



# Land at Penn Hill, Calne

## Air Quality and Odour Assessment

### Castlewood Properties Ventures Ltd

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## 1.0 Introduction

SLR Consulting Ltd (SLR) has been commissioned by Castlewood Properties Ventures Ltd to undertake an air quality and odour assessment to appraise a planning application for the development of 210 residential dwellings and 0.74ha of employment land and ancillary uses (the 'Proposed Development') at Penn Hill Farm, Calne, Wiltshire (the 'Site').

The Site currently comprises vacant land and some commercial buildings at the approximate National Grid Reference (NGR): x400800, y172000. The surrounding area comprises:

- Agricultural land to the north and residential dwellings along High Penn road beyond;
- Agricultural land and High Penn Solar Farm to the east, with Hills Sands Farm waste treatment facility and landfill site beyond;
- Sand Pit Road and associated residential dwellings border the south of the Site, with further residential dwellings beyond; and
- Residential dwellings are situated to the west with commercial and industrial properties beyond Oxford Road.

Primary vehicular access will be off Sycamore Drive to the West of the Site.

## 1.1 Background Context

A planning application was submitted to Wiltshire Council (WC) in 2023 (reference: PL/2023/07216) for a previous iteration of the scheme before being withdrawn. The following planning consultation response comments from the Environmental Health Officer (EHO) at WC regarding air quality were initially received<sup>1</sup> prior to the application being withdrawn:

*"The proposed development situation in close proximity to the Calne Air Quality Management Area (AQMA) and the transport assessment confirms that there will be an increase in traffic numbers within the Calne AQMA. This traffic increase will also lead to increases in annual concentrations of Nitrogen Dioxide; however the level of increase is not clear and I can find no further information in the application to address this matter."*

The EHO at WC followed this up with a separate request for an odour assessment<sup>2</sup>:

*"The proposed development is in relative close proximity to the Hills Waste processing site and therefore at risk of odours that could potentially harm the amenity of future occupiers. I therefore recommend the following condition: An odour assessment carried out in accordance with IAQM Guidance on the assessment of odour for planning Version 1.1 - July 2018 shall be submitted prior to determination of this application."*

## 1.2 Scope of Assessment

An air quality and odour assessment has been undertaken in response to the planning consultation responses.

Consultation with the EHO at WC was undertaken to agree upon the extent and methodology of the air quality assessment. WC<sup>3</sup> confirmed the development classifies as

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<sup>1</sup> PL/2023/07216, Brett Warren (EHO at WC) Planning Consultation Response, 20<sup>th</sup> October 2023.

<sup>2</sup> PL/2023/07216, Brett Warren (EHO at WC) Planning Consultation Response, 22<sup>nd</sup> November 2023.

<sup>3</sup> Email correspondence from Warren Brett (EHO at WC) to SLR Consulting Ltd, dated 13<sup>th</sup> October 2025.



'Type 2' in accordance with their Air Quality Supplementary Planning Document (SPD) (the 'the WC Air Quality SPD')<sup>4</sup>.

Further consultation was undertaken with the EHO at WC to agree upon the scope and methodology of the odour assessment. WC confirmed<sup>5</sup> that a qualitative Source-Pathway-Receptor (S-P-R) assessment based on Institute of Air Quality Management (IAQM) Guidance on the assessment of odour for planning (the 'IAQM Odour guidance')<sup>6</sup> would be acceptable in principle. However, they flagged that there have been historical odour complaints in Calne associated with the Lower Compton Landfill.

The following agreed scope of works has therefore been undertaken:

- Baseline Evaluation;
- Construction Phase;
- Qualitative site suitability assessment;
- Qualitative odour assessment; and
- Mitigation Measures.

As agreed with the EHO, assessment of road traffic impacts on the existing environment are not required for Type 2 developments and has therefore been scoped out of this assessment.

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<sup>4</sup> Wiltshire Council Air Quality Supplementary Planning Document, October 2025.

<sup>5</sup> Email correspondence from Brett Warren (EHO at WC) to SLR Consulting Ltd, dated 20<sup>th</sup> October 2025.

<sup>6</sup> IAQM, Guidance on the assessment of odour for planning, v1.1 July 2018.



## 2.0 Environmental Standards

### 2.1.1 Air Quality

The relevant environmental standards for the protection of human health are presented below. Further detail and context are outlined in Appendix A.

The ambient air quality standards of relevance to this assessment (collectively termed Air Quality Assessment Levels (AQALs) throughout this report) are provided in Table 2-1. These are primarily based upon the Air Quality Objectives Local Authorities are responsible for achieving, which are reflective of the Local Planning Authority's duties. The PM<sub>2.5</sub> AQSR AQAL has also been included for completeness, to provide an indicative assessment.

**Table 2-1: Relevant Ambient AQALs (England)**

| Pollutant                           | AQAL (µg/m <sup>3</sup> ) | Averaging Period                                                      |
|-------------------------------------|---------------------------|-----------------------------------------------------------------------|
| Nitrogen dioxide (NO <sub>2</sub> ) | 40                        | Annual mean                                                           |
|                                     | 200                       | 1-hour mean (not to be exceeded on more than 18 occasions per annum)  |
| Particles (PM <sub>10</sub> )       | 40                        | Annual mean                                                           |
|                                     | 50                        | 24-hour mean (not to be exceeded on more than 35 occasions per annum) |
| Particles (PM <sub>2.5</sub> )      | 20                        | Annual mean                                                           |

In accordance with Department for Environment Food and Rural Affairs (Defra's) technical guidance on Local Air Quality Management (LAQM.TG(22))<sup>7</sup>, the AQALs in Table 2-1 should only be assessed at locations of relevant public exposure, where people may be present for the duration of the specified averaging period. The AQALs do not apply to exposure at the workplace.

A summary of the typical relevant locations associated with each applicable AQAL assessed is detailed below in Table 2-2.

**Table 2-2: Human Health Relevant Exposure**

| AQAL Averaging Period | AQALs Should Apply At                                                                 | AQALs Should Not Apply At                                                |
|-----------------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| Annual mean           | Building facades of residential properties, schools, hospitals etc.                   | Facades of offices<br>Hotels<br>Gardens of residences<br>Kerbside sites  |
| 24-hour mean          | As above together with hotels and gardens of residential properties                   | Kerbside sites where public exposure is expected to be short term        |
| 1-hour mean           | As above together with kerbside sites of regular access, car parks, bus stations etc. | Kerbside sites where public would not be expected to have regular access |

<sup>7</sup> Defra in partnership with the Scottish Government, Welsh Government and Department of Agriculture, Environment and Rural Affairs Northern Ireland, Local Air Quality Management Technical Guidance 22, May 2025.



### 2.1.2 Odour

The Environmental Protection Act 1990<sup>8</sup> sets out provisions for the regulation of statutory nuisances. Section 79 sets out this statutory nuisance as, '*any dust, steam, smell or other effluvia arising on industrial, trade or business premises and being prejudicial to health or a nuisance*'.

Section 79 requires that, where a complaint of a statutory nuisance is made to it by a person living within its area, a Local Authority must take steps as are reasonably practicable to investigate the complaint.

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<sup>8</sup> His Majesty's Stationary Office, The Environmental Protection Act 1990.



## 3.0 Assessment Methodology

### 3.1 Development Type Classification

In accordance with the WC Air Quality SPD, the requirements of the air quality assessment are dependent on the development's classification ('Type 1', 'Type 2' or 'Type 3').

The Proposed Development includes more than 100 residential units and is therefore classed as at least a 'Type 2' development. A 'Type 2' development is upgraded to 'Type 3' if it is likely to worsen areas of existing poor air quality – specifically, if it lies within 5km of a monitoring location where the average annual mean NO<sub>2</sub> concentration has exceeded 36µg/m<sup>3</sup> over the past three years.

Based on local monitoring data (see Section 4.0), the Proposed Development remains a 'Type 2' classification. The WC EHO confirmed this classification during the pre-assessment consultation and an assessment appropriate to this classification has been completed.

### 3.2 Construction Dust Assessment

A construction dust assessment has been undertaken in accordance with IAQM Guidance on the Assessment Dust from Demolition and Construction (the 'IAQM Construction Dust guidance')<sup>9</sup>.

Initially, proposed construction activities are reviewed to inform the dust emission magnitude potential, without considering mitigation. This is performed for the full life cycle of construction, targeting four discrete activities:

- Demolition: Removal of existing structures;
- Earthworks: Soil-stripping, levelling, excavation, and landscaping;
- Construction: Activities involved in creating or modifying structures; and
- Trackout: Dust resuspension by HGVs on public and haul roads.

Separately, the sensitivity of the surrounding area is characterised with reference to three discrete impacts. These include:

- Dust soiling effects on people and property;
- The risk of health effects due to an increase in exposure to PM<sub>10</sub>; and
- Harm to ecological receptors.

Once identified, the likely dust emission magnitude is considered in conjunction with the sensitivity of the surrounding area to determine the risk of impact iteratively for each activity (as activity and receptor context can vary). The maximum risk level is then used as a benchmark to inform mitigation measures.

The overall aim is to determine the proportionate level of mitigation necessary to prevent significant effects on receptors from construction activities. Upon successful implementation of these controls, residual effects associated with construction dust are expected to be not significant.

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<sup>9</sup> IAQM, Guidance on the Assessment Dust from Demolition and Construction, v2.2 January 2024.



## 3.3 Site Suitability/Exposure Assessment

### 3.3.1 Air Quality Assessment

In relation to road traffic emissions, an exposure assessment is required to assess the likely exposure that future residents associated with the Proposed Development may experience to ensure the Site is suitable for its proposed residential use. As per the SPD, the exposure assessment is required to consider if:

- The proposal is adjacent to or within an AQMA;
- The proposal is in an area not formally designated as an AQMA but where WC has concerns over elevated levels of pollution; and
- Any other location where WC considers there is risk of exceedance in air quality objectives (e.g. near large fugitive emission sources).

Furthermore, with consideration of the Environmental Policy Implementation Community (EPIC) (previously Environmental Protection United Kingdom (EPUK)), and the IAQM: Land-Use Planning and Development Control: Planning for Air Quality<sup>10</sup> (the 'EPIC & IAQM guidance'), the exposure assessment will also consider:

- Background and future baseline air quality and whether this will likely approach or exceed an AQAL;
- The presence and location of an AQMA as an indicator of local hotspots where the AQALs may be exceeded; and
- The presence of a heavily trafficked road, with emissions that could give rise to sufficiently high concentrations of pollutants (in particular NO<sub>2</sub>), that could cause unacceptably high exposure for users of the new development.

A qualitative exposure assessment has been undertaken, with reference to local monitoring data relative to the AQALs (detailed in Table 2-1), to determine whether further consideration is required.

### 3.3.2 Qualitative Odour Assessment

The S-P-R conceptual model outlined in the IAQM Odour guidance considers the odour potential of the source, sensitivity of surrounding receptors and the pathway between source and receptor in order to assess the magnitude of risk.

Specifically, the following aspects have been reviewed:

- The type of activities undertaken, including consideration of existing mitigation measures, in order to determine:
  - The potential magnitude of releases in general terms; and
  - The nature of that release.
- The location and sensitivity of the proposed sensitive receptors in close proximity to the odour source; and
- The pathway between source and receptors incorporating buffer distance, any mitigating features and the frequency of wind conditions likely to result in the dispersion of emissions towards receptors.

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<sup>10</sup> EPIC & IAQM, Land-Use Planning and Development Control: Planning for Air Quality. v1.2 2017.



The odour impact risk is based on the relationship between the residual source emission (i.e. after consideration of mitigation) and the pathway effectiveness. These have been defined with use of criteria provided within Table 3-1 as defined in the IAQM Odour guidance.

**Table 3-1: Risk of Odour Exposure (Impact) at each Receptor Location**

| Pathway Effectiveness | Source Odour Potential |                 |             |
|-----------------------|------------------------|-----------------|-------------|
|                       | Small                  | Medium          | Large       |
| Highly Effective      | Low Risk               | Medium Risk     | High Risk   |
| Moderately Effective  | Negligible Risk        | Low Risk        | Medium Risk |
| Ineffective           | Negligible Risk        | Negligible Risk | Low Risk    |

The likely magnitude of effect is determined at each receptor based on the determined risk and the sensitivity at that receptor to disamenity as presented in Table 3-2.

**Table 3-2: Likely Magnitude of Odour Effect at the Receptor Locations**

| Risk of Odour Exposure | Receptor Sensitivity  |                         |                            |
|------------------------|-----------------------|-------------------------|----------------------------|
|                        | Low                   | Medium                  | High                       |
| High Risk              | Slight Adverse Effect | Moderate Adverse Effect | Substantial Adverse Effect |
| Medium Risk            | Negligible Effect     | Slight Adverse Effect   | Moderate Adverse Effect    |
| Low Risk               | Negligible Effect     | Negligible Effect       | Slight Adverse Effect      |
| Negligible Risk        | Negligible Effect     | Negligible Effect       | Negligible Effect          |

In accordance with the IAQM Odour guidance, where the overall effect is greater than 'minor adverse', the effect is likely to be considered significant.



## 4.0 Baseline Environment

WC, in fulfilment of statutory requirements, has conducted an on-going exercise to review and assess air quality within their administrative area. The latest publicly available LAQM report for WC at the time of writing is the 2025 Annual Status Report<sup>11</sup> (ASR) (inclusive of 2020 – 2024 monitoring datasets).

Pollutant concentrations monitored during 2020 and 2021 (i.e. affected by the COVID-19 pandemic) are expected to be atypical, and not representative of the local environment. This data has therefore not been considered, however, has been presented for completeness

### 4.1 Air Quality Management Areas

WC currently has eight AQMAs within their administrative area. The closest AQMA to the Site is the 'Calne AQMA' located approximately 1km south of the Site. This AQMA was declared in 2013 for exceedances of the annual mean NO<sub>2</sub> AQAL at locations of relevant exposure.

### 4.2 Review of Air Quality Monitoring

#### 4.2.1 Automatic Air Quality Monitoring

The nearest automatic monitor is located approximately 10km south of the Site. Automatic monitoring is therefore not considered representative and has not been considered further.

#### 4.2.2 NO<sub>2</sub> Diffusion Tube Monitoring

NO<sub>2</sub> diffusion tube monitoring was undertaken by WC within the Site locale in 2024. The details and results of the monitoring locations of relevance to the Site (i.e. those within 2km) are presented in Table 4-1 and Table 4-2 respectively, whilst their locations are illustrated in Figure 4-1. All monitoring data presented has been ratified by WC.

**Table 4-1: NO<sub>2</sub> Diffusion Tube Monitoring Sites: Details**

| Site ID | Site Type        | NGR (m) |        | Height (m) | Within AQMA? | Distance to Site (km) |
|---------|------------------|---------|--------|------------|--------------|-----------------------|
|         |                  | X       | Y      |            |              |                       |
| 13      | Urban Background | 400126  | 170745 | 2.5        | No           | 1.2                   |
| 14      | Roadside         | 399873  | 170737 | 2.5        | Yes          | 1.4                   |
| 15      | Roadside         | 399988  | 170587 | 2.5        | Yes          | 1.3                   |
| 16      | Roadside         | 399657  | 171164 | 2.5        | Yes          | 1.2                   |
| 17      | Roadside         | 399650  | 171164 | 2.5        | Yes          | 1.2                   |

**Table 4-2: NO<sub>2</sub> Diffusion Tube Monitoring Sites: Results**

| Site ID | 2024 Data Capture % | Annual Mean NO <sub>2</sub> Concentration (µg/m <sup>3</sup> ) |      |      |      |      |
|---------|---------------------|----------------------------------------------------------------|------|------|------|------|
|         |                     | 2020                                                           | 2021 | 2022 | 2023 | 2024 |
| 13      | 90.6                | 7.8                                                            | 7.8  | 7.4  | 6.2  | 7.4  |
| 14      | 100                 | 40.8                                                           | 42.6 | 33.9 | 28.4 | 27.6 |
| 15      | 100                 | 23.4                                                           | 25.7 | 21.7 | 19.8 | 18.0 |

<sup>11</sup> WC, 2025 Air Quality Annual Status Report, June 2025.



| Site ID | 2024 Data Capture % | Annual Mean NO <sub>2</sub> Concentration (µg/m <sup>3</sup> ) |      |      |      |      |
|---------|---------------------|----------------------------------------------------------------|------|------|------|------|
|         |                     | 2020                                                           | 2021 | 2022 | 2023 | 2024 |
| 16      | 100                 | 19.5                                                           | 20.9 | 19.9 | 16.7 | 15.7 |
| 17      | 100                 | -                                                              | 32.9 | 31.1 | 27.6 | 26.0 |

As shown in Table 4-2, all monitors are 'well-below' (i.e. <75%) the annual mean NO<sub>2</sub> AQAL (40µg/m<sup>3</sup>) in 2024. Concentrations within Calne AQMA averaged below 36µg/m<sup>3</sup> across the previous three full years (2022-2024).

Annual mean NO<sub>2</sub> concentrations have largely reduced across the period assessed, demonstrating local improvements in NO<sub>2</sub> concentrations at key roadside locations, correlating somewhat to national projections.

The empirical relationship given in LAQM.TG(22) states that exceedances of the 1-hour mean NO<sub>2</sub> AQAL are unlikely to occur where annual mean concentrations are <60µg/m<sup>3</sup>. This indicates that exceedances of the 1-hour mean AQAL are unlikely to have occurred at the above locations across the period assessed.

### 4.3 Defra Mapped Background Concentrations

Defra maintains a nationwide model of existing and future background air quality concentrations at a 1km grid square resolution. The data sets include annual average concentration estimates for NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> using a reference year of 2021 (the year in which comparisons between modelled and monitored concentrations are made).

The Defra mapped background concentrations for the base year (2024) are presented in Table 4-3.

**Table 4-3: 2024 Defra Mapped Background Pollutant Concentrations**

| Grid Square (X, Y) (m) | Annual Mean Concentration (µg/m <sup>3</sup> ) |                  |                   |
|------------------------|------------------------------------------------|------------------|-------------------|
|                        | NO <sub>2</sub>                                | PM <sub>10</sub> | PM <sub>2.5</sub> |
| 400500, 172500         | 7.6                                            | 11.7             | 6.8               |
| 400500, 171500         | 6.4                                            | 11.1             | 6.9               |
| <b>AQAL</b>            | <b>40</b>                                      | <b>40</b>        | <b>20</b>         |

All mapped background concentrations are 'well-below' the respective annual mean AQALs and they are expected to decrease further in future years, prior to the Proposed Development becoming operational.

### 4.4 Odour Baseline

The odour baseline has been established following a comprehensive review of the Site's geographical location and surrounding environment to identify any existing odour sources in addition to those referenced by the EHO at WC. The following potential local odour sources have been identified:

- The 'Hills Waste' Material Recovery Facility (MRF);
- The Lower Compton Landfill; and
- Girst Environmental Waste Management Services.

These are illustrated in Figure 4-2 and assessed in Section 6.2.1.



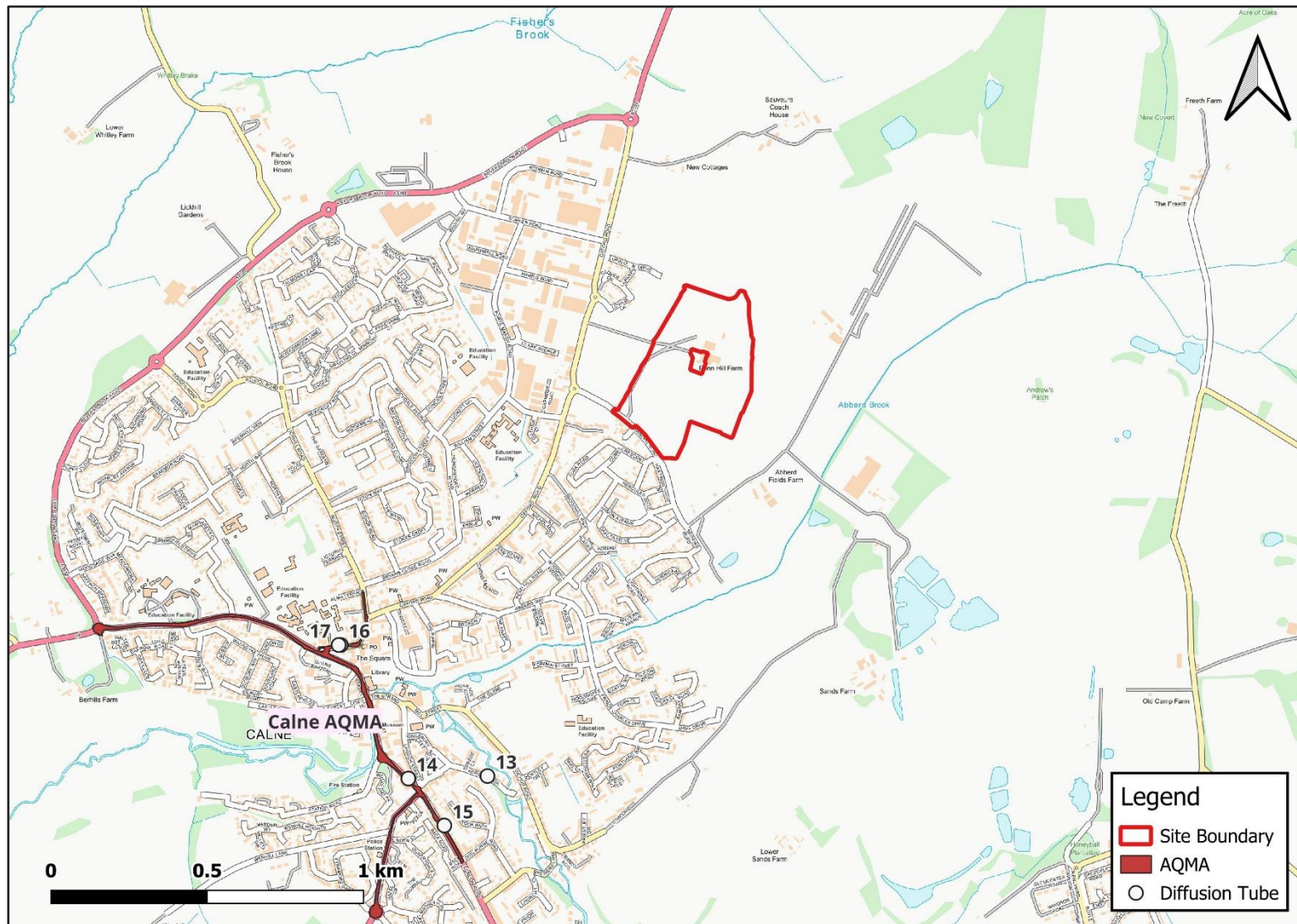


Figure 4-1: Site Setting and Local Air Quality Monitoring



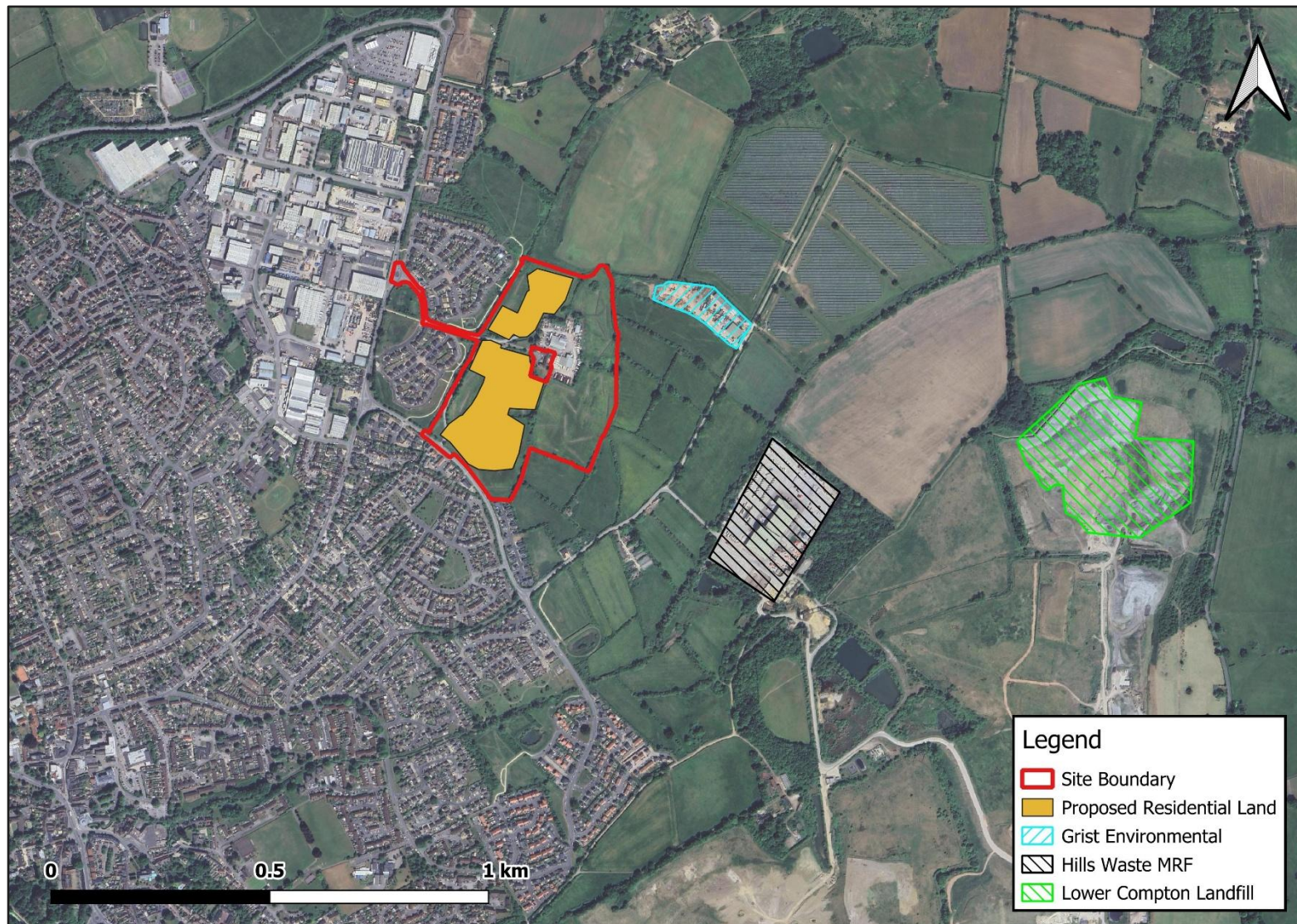


Figure 4-2: Site Setting and Local Potential Odour Sources



## 5.0 Construction Phase Assessment

Where figures relating to area and volume of the Site, approximate number of construction vehicles or distances to receptors are given, these relate to thresholds as defined in the IAQM Construction Dust guidance to guide the assessor to define the dust emissions magnitude and sensitivity of the area.

### 5.1 Assessment Screening

There are 'human receptors' within 250m of the Site but no designated habitat sites within 50m of the Site boundary or 50m of the roads anticipated to witness construction traffic movements up to 250m of the Site access. Therefore, only an assessment of construction dust on human receptors is required.

### 5.2 Potential Dust Emissions Magnitude

#### 5.2.1 Demolition

The Site currently comprises a farmhouse and commercial properties on former farmland. The farmhouse is to be retained and therefore the total building volume required for demolition is 12,000–75,000m<sup>3</sup>. The buildings to be demolished primarily comprise metal fabrication with a low potential for dust release. The dust emission magnitude for demolition is therefore conservatively considered to be 'medium'.

#### 5.2.2 Earthworks

The total area of the Site is >110,000m<sup>2</sup>. However, due to the typically phased nature of the construction of residential developments, the total site area requiring earthworks activities is only anticipated to be 18,000–110,000m<sup>2</sup> at any given time. Furthermore, there are likely to be <10 heavy earth moving vehicles active at any one time. The dust emission magnitude for earthworks is therefore considered to be 'medium'.

#### 5.2.3 Construction

The proposals constitute a total of 210 dwellings and 0.74ha employment land. The total building volume associated with the Proposed Development is calculated to be >75,000m<sup>3</sup>. However, due to the typically phased nature of the construction of residential developments, the total building volume associated with the Proposed Development is only anticipated to be 12,000–75,000m<sup>3</sup> at any given time. The dust emission magnitude for construction is therefore considered to be 'medium'.

#### 5.2.4 Trackout

Construction vehicles will likely access the Site from Sycamore Drive off Oxford Road to the west. Given the scale and nature of works required, it is considered likely that there will be <50 HDV outward movements in any worst-case day. The dust emission magnitude for earthworks is therefore considered to be 'medium'.

#### 5.2.5 Summary

A summary of the potential dust emission magnitude for each of the activities is displayed in Table 5-1.



**Table 5-1: Potential Dust Emission Magnitude**

| Activity     | Dust Emission Magnitude |
|--------------|-------------------------|
| Demolition   | Medium                  |
| Earthworks   | Medium                  |
| Construction | Medium                  |
| Trackout     | Medium                  |

## 5.3 Sensitivity of the Area

### 5.3.1 Dust Soiling Impacts

Overall, there are anticipated to be 10-100 existing residential properties (i.e. high sensitivity receptors) within 20m of the Site boundary. There are 1-10 existing residential properties within 20m of any potential demolition activities.

Furthermore, there are 10-100 existing residential properties within 20m of sections of the roads anticipated to witness construction traffic up to 250m from the Site (the trackout routes).

The sensitivity of the area with respect to dust soiling effects on people and property in relation to demolition is considered 'medium' and in relation to earthworks, construction and trackout is considered 'high'.

### 5.3.2 Human Health Impacts

The maximum 2024 mapped background PM<sub>10</sub> concentration (2021 reference year) for the 1km<sup>2</sup> grid squares covering the Site is estimated to be 11.7µg/m<sup>3</sup> (i.e. falls into the <24µg/m<sup>3</sup> class).

Given the above information regarding the number and nature of surrounding receptors within 20m of the Site boundary and 20m of potential demolition activities, the sensitivity of the area with respect to human health impacts in relation to demolition, earthworks, construction and trackout is considered to be 'low'.

### 5.3.3 Summary

A summary of the sensitivity of the area defined for each potential impact is displayed in Table 5-2, whereas the spatial densities of receptors discussed in relation to the Site boundary are illustrated in Figure 5-1.

**Table 5-2: Sensitivity of the Area**

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

## 5.4 Risk of Impacts (Unmitigated)

The outcome of the assessment of the potential 'magnitude of dust emissions', and the 'sensitivity of the area' are combined in Table 5-3 below to determine the risk of impact which is used to inform the selection of appropriate mitigation.



**Table 5-3: Risk of Dust Impacts (Unmitigated)**

| Potential Impact     | Demolition  | Earthworks  | Construction | Trackout    |
|----------------------|-------------|-------------|--------------|-------------|
| Dust Soiling Impacts | Medium Risk | Medium Risk | Medium Risk  | Medium Risk |
| Human Health Impacts | Low Risk    | Low Risk    | Low Risk     | Low Risk    |

## 5.5 Mitigation

Following the construction dust assessment, the Site is found to be at worst:

- 'Medium risk' in relation to dust soiling effects on people and property; and
- 'Low risk' in relation to human health impacts.

However, potential dust effects during the construction phase are considered to be temporary in nature and may only arise at particular times (i.e. certain activities and/or meteorological conditions).

The maximum dust risk has informed the suite of mitigation required to minimise or eliminate potential impacts Appendix). With effective implementation of these measures, residual effects are considered 'not significant'.





**Figure 5-1: Construction Dust Buffers**



## 6.0 Operational Phase Assessment

This section presents the potential air quality impacts and effects associated with the operation of the Proposed Development.

### 6.1 Site Suitability/Exposure Assessment

With reference to information discussed in Section 3.3, the following has been used to inform the suitability of the Site, relative to its proposed residential use.

In consideration of WC's SPD:

- The Site is not located adjacent to or within an AQMA; and
- The Site is not located in an area where there is a risk of exceedance in the AQALs (e.g. near large fugitive emissions sources).

With reference to information in Section 0, the following has also been used to inform the suitability of the Site, relative to its proposed residential use in consideration of the EPIC & IAQM guidance:

- The nearest AQMA to the Site is approximately 1km south (i.e. the Calne AQMA), and therefore future residents will not be located within a known area of poor air quality;
- Local monitors within Calne AQMA recorded annual mean NO<sub>2</sub> concentrations 'well-below' the AQAL (40µg/m<sup>3</sup>) in 2024 (i.e. <75%). Based upon these local monitored concentrations, exceedances of the annual mean and 1-hour mean NO<sub>2</sub> AQALs are considered 'unlikely' at the Site. Furthermore, concentrations have demonstrated a downward trend, demonstrating local improvements at key roadside locations; and
- Defra mapped background concentrations are also 'well below' the relevant NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> AQALs for the 1km grid squares containing the Site. Background PM<sub>2.5</sub> concentrations are also below the 2040 target of 10µg/m<sup>3</sup>.

#### 6.1.1 Summary

Overall, the findings of the exposure assessment show the Site is suitable for the proposed residential use, and no further assessment is required. Effects associated with the likely exposure of future occupants in relation to NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> concentrations are considered not significant and no further mitigation measures are required.

## 6.2 Odour Assessment

### 6.2.1 Source Odour Potential

A detailed evaluation of the processes and activities associated with the identified potential odour sources has been undertaken to determine their potential for odour generation and to categorise the associated odour potential.

Historical odour complaint data for the previous five years has been requested from WC and the Environment Agency (EA). Complaints received by WC are presented in Table 6-1, however, complaints to the EA had not been received at the time of writing.



**Table 6-1: Summary of Odour Complaints to WC**

| Date Reported                                   | Approximate Location             | Odour Nature / Descriptor                                                                                    | Substantiated / Outcome                                  |
|-------------------------------------------------|----------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| 11/05/2021                                      | North Calne (Tesco)              | Terrible Stench                                                                                              | Referred to EA                                           |
| 26/08/2021                                      | Embry Close (east of Calne)      | Constant foul smell                                                                                          | Not known                                                |
| 07/10/2021                                      | Trenchard Avenue (east of Calne) | Ongoing Odour                                                                                                | Referred to EA. Regular meetings with EA regarding site. |
| 21/02/2024                                      | Compton Bassett (east of Calne)  | Landfill site is very smelly and not contained                                                               | Referred to EA                                           |
| 05/03/2025 (a number of different complainants) | Calne (various)                  | Noxious odour.<br>Rotten sulphur smell.<br>Gross smell causing a headache, so strong it makes you feel sick. | Substantiated. Referred to EA                            |

Complaints to WC prior to 2025 were limited, with no evidence of historical persistent, long-term odour impacts. The recorded complaints were generally located either to the east or north of Calne and therefore were not located near of any proposed receptor locations.

However, a number of complaints relating to offensive waste odours were received across Calne in March 2025, presumed to be associated with the Lower Compton Landfill. This sudden influx of complaints indicates a potential issue with odour management at the Landfill rather than a longer term problem. This matter is investigated further in Section 6.2.1.3.

#### 6.2.1.1 Grist Environmental Waste Management Services

Grist Environmental operates as a waste-management and recycling company, offering services including skip hire, wheelie-bin hire, scrap metal processing, and hazardous waste collections. They accept construction and demolition waste, as well as commercial and industrial waste streams, with any hazardous materials managed in accordance with regulatory requirements.

Operations in the Calne area are understood to focus primarily on general waste collection and skip/bin services, while waste processing is undertaken at their dedicated MRF in Devizes.

A review of current aerial imagery indicates the presence of a processing building on the site, along with several external stockpiles that appear to comprise inert waste (potentially construction-related materials). A number of skips and service vehicles are also visible within the operational area.

As the site, the potential for odour generation is considered to be 'small'.

Based on the current understanding of waste types and, operational activities (predominantly handling non-putrescible waste and recyclable materials), the odour source potential at the Calne depot is considered to be 'small'.

#### 6.2.1.2 Hills Waste MRF

The site operated by Hills Waste Solution as a MRF, where dry mixed recyclables are received, sorted, bulked, and stored prior to onward recovery. All sorting activities are undertaken within the main processing building. Glass and textiles are only received and



stored at the facility and do not undergo any mechanical processing. The site also includes the temporary storage of appropriately contained household clinical waste pending disposal.

The site is regulated under an Environmental Permit issued by the Environment Agency (Permit Ref: EPR/HB3307HF), with an authorised throughput capacity of up to 52,000 tonnes/annum. In relation to odour the permit also specifies:

*“emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.”*

Considering the predominantly non-putrescible nature of the waste streams, the enclosed handling of clinical waste, compliance with environmental permit requirements, and the presence of site-specific odour management controls, the overall odour source potential of the MRF is considered to be ‘small’.

### 6.2.1.3 Lower Compton Landfill

Lower Compton Landfill, operated by Hills Waste Solutions is permitted by the Environment Agency (Permit Ref: EPR/BU5801ID) for the disposal of large quantities of non-hazardous waste, including biological treatment activities, with an authorised capacity exceeding 25,000 tonnes/annum.

The operator has previously acknowledged that site activities have contributed to local odour complaints in recent months<sup>12</sup>. This aligns with the odour complaints received by WC in March 2025 (Table 6-1). It is understood that the operator subsequently implemented a number of remedial measures to mitigate these issues<sup>13</sup>, and it is noted that no further odour complaints have been received by WC since that time.

Despite this, for the purpose of this assessment, the landfill is assumed to represent a ‘large’ odour source potential in order to adopt a conservative approach.

## 6.2.2 Pathway Effectiveness

### 6.2.2.1 Meteorological Conditions

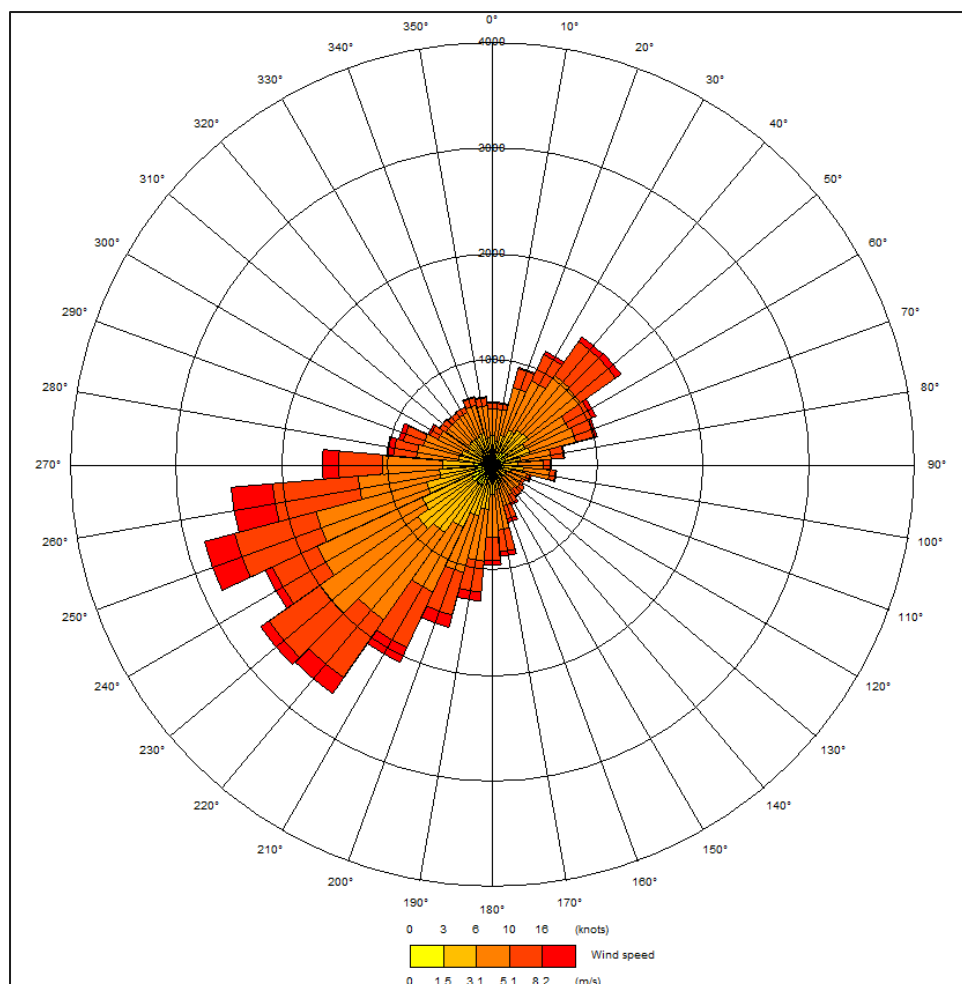
A wind rose of 2020-2024 meteorological data from Lyneham Meteorological station, located approximately 6km north of the Site, is presented in Figure 6-1. The data indicate that the prevailing winds are from the south-west (10.6% SSW, 13.4% SW, 11.7% WSW).

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<sup>12</sup> <https://www.bbc.co.uk/news/articles/cgj89wee895o>.

<sup>13</sup> [https://moderngov.microshadeapplications.co.uk/calnetc/documents/s17059/28%20July%20-%20Lower%20Compton%20landfill%20works%20-%20Liaison%20update.pdf?utm\\_source=chatgpt.com](https://moderngov.microshadeapplications.co.uk/calnetc/documents/s17059/28%20July%20-%20Lower%20Compton%20landfill%20works%20-%20Liaison%20update.pdf?utm_source=chatgpt.com)





**Figure 6-1: Wind Rose for 2020-2024 Lyneham Meteorological Station Data**

In relation to the identified potential odour sources, the proportion of time that winds could transport odour towards the proposed residential receptors has been assessed. Table 6-2 summarises the annual frequency of winds blowing from the direction of each potential odour source towards the proposed residential receptors. Consultation feedback from the EHO highlighted the need to consider a representative range of wind directions; this has been incorporated into the assessment.

**Table 6-2: Frequency of Wind Direction Blowing from Odour Sources towards the Proposed Development**

| Odour Source           | Wind Direction (from) | Frequency (%) | Total Frequency (%) |
|------------------------|-----------------------|---------------|---------------------|
| Grist Environmental    | E                     | 4.2           | 22.6                |
|                        | ENE                   | 8.0           |                     |
|                        | NE                    | 10.4          |                     |
| Hills Waste MRF        | E                     | 4.2           | 5.8                 |
|                        | ESE                   | 1.6           |                     |
| Lower Compton Landfill | E                     | 4.2           | 12.2                |
|                        | ENE                   | 8.0           |                     |

Overall, the data indicates that winds are predominantly blowing away from the proposed receptors for the majority of the year. Consequently, the potential for odour to be transported



towards sensitive residential receptors is limited and infrequent based on wind direction frequency alone.

Furthermore, even when the wind is blowing from the source towards the proposed residential receptors, odour dispersion may still be limited by low wind speeds, and odours may also be suppressed by wet conditions, further restricting the pathway.

### 6.2.2.2 Distance and Pathway from Source to Receptor

The Site layout design is favourable from an odour perspective, as more sensitive uses (i.e. residential) are positioned to the west of the Site, as illustrated in Figure 4-2.

Distances from the proposed residential dwellings to the identified sources of odour are presented in Table 6-3.

**Table 6-3: Determination of Likely Odour Effect – SPR Assessment**

| Odour Source           | Potential Odour Component | Distance from Proposed Residential Use (m) |
|------------------------|---------------------------|--------------------------------------------|
| Grist Environmental    | Stockpiles                | 190                                        |
|                        | Process Building          | 325                                        |
| Hills Waste MRF        | Boundary                  | 510                                        |
|                        | Process Building          | 575                                        |
| Lower Compton Landfill | Landfill                  | 1,100                                      |

As such, the proposed residential receptors are considered to be distant from the identified potential odour sources. Moderate to higher wind speeds would therefore be required to transport odour to receptors at this distance. However, these conditions also promote greater dilution and atmospheric mixing, which in turn reduces the concentration of odour that may reach the receptors.

In addition, several existing areas of vegetation lie between the potential odour sources and the Proposed Development. These vegetated boundaries will provide some physical disruption to airflow and aid dispersion, further reducing the potential for odour transport at ground level. The proposed landscaping along the eastern boundary of the Site, including new tree planting, will enhance this effect.

### 6.2.2.3 Summary

In consideration of the above, there is considered to be an 'ineffective' pathway for odour flux to receptors from Hills Waste MRF and Lower Compton Landfill. To facilitate a conservative assessment, a moderately effective pathway has been applied to Grist Environmental given it has a shorter separation distance and increased frequency of winds relative to the other sources.

## 6.2.3 Proposed Receptor Locations

The proposed residential land use is considered to be of 'high' sensitivity to odour in accordance with the IAQM Odour guidance.

## 6.2.4 Likely Magnitude of Odour Effect

In reference to the methodology outlined in the IAQM Odour guidance, the likely magnitude of odour effect has been determined by consideration of the source odour potential, pathway effectiveness and receptor sensitivity. The results are summarised in Table 6-4.



**Table 6-4: Determination of Likely Odour Effect – SPR Assessment**

| Odour Source           | Odour Source Potential | Pathway Effectiveness | Risk of Odour Exposure | Receptor Sensitivity | Likely Odour Effect |
|------------------------|------------------------|-----------------------|------------------------|----------------------|---------------------|
| Grist Environmental    | Small                  | Moderately Effective  | Negligible Risk        | High                 | Negligible          |
| Hills Waste MRF        | Small                  | Ineffective           | Negligible Risk        | High                 | Negligible          |
| Lower Compton Landfill | Large                  | Ineffective           | Low Risk               | High                 | Slight Adverse      |

As indicated in Table 6-4, the calculated 'likely odour effect' at all receptors is predicted to be at worst 'slight adverse'. The overall significance of effect is therefore not significant at all proposed receptors in accordance with the IAQM Odour guidance.



## 7.0 Mitigation Measures

This section presents any proportionate mitigation measures required during the construction and operational phases of the Proposed Development.

### 7.1 Construction Dust

As discussed in Section 5.0, construction impacts associated to the Proposed Development would result in the generation of dust and PM<sub>10</sub>.

A range of mitigation measures are presented in Appendix B which could be applied and align with the IAQM Construction Dust guidance. With the effective application of the dust mitigation measures, residual effects are considered not significant.

While this document does not form a Construction Environmental Management Plan (CEMP), the measures outlined would be suitable for inclusion within one at a later, more appropriate stage.

### 7.2 Operational Phase

In accordance with the WC Air Quality SPD guidance, the Proposed Development does not lie within 5km of a monitoring location where the average annual mean NO<sub>2</sub> concentration has exceeded 36µg/m<sup>3</sup> over the past three years. As such, long-term scheme-specific mitigation measures in relation to operational effects arising from road traffic emissions or pollutant exposure are therefore not considered to be necessary.

Furthermore, no exposure mitigation measures are found to be required to mitigate against odour effects.

Notwithstanding the above, measures consistent with those required for a 'Type 2' development, as outlined in the WC Air Quality SPD, are necessary.

#### 7.2.1 EV Charging

EV charging will be installed on Site which meets WC requirements outlined in Table 7-1.

**Table 7-1: Air Quality SPD EV Charging Requirements**

| Land Use                                                                                           | EV Requirement                                                                                                                                                                                                                                                                                                                                                                                                      | Minimum Nominal Rated Output                                          |
|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| New residential dwellings with garage or private driveway                                          | One active EV charging point per dwelling                                                                                                                                                                                                                                                                                                                                                                           | 7kW minimum                                                           |
| New residential buildings without a garage/private driveway OR with communal parking (e.g., flats) | <p>All parking spaces must have one active EV charging point per parking space where:</p> <ul style="list-style-type: none"> <li>There are fewer parking spaces than dwellings; or</li> <li>The number of parking spaces are equal to the number of dwellings.</li> </ul> <p>All remaining spaces must have infrastructure for future EV charging (e.g., cable routes, distribution boards, suitable locations)</p> | 7kW minimum                                                           |
| Employment sites                                                                                   | 20% of parking spaces with active provision.                                                                                                                                                                                                                                                                                                                                                                        | 7kW minimum.<br>At least one rapid charger of ≥50kW, unless it can be |



| Land Use | EV Requirement                                                                                                                  | Minimum Nominal Rated Output            |
|----------|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
|          | Additional 20% with passive provision.<br>For high turnover parking: rapid charging should be provided (e.g., 1-hour max stay). | demonstrated why this is not necessary. |

### 7.2.2 Low Emission Travel Plan

The Proposed Development will be supported by a site-specific Travel Plan that promotes sustainable and low-emission travel to reduce reliance on single-occupancy vehicles. Measures will include high-quality walking and cycling facilities, enhanced public transport access, car-sharing initiatives, and support for ultra-low emission vehicle (ULEV) use.

A defined implementation and monitoring framework will secure and track modal shift, contributing to the reduction of traffic-related pollutant emissions.



## 8.0 Conclusions

SLR has been commissioned by Castlewood Properties Ventures Ltd to undertake an air quality assessment to appraise a planning application for the proposed residential development of 210 dwellings and 0.74ha of employment land and ancillary uses at Penn Hill Farm, Calne, Wiltshire.

### 8.1 Construction Phase

A qualitative assessment of the potential dust impacts during the construction of the development has been undertaken following IAQM Construction Dust guidance. Following the construction dust assessment, the Proposed Development is found to be at worst 'medium risk' in relation to dust soiling effects on people and property and 'low risk' in relation to human health impacts.

Providing effective mitigation measures are implemented, such as those outlined in Appendix B of this report, residual impacts from dust emissions during the construction phase are considered not significant.

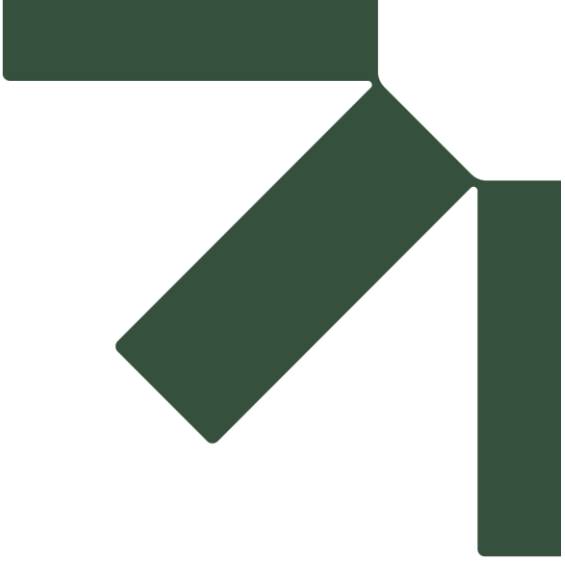
### 8.2 Operational Phase

The Proposed Development falls within the 'Type 2' category as defined by the WC Air Quality SPD. Therefore, further detailed assessment of road traffic impacts or specific mitigation is not required. However, in line with the SPD requirements for a Type 2 development and as outlined in Section 7.2, EV charging will be installed to meet WC requirements and a Travel Plan will be developed which encourages sustainable and low-emission travel.

A qualitative exposure assessment has been undertaken to determine the suitability of the Site for residential use. The findings confirm compliance with NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> AQALs demonstrating that future occupants will not be exposed to significant air quality effects. No additional assessment is therefore necessary.

A qualitative odour assessment has also been completed. In accordance with IAQM Odour Guidance, the overall significance of odour effects is not significant. No additional mitigation is therefore required.





# Appendix A    Legislation and Policy

## **Land at Penn Hill, Calne**

### **Air Quality and Odour Assessment**

#### **Castlewood Properties Ventures Ltd**

SLR Project No.: 410.067010.00001

11 November 2025



## A.1 Legislation

A dual set of regulations, separately applicable to National and Local Government, are currently operable within the UK.

### A.1.1 National Obligations

The Air Quality Standards Regulations 2010<sup>14</sup> (AQSR) transpose both the EU Ambient Air Quality Directive (2008/50/EC), and the Fourth Daughter Directive (2004/107/EC) within UK legislation. The AQSR includes Limit Values which are legally binding ambient concentration thresholds which, however, are only applicable at specific locations (Schedule 1: AQSR)<sup>15</sup>.

Following the UK's withdrawal from the EU, the Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020<sup>16</sup> was introduced to mirror revisions to supporting EU legislation. As a result, the fine particulate matter (as PM<sub>2.5</sub>) Limit Value is 20µg/m<sup>3</sup> (to be met by 2020).

The responsibility of achieving the AQSR (and European equivalent Directives) is a national obligation for Central Government. Local Authorities have no statutory obligation to achieve the AQSR or the European equivalent Directives, unless otherwise instructed to assist Central Government under Ministerial Direction.

The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023<sup>17</sup> introduced an annual mean concentration target of 10µg/m<sup>3</sup> to be met across England by 2040. Central Government is responsible for meeting this future target, whereas Local Authorities have no statutory obligation to achieve this target.

### A.1.2 Local Obligations

Part IV of the Environment Act 1995 (as amended) requires the Secretary of State to review the national Air Quality Strategy (AQS) every five years and update it as necessary. It also established the Local Air Quality Management (LAQM) framework, under which Local Authorities must regularly assess air quality in their areas.

The Air Quality (England) Regulations 2000 (as amended) ('the Regulations') set the statutory Air Quality Objectives that Local Authorities must meet under LAQM. PM<sub>2.5</sub> is not currently cited; however, Local Authorities are required to work towards reducing it. To support this, the Department for Environment, Food and Rural Affairs (Defra) issued PM<sub>2.5</sub> Targets: Interim Planning Guidance<sup>18</sup> which Local Authorities are encouraged to consider when determining planning applications.

The Air Quality Objectives apply at locations where members of the public are regularly present and might reasonably be expected to be exposed to pollutant concentrations over the relevant averaging period (referred to as 'relevant exposure'). Table 2-2 provides an indication of those locations. If any objective is unlikely to be met, the Local Authority must declare an AQMA and prepare an Air Quality Action Plan (AQAP) to improve air quality.

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<sup>14</sup> The Stationary Office Limited (TSOL). The Air Quality Standards Regulations (England) 2010, Statutory Instrument No. 1001.

<sup>15</sup> Schedule 1 of the 2010 AQSR provides the locations of the sampling points where the AQSR Limits Values can be assessed.

<sup>16</sup> TSOL, The Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020, Statutory Instrument No. 1313.

<sup>17</sup> TSOL, The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023, Statutory Instrument No. 96.

<sup>18</sup> Defra, PM<sub>2.5</sub> Targets: Interim Planning Guidance, October 2024.



The latest AQS for England was published in 2023<sup>19</sup>. The AQS provides the delivery framework for air quality management across England for local authorities and summarises the air quality standards and objectives operable within England for the protection of public health and the environment.

## A.2 Policy

### A.2.1 National Planning Policy Framework

The December 2024 update to the National Planning Policy Framework<sup>20</sup> (NPPF) sets out planning policy for England. The NPPF states that the planning system should contribute to and enhance the natural and local environment, by preventing new development from contributing to or being adversely affected by unacceptable concentrations of air pollution and development should, wherever possible, help to improve local environmental conditions such as air quality.

In specific relation to air quality policy, the document states:

***“Chapter 15 - Conserving and Enhancing the Natural Environment***

***Ground Conditions and Pollution***

*Para 199: Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, considering 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 NPPF is accompanied by web based supporting Planning Practice Guidance (PPG)<sup>21</sup> which includes guiding principles on how planning can take account of the impacts of new development on air quality. In regard to air quality, the PPG states:

*“The Department for Environment, Food and Rural Affairs carries out an annual national assessment of air quality using modelling and monitoring to determine compliance with relevant limit values. It is important that the potential impact of new development on air quality is taken into account where the national assessment indicates that relevant limits have been exceeded or are near the limit, or where the need for emissions reductions has been identified.”*

*“Whether air quality is relevant to a planning decision will depend on the proposed development and its location. Concerns could arise if the development is likely to have an adverse effect on air quality in areas where it is already known to be poor, particularly if it could affect the implementation of air quality strategies and action plans and/or breach legal obligations (including those relating to the conservation of*

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<sup>19</sup> Defra, Air Quality Strategy: Framework for Local Authority Delivery, April 2023.

<sup>20</sup> Ministry of Housing, Communities & Local Government, National Planning Policy Framework, December 2024.

<sup>21</sup> Ministry of Housing, Communities and Local Government, Planning Practice Guidance Air Quality, November 2019.



*habitats and species). Air quality may also be a material consideration if the proposed development would be particularly sensitive to poor air quality in its vicinity.”*

The PPG advises that air quality assessments should be proportionate to the nature and scale of the proposed development and its potential impacts. Mitigation should also be tailored and proportionate.

### **A.2.2 Local Policy: Wiltshire Core Strategy**

The Wiltshire Core Strategy<sup>22</sup> provides the strategic planning policy for Wiltshire and covers the period (2015–2026). Notwithstanding, the following policies relating to air quality and odour have been considered:

#### **“Core Policy 55: Air quality**

*Development proposals, which by virtue of their scale, nature or location are likely to exacerbate existing areas of poor air quality, will need to demonstrate that measures can be taken to effectively mitigate emission levels in order to protect public health, environmental quality and amenity. Mitigation measures should demonstrate how they will make a positive contribution to the aims of the Air Quality Strategy for Wiltshire and where relevant, the Wiltshire Air Quality Action Plan. Mitigation may include:*

- i. landscaping, bunding or separation to increase distance from highways and junctions;*
- ii. possible traffic management or highway improvements to be agreed with the local authority 281;*
- iii. abatement technology and incorporating site layout/separation and other conditions in site planning;*
- iv. traffic routing, site management, site layout and phasing; and*
- v. where appropriate, contributions will be sought toward the mitigation of the impact a development may have on levels of air pollutants.”*

#### **“Core Policy 57: Ensuring high quality design and place shaping**

*A high standard of design is required in all new developments, including extensions, alterations, and changes of use of existing buildings. Development is expected to create a strong sense of place through drawing on the local context and being complementary to the locality. Applications for new development must be accompanied by appropriate information to demonstrate how the proposal will make a positive contribution to the character of Wiltshire through: [...]*

- vii. having regard to the compatibility of adjoining buildings and uses, the impact on the amenities of existing occupants, and ensuring that appropriate levels of amenity are achievable within the development itself, including the consideration of [...] pollution (e.g. light intrusion, noise, smoke, fumes, effluent, waste or litter). [...]*

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<sup>22</sup> Wiltshire Council, Wiltshire Local Development Framework, Wiltshire Core Strategy, adopted January 2015.



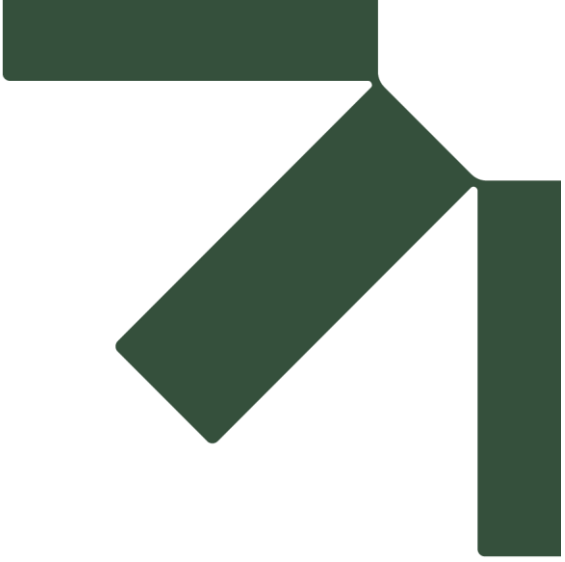
#### **8.2.1.2 Wiltshire Local Plan – Pre-Submission Draft**

WC are in the process of developing a new local plan which will guide development till 2038. The Draft Local Plan<sup>23</sup> is currently undergoing Regulation 19 consultation. The new local plan doesn't introduce a material change to policies governing air quality, rather Policy 98 largely mirrors core Policy 57 and Policy 101 largely mirrors Core Policy 55 – outlined above.

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<sup>23</sup> Wiltshire Council, Wiltshire Local Plan, Pre-Submission Draft (Regulation 19), September 2023.





# **Appendix B    Construction Dust Mitigation Measures**

**Land at Penn Hill, Calne**

**Air Quality and Odour Assessment**

**Castlewood Properties Ventures Ltd**

SLR Project No.: 410.067010.00001

11 November 2025

## B.1 Construction Dust Mitigation Measures

**Table B-1: Construction Dust Mitigation Measures**

| Site Application                                     | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Highly Recommended</b>                            |                                                                                                                                                                                                                                                                                                                                                                                        |
| Communications                                       | Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.                                                                                                                                                                                                                                                              |
|                                                      | Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.                                                                                                                                                                                                  |
|                                                      | Display the head or regional office contact information.                                                                                                                                                                                                                                                                                                                               |
|                                                      | Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. The level of detail will depend on the risk and should include as a minimum the highly recommended measures in this document. The desirable measures should be included as appropriate for the site.                                       |
| Construction                                         | Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.                                                                                                                                                          |
| Demolition                                           | Ensure effective water suppression is used during demolition operations. Handheld sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.                     |
|                                                      | Avoid explosive blasting, using appropriate manual or mechanical alternatives.                                                                                                                                                                                                                                                                                                         |
|                                                      | Bag and remove any biological debris or damp down such material before demolition.                                                                                                                                                                                                                                                                                                     |
| Monitoring                                           | Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked.                                                                                                                                                                                                              |
|                                                      | Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.                                                                                                                                                 |
|                                                      | Agree dust deposition, dust flux, or real-time PM <sub>10</sub> continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction. |
| 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.                                                                                                                                                                                                                                                        |
| Operations                                           | Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.                                                                                                                                                                           |



| Site Application                   | Mitigation Measures                                                                                                                                                                      |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                    | Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.                        |
|                                    | Use enclosed chutes and conveyors and covered skips.                                                                                                                                     |
|                                    | Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.                 |
|                                    | Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.            |
| Preparing and Maintaining the Site | Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.                                                                   |
|                                    | Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.                                                        |
|                                    | Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period.                                            |
|                                    | Avoid site runoff of water or mud.                                                                                                                                                       |
|                                    | Keep site fencing, barriers and scaffolding clean using wet methods.                                                                                                                     |
|                                    | Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.          |
|                                    | Cover, seed or fence stockpiles to prevent wind whipping.                                                                                                                                |
| 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 local authority when asked.                                                                                                                     |
|                                    | 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 logbook.                              |
| Trackout                           | Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use. |
|                                    | Avoid dry sweeping of large areas.                                                                                                                                                       |
|                                    | Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.                                                                                  |
|                                    | Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.                                                              |
|                                    | Record all inspections of haul routes and any subsequent action in a site logbook.                                                                                                       |
|                                    | Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.                                |



| Site Application                                   | Mitigation Measures                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                    | Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).                                                                                                                                                                                                                                            |
|                                                    | 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.                                                                                                                                                                                                                                                                                                                       |
| Waste Management                                   | Avoid bonfires and burning of waste materials.                                                                                                                                                                                                                                                                                                                                               |
| <b>Desirable</b>                                   |                                                                                                                                                                                                                                                                                                                                                                                              |
| Construction                                       | Avoid scabbling (roughening of concrete surfaces) if possible.                                                                                                                                                                                                                                                                                                                               |
|                                                    | Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.                                                                                                                                                                               |
|                                                    | For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust.                                                                                                                                                                                                                                                                      |
| Demolition                                         | Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).                                                                                                                                                                                                                                    |
| Earthworks                                         | Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.                                                                                                                                                                                                                                                                                       |
|                                                    | Use Hessian, mulches or tackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable                                                                                                                                                                                                                                                                     |
|                                                    | Only remove the cover in small areas during work and not all at once.                                                                                                                                                                                                                                                                                                                        |
| Monitoring                                         | Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100m of site boundary, with cleaning to be provided if necessary. |
| Operating vehicle/machinery and sustainable travel | Impose and signpost a maximum-speed-limit of 15mph on surfaced and 10mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate).                                  |
|                                                    | Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).                                                                                                                                                                                                                                                               |





Making Sustainability Happen