technology used in the construction or installed for use in the development<br>• Construction and future use of the development | There is an existing planting belt along the A242 which will be retained as part of the development. This will assist in reducing dispersion of $PM_{2.5}$ onto the site<br><br>The development will include the following to reduce $PM_{2.5}$ emissions during operation:<br><br>• Provision of secure cycle storage for bicycles to encourage the use of sustainable transport modes<br>• Provision of EV charging points to support the reduction in reliance on petrol and diesel vehicles<br>• Connection to pedestrian and cycle links<br><br>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 |

Based on the responses provided in Table 16 and the assessment results, as outlined in Sections 5.3, it is considered that the development has identified key sources of air pollution and taken appropriate action to minimise emissions of $PM_{2.5}$.

## 6.0 SUMMARY

An Air Quality Assessment was undertaken to support a planning application for a residential development on land west of Marwick Close, Bolney Road, Ansty.

The proposals have the potential to cause air quality impacts as a result of fugitive dust emissions during construction and road vehicle exhaust emissions during operation. As such, an Air Quality Assessment was undertaken to determine baseline conditions and assess potential impacts as a result of the scheme.

During the construction phase of the development there is the potential for air quality impacts as a result of fugitive dust emissions from the site. These were assessed in accordance with the IAQM[23] methodology. Site-specific dust control measures were subsequently determined. Following implementation, the residual significance of potential air quality impacts from dust generated by earthworks, construction and trackout activities was predicted to be **not significant**.

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[24]. Due to the low number of vehicle trips generated by the development, road traffic exhaust impacts were predicted to be **not significant**.

Potential emissions from the proposals were assessed in line with the requirements of the Air Quality and Emissions Mitigation Guidance for Sussex[25]. 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 development.

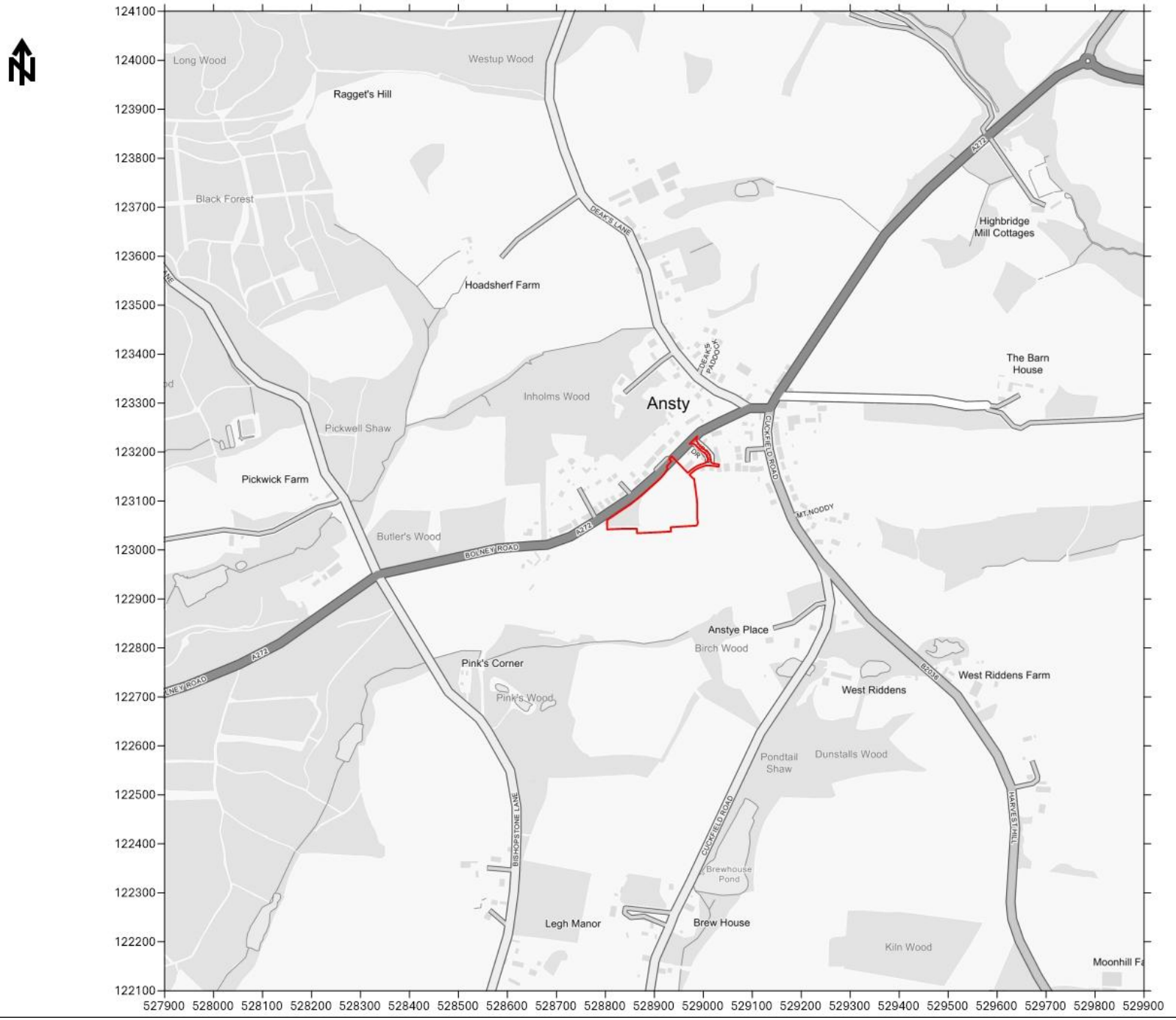
[23] Guidance on the Assessment of Dust from Demolition and Construction V2.2, IAQM, 2024.
[24] Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.
[25] Air Quality and Emissions Mitigation Guidance for Sussex, Sussex Air Quality Partnership, 2021.

## 7.0 ABBREVIATIONS

AADT Annual Average Daily Traffic
AQLV Air Quality Limit Value
AQMA Air Quality Management Area
AQO Air Quality Objective
AQS Air Quality Strategy
ASR Annual Status Report
DEFRA Department for Environment, Food and Rural Affairs
DMP Dust Management Plan
EV Electric Vehicle
HDV Heavy Duty Vehicle
IAQM Institute of Air Quality Management
LA Local Authority
LAQM Local Air Quality Management
LDV Light Duty Vehicle
MSDC Mid Sussex District Council
NGR National Grid Reference
$NO_2$ Nitrogen dioxide
NPPF National Planning Policy Framework
NPPG National Planning Practice Guidance
$PM_{10}$ Particulate matter with an aerodynamic diameter of less than 10µm
$PM_{2.5}$ Particulate matter with an aerodynamic diameter of less than 2.5µm

**APPENDIX I**

**Drawings**




Legend

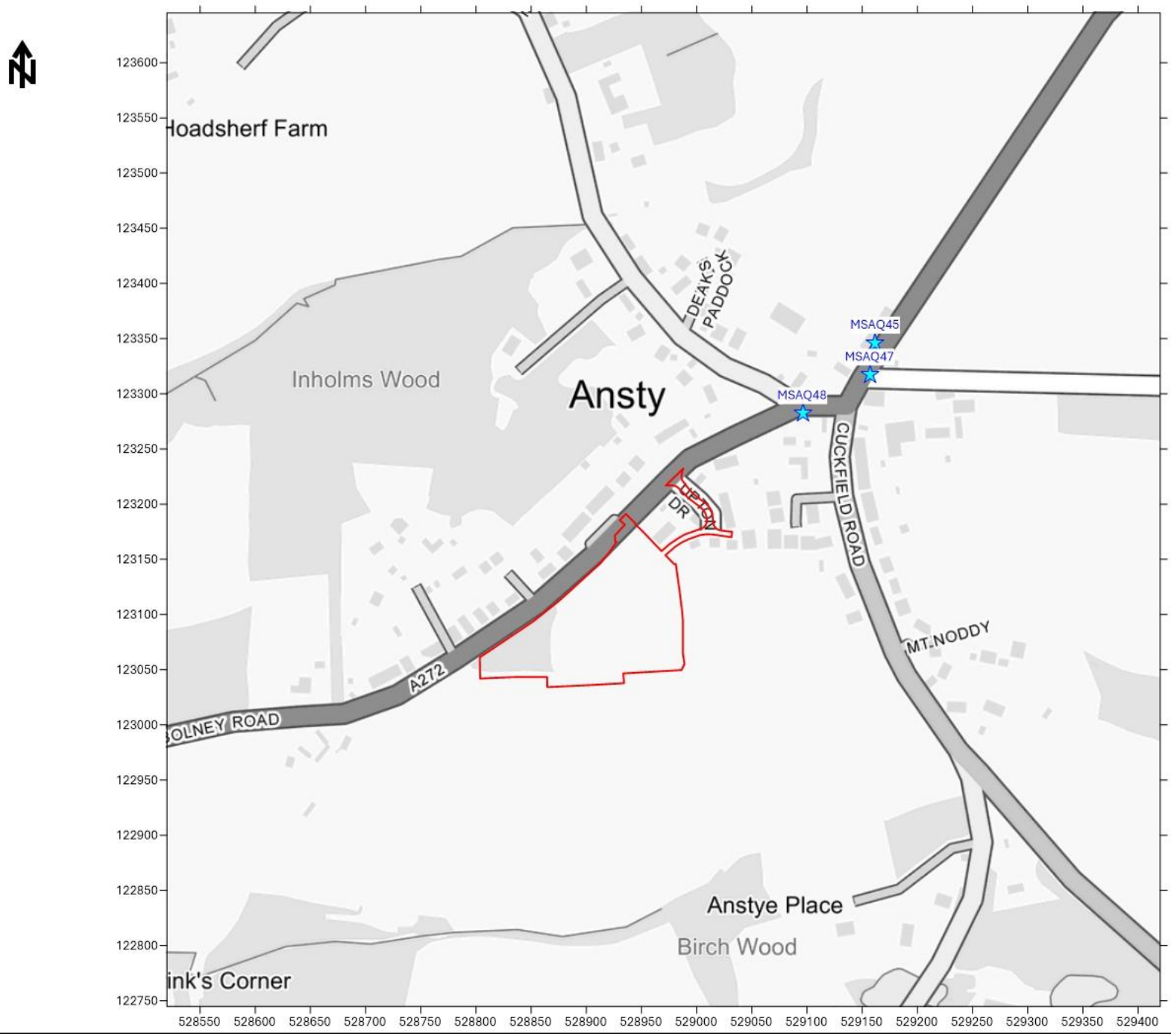
Site Location

Title

Figure 1 - Site Location Plan

Project

Air Quality Assessment
Land west of Marwick Close,Bolney Road, Ansty




Legend

Site Location

Monitor

Title

Figure 2 - Monitoring Locations

Project

Air Quality Assessment
Land west of Marwick Close, Bolney Road, Ansty