



Land East of Henfield Road, Cowfold

Air Quality Assessment

May 2026



Air Quality Assessment

Land East of Henfield Road (A281),
Cowfold

May 2026

Air Quality Assessment

Land East of Henfield Road (A281), Cowfold

May 2026

Landacre Developments Limited

Stockers Farm

Chichester

West Sussex

PO10 3PY

Document Control:

Project No.	Project
14647	Land East of Henfield Road (A281), Cowfold

Report No.	Version	Written By:	Checked by:	Authorised by:	Date
14647	V0 Draft	J. Mills / R. Boakes	J. Ferguson-Moore	J. Ferguson-Moore	06.05.2026
	V1				11.05.2026

This report has been prepared for the exclusive use of the commissioning party and may not be reproduced without prior written permission from Phlorum Limited.

All work has been carried out within the terms of the brief using all reasonable skill, care and diligence.

No liability is accepted by Phlorum for the accuracy of data or opinions provided by others in the preparation of this report, or for any use of this report other than for the purpose for which it was produced.

Phlorum Limited

Southern Office: Unit 12, Hunns Mere Way, Woodingdean, Brighton, East Sussex, BN2 6AH

T: 01273 307 167 E: info@phlorum.com W: www.phlorum.com

Contents

1.	Introduction.....	1
2.	Policy Context.....	2
3.	Assessment Methodology	9
4.	Baseline Air Quality	15
5.	Construction Phase Impacts.....	19
6.	Operational Phase	24
7.	Emissions Mitigation Assessment.....	27
8.	Discussion	30
9.	Conclusions.....	32

Figures:

Figure 1: Site Location and Layout

Figure 2: Local Air Quality Monitoring Sites

Figure 3: Construction Phase

Appendices:

Appendix A: Recommended Construction Phase Mitigation

1. Introduction

- 1.1 Phlorum Limited was commissioned by Landacre Developments Limited ("the Client") to undertake an Air Quality Assessment to accompany an outline planning application for approximately 40 residential dwellings, vehicular access, car parking, landscaping and other associated works and infrastructure on land to the east of the A281 Henfield Road, in Cowfold.
- 1.2 The National Grid Reference for the centre of the site is 521400, 122010. The site's location is displayed in Figure 1.
- 1.3 Land use in the vicinity of the site is mixed, comprising predominantly residential uses and greenspaces, with commercial uses interspersed.
- 1.4 The main sources of air pollution in the vicinity of the site are motor vehicles travelling on the local road network, particularly the A281 Henfield Road, from which the site will be accessed.
- 1.5 Air quality is managed locally by Horsham District Council (HDC) who currently operate one Air Quality Management Area (AQMA) within the district; the Horsham AQMA No. 1, which encompasses sections of West Street, the High Street, and part of School Hill and Manleys Hill, in Storrington. This AQMA was declared in 2010 due to exceedances of the annual mean UK Air Quality Standard (AQS) for nitrogen dioxide (NO₂). The Horsham AQMA No. 1 is located approximately 15km south-west of the application site.
- 1.6 HDC had previously operated another AQMA in the district; The Cowfold AQMA, encompassing sections of The Street, part of Station Road and Bolney Road, approximately 0.4km north of the application site. However, this AQMA was revoked by HDC in 2026 as no exceedances of the UK AQSs have been monitored at locations within the AQMA in recent years, thereby demonstrating improved air quality locally.

Scope of Assessment

- 1.7 This Air Quality Assessment considers the potential for air quality impacts to arise during the construction of the proposed development. The assessment also evaluates the potential impact of the proposed operational development upon local air quality and the suitability of the site, in air quality terms, for the proposed residential use.

2. Policy Context

The UK Air Quality Strategy

- 2.1 The UK Air Quality Strategy¹ sets out Air Quality Standard (AQS) concentrations for a number of key pollutants that are to be achieved at sensitive receptor locations across the UK by corresponding air quality objective (AQO) dates. The sensitive locations at which the standards and objectives apply are those where the population is reasonably expected to be exposed to said pollutants over a particular averaging period.
- 2.2 For those objectives to which an annual mean standard applies, the most common sensitive receptor locations used to compare concentrations against the standards are areas of residential housing. It is reasonable to expect that people living in their homes could be exposed to pollutants over such a period of time.
- 2.3 Schools and children's playgrounds are also often used as sensitive locations for comparison with annual mean objectives due to the increased sensitivity of young people to the effects of pollution (regardless of whether or not their exposure to the pollution could be over an annual period). For shorter averaging periods of between 15 minutes, 1 hour or 1 day, the sensitive receptor location can be anywhere where the public could be exposed to the pollutant over these shorter periods of time. A summary of the AQSs and AQOs relevant to this assessment are included in Table 2.1, below.

Table 2.1: UK Air Quality Standards and Objectives

Pollutant	Averaging Period	Air quality standard ($\mu\text{g.m}^{-3}$)	Air quality objective
Nitrogen dioxide (NO_2)	1 hour	200	200 $\mu\text{g.m}^{-3}$ not to be exceeded more than 18 times a year
	Annual	40	40 $\mu\text{g.m}^{-3}$
Particulate Matter (PM_{10})	24-hour	50	50 $\mu\text{g.m}^{-3}$ not to be exceeded more than 35 times a year
	Annual	40	40 $\mu\text{g.m}^{-3}$
Particulate Matter ($\text{PM}_{2.5}$)	Annual	20	20 $\mu\text{g.m}^{-3}$

¹ Air Quality Strategy for England, Scotland, Wales and Northern Ireland (Volumes 1 and 2) July 2007.

- 2.4 The objectives adopted in the UK are based on the Air Quality (England) Regulations 2000², as amended, for the purpose of Local Air Quality Management. These Air Quality Regulations have been adopted into UK law from the limit values required by European Union Daughter Directives on air quality.
- 2.5 The UK AQS for PM_{2.5} was amended in 2020, as part of the Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020³.
- 2.6 In 2025, Defra published their updated *Environmental Improvement Plan 2025*⁴, which establishes a legal limit value of 10 µg/cu.m. for annual mean concentrations of PM_{2.5} to be achieved by 31st December 2040.
- 2.7 Obligations under the Environment Act 1995 require local authorities to declare an AQMA at sensitive receptor locations where an objective concentration has been predicted to be exceeded. In setting an AQMA, the local authority must then formulate an Air Quality Action Plan (AQAP) to seek to reduce pollution concentrations to values below the objective levels.
- 2.8 Air quality is managed locally by HDC, who, since revoking the Cowfold AQMA in February 2026, currently operate just one AQMA in the district; the Horsham AQMA No.1, located in Storrington, approximately 15km south-west of the site.
- 2.9 As a result of the declaration of the Horsham AQMA No.1, HDC routinely produce and update AQAPs focusing on improving air quality within the AQMA, with the latest AQAP⁵ produced in December 2020.

National Planning Policy Framework

- 2.10 The National Planning Policy Framework (NPPF)⁶, which was updated in December 2024, with a minor update in February 2025, sets out the Government's planning policy for England. At its heart is an intention to promote more sustainable development. A core principle in the NPPF that relates to air quality effects from development is that planning should "contribute to conserve and enhance the natural and local environment" as demonstrated at Paragraph 187:

"Planning policies and decisions should contribute to and enhance the natural and local environment by:

- a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);*

2 The Air Quality (England) (Amendment) Regulations 2002 - Statutory Instrument 2002 No.3043.

3 The Environment (Miscellaneous Amendment) (EU Exit) Regulations 2020.

4 Defra (2025). *Environmental Improvement Plan 2025*.

5 Horsham District Council (2020). *Horsham District Council Storrington Air Quality Action Plan*.

6 Ministry of Housing, Communities & Local Government. (2025). *National Planning Policy Framework*.

- b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;*
- c) maintaining the character of the undeveloped costs, while improving public access to it where appropriate;*
- d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;*
- 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, taking into account relevant information such as river basin management plans; and*
- f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.”*

2.11 With regard to assessing cumulative effects, the NPPF goes on to state the following at Paragraph 198:

“Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development.”

2.12 With regard to a compliance with relevant limit values and national objectives for air pollutants, along with assessing cumulative effects the NPPF states the following at Paragraph 199:

“Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan.”

2.13 With regard to promoting sustainable transport, Paragraph 110 states:

“The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making”..”

2.14 The NPPF offers a broad framework but does not afford a detailed methodology for assessments. Specific guidance for air quality continues to be provided by organisations such as the Department for Environment, Food and Rural Affairs (Defra), Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM).

National Planning Practice Guidance

2.15 Reference ID 32 (Air Quality) of the National Planning Practice Guidance (PPG)⁷, which was updated in November 2019, provides guiding principles on how planning can take account of the impact of new development on air quality. The PPG summarises the importance of air quality in planning and the key legislation relating to it.

2.16 As well as describing the importance of International, National and Local Policies (detailed elsewhere in this report), it summarises the key sources of air quality information. It also explains when air quality is likely to be relevant to a planning decision, stating:

“Considerations that may be relevant to determining a planning application include whether the development would:

-  *Lead to changes (including any potential reductions) in vehicle-related emissions in the immediate vicinity of the proposed development or further afield. This could be through the provision of electric vehicle charging infrastructure; altering the level of traffic congestion; significantly changing traffic volumes, vehicle speeds or both; or significantly altering the traffic composition on local roads. Other matters to consider include whether the proposal involves the development of a bus station, coach or lorry park; could add to turnover in a large car park; or involve construction sites that would generate large Heavy Goods Vehicle flows over a period of a year or more;*

-  *Introduce new point sources of air pollution. This could include furnaces which require prior notification to local authorities; biomass boilers or biomass-*

⁷ Planning Practice Guidance (PPG) 32. (Updated November 2019). Air Quality. Available from: <http://planningguidance.planningportal.gov.uk/blog/guidance/air-quality/>.

fuelled Combined Heat and Power plant; centralised boilers or plant burning other fuels within or close to an air quality management area or introduce relevant combustion within a Smoke Control Area; or extraction systems (including chimneys) which require approval or permits under pollution control legislation;

-  *Expose people to harmful concentrations of air pollutants, including dust. This could be by building new homes, schools, workplaces or other development in places with poor air quality;*
-  *Give rise to potentially unacceptable impacts (such as dust) during construction for nearby sensitive locations;*
-  *Have a potential adverse effect on biodiversity, especially where it would affect sites designated for their biodiversity value.”*

2.17 Details are also provided as to what should be included within an air quality assessment. Key considerations include:

-  Baseline local air quality;
-  Whether the proposed development could significantly affect local air quality during construction/operation; and
-  Whether the development is likely to expose more people to poor air quality.

2.18 Examples of potential air quality mitigation measures are also provided in the PPG.

Local Planning Policy

Adopted Local Plan

2.19 The Horsham District Planning Framework⁸ forms HDC's current Local Plan. Adopted in 2015, the Horsham District Planning Framework sets out the strategy and framework for planning decisions in the district through to the year 2031.

2.20 The key local plan policy governing air quality is *Policy 24: Environmental Protection*, which states the following:

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

⁸ Horsham District Council (2015). *Horsham District Planning Framework*.

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

Emerging Local Plan

- 2.21 HDC are in the process of preparing their new local plan; the *Horsham District Local Plan 2023 - 2040*⁹, which is currently undergoing examination. Once adopted, the emerging local plan will be used to guide development within the district to meet social, economic and environmental needs through to the year 2040.
- 2.22 The key emerging local plan policy regarding air quality is *Strategic Policy 12*, which states the following:

"The Council recognises the effects air quality has on public health, natural habitats and biodiversity, including its contribution to climate change, and the importance of the management of air quality. Taking into account any relevant Planning Guidance Documents and / or policies within this Plan, proposals will be required to:

1. *Adhere to Air Quality and Emissions Mitigation Guidance for Sussex (2021), or any future updates, to identify if an Air Quality Impact Assessment and / or an Emissions Mitigation Statement is required;*
2. *Contribute to the implementation of local Air Quality Action Plans, and not conflict with the set objectives;*
3. *Minimise traffic generation and congestion through access to sustainable transport modes, maximising the provision for cycling and pedestrian facilities;*
4. *Encourage the use of cleaner transport fuels, including through the provision of electric car charging points.*
5. *Take into account habitats or biodiversity designations that are sensitive to air quality changes, including ancient woodland. Habitats identified as sensitive to such changes, including proposals within 7km of The Mens, will require a*

9 Horsham District Council (2024). *Horsham District Local Plan 2023 – 2040 (Regulation 19 Version)*.

relevant impact assessment and appropriate mitigation measures to be put in place.

6. *Mitigate the impact on the amenities of users of the site and surrounding land to an appropriate level, during both construction and operation where development creates or results in pollution including particulates, dust, smoke, pollutant gases or odour, as outlined in the Air Quality and Emissions Mitigation Guidance for Sussex (2021), or any future updates; and*
7. *Ensure that the cumulative impact of all relevant permitted and allocated developments, including associated traffic impacts, is appropriately assessed.*

Cowfold Neighbourhood Plan

2.23 *The Cowfold Neighbourhood Plan 2019 – 2031*¹⁰ has been prepared by Cowfold Parish Council (CPC) to support the Local Plan by influencing and guiding development in Cowfold Parish through to the year 2031.

2.24 Aim 1 of the Cowfold Neighbourhood Plan relates to air quality management, as follows:

“i CPC supports sustainable development proposals that do not have an adverse effect upon air quality and users within the parish.

li CPC supports development proposals that include measures to provide traffic calming and / or gating with the aim of reducing queueing traffic within the Air Quality Management Area.”

2.25 However, it is important to note that the Cowfold Air Quality Management Area was revoked by in 2026 as no exceedances of the UK AQs have been monitored at locations within the AQMA in recent years. This AQMA is, therefore, no longer operational.

10 Cowfold Parish Council (2025). *Cowfold Neighbourhood Plan 2019 – 2031*.

3. Assessment Methodology

Guidance

- 3.1 Defra's latest Local Air Quality Management Technical Guidance (LAQM.TG(22))¹¹ was followed in carrying out this assessment.
- 3.2 The IAQM's latest *Guidance on the Assessment of Dust from Demolition and Construction*¹² was also used to assess the risk of dust emissions during the construction phase of the proposed development. This guidance has also been referred to in conjunction with the Greater London Authority's (GLA) Supplementary Planning Guidance (SPG) on *The Control of Dust During Construction and Demolition*¹³ in recommending mitigation measures to minimise the risk of dust soiling impacts during the construction phase of the proposed development.
- 3.3 The latest EPUK & IAQM guidance on *Planning for Air Quality*¹⁴ was also referred to throughout the assessment, particularly in the screening of traffic related impacts on local air quality.
- 3.4 Defra's PM_{2.5} Targets: Interim Planning Guidance¹⁵ provides a framework for considering PM_{2.5} within the planning process, in line with Environment Act targets. The guidance emphasises the need to minimise emissions and population exposure as far as reasonably practicable through good design, construction practices, and operational controls, rather than relying solely on compliance with numerical limit values.
- 3.5 Finally, as the proposed development is situated within Sussex, the Sussex-Air Partnership's *Air quality and emissions mitigation guidance for Sussex (2021)*¹⁶ (AQEMGFS) has been followed in determining the need to undertake an Emissions Mitigation Assessment.

11 Defra. (2022). Part IV of the Environment Act 1995 as amended by the Environment Act 2021. Environment (Northern Ireland) Order 2002 Part III. Local Air Quality Management Technical Guidance LAQM.TG(22).

12 Institute of Air Quality Management. (2024). *Guidance on the assessment of dust from demolition and construction* (Version 2.2).

13 Greater London Authority. (2014). *The Control of Dust and Emissions During Construction and Demolition Supplementary Planning Guidance*.

14 Environmental Protection UK & Institute of Air Quality Management. (2017). *Land-Use Planning & Development Control: Planning for Air Quality*.

15 Defra (2024). *PM_{2.5} Targets: Interim Planning Guidance*. Available from: <https://uk-air.defra.gov.uk/pm25targets/planning> [Accessed April 2026].

16 Sussex-Air Partnership. (2021). *Air quality and emissions mitigation guidance for Sussex (2021)*.

Establishing Baseline Conditions

- 3.6 Baseline air quality conditions in the vicinity of the site are established through the compilation and review of appropriately sourced background concentration estimates and local monitoring data.
- 3.7 Defra provides estimated background concentrations of the UKAQS pollutants at the UK Air Information Resource (UK-AIR) website¹⁷. These estimates are produced using detailed modelling tools and are presented as concentrations at central 1km² National Grid square locations across the UK. At the time of writing, the most recent background maps were from November 2024 and based on air quality monitoring and meteorological data from 2021.
- 3.8 Being background concentrations, the UK-AIR data are intended to represent a homogenous mixture of all emissions sources within the general area of a particular grid square location. Concentrations of pollutants at various sensitive receptor locations can, therefore, be calculated by modelling the emissions from a nearby pollution source, such as a busy road, and then adding this to the appropriate UK-AIR background datum.
- 3.9 Local authority operated air quality monitoring networks are also considered an appropriate source of data for the purposes of describing baseline air quality. To this end, local pollutant monitoring data from HDC's latest available *2025 Air Quality Annual Status Report*¹⁸ (ASR), have been reviewed and discussed, where relevant. The locations of local air quality monitoring sites discussed within this report are displayed in Figure 2.

Construction Phase

- 3.10 The construction phase of the proposed development will involve a number of activities that could potentially produce polluting emissions to air. Predominantly, these will be emissions of dust. However, they could also include releases of odours and/or more harmful gases and particles.
- 3.11 The IAQM's latest guidance to assess the impacts of construction dust emissions on human and ecological receptors has been followed in carrying out this assessment. The guidance suggests that where a receptor is located within 250m of a site boundary (50 m for ecological receptors) and / or 50m of a route used by construction vehicles, up to 250m from the site entrance, a full construction dust risk assessment should be undertaken.

17 Defra. (2024). UK Air Information Resource Website (UK-AIR). Available from: www.uk-air.defra.gov.uk

18 Horsham District Council. (2025). *2025 Air Quality Annual Status Report (ASR)*.

- 3.12 High sensitivity receptors are considered particularly sensitive when located within 20m of a works area. Figure 3 shows receptors that could be sensitive to dust that are located within 20m, 50m, 100m and 250m distance zones from the site boundary.
- 3.13 The Multi Agency Geographic Information for the Countryside (MAGIC) website¹⁹, which incorporates Natural England's interactive maps, has been reviewed to identify whether any sensitive statutory ecological receptors are situated within 50m of the site boundary or within 50m of any routes used by construction vehicles on the public highway, up to 250m from the site entrance.

Construction Significance

- 3.14 The IAQM guidance suggests that Demolition, Earthworks, Construction and Trackout should all be assessed individually to determine the overall significance of the construction phase.
- 3.15 In the IAQM dust guidance, the first step in assessing the risk of impacts is to define the potential dust emission magnitude. This can be considered 'Negligible', 'Small', 'Medium' or 'Large' for each of the construction stages.
- 3.16 Whilst the IAQM provides examples of criteria that may be used to assess these magnitudes, the vast number of potential variables means that every site is different and therefore professional judgement must be applied by what the IAQM refer to as a "technically competent assessor". The construction phase assessment therefore relies on the experience of the appraiser.
- 3.17 As such, attempts to define precisely what constitutes a negligible, small, medium or large dust emission magnitude should be treated with caution. Factors such as the scale of the work, both in terms of size and duration, the construction materials and the plant to be used must be considered.
- 3.18 The second step is to define the sensitivity of the area around the construction site. As stated in the IAQM guidance:

"the sensitivity of the area takes account of a number of factors:

-  *the specific sensitivities of receptors in the area;*
-  *the proximity and number of those receptors;*
-  *in the case of PM₁₀, the local background concentration; and*
-  *site-specific factors, such as whether there are natural shelters, such as trees, to reduce the risk of wind-blown dust."*

¹⁹ Natural England and MAGIC partnership organisations. Multi Agency Geographic Information for the Countryside. Available from: <https://magic.defra.gov.uk/MagicMap.html> [Accessed April 2026].

- 3.19 Based on these factors, the area is categorised as being of 'Low', 'Medium' or 'High' sensitivity.
- 3.20 When dust emission magnitudes for each stage and the sensitivity of the area have been defined, the risk of dust impacts can be determined. The IAQM provides a risk of impacts matrix for each construction stage. The overall significance for the construction phase can then be judged from the stages assessed. Again, this is subject to professional judgement.
- 3.21 Combustion exhaust gases from diesel-powered plant and construction vehicles accessing the site will also be released. However, the volumes and time periods over which these releases will occur are unlikely to result in long-term, permanent impacts on local air quality and therefore this has been scoped out of the assessment.

Operational Phase

Pollutant Sources

- 3.22 Vehicle emissions will arise from the combustion of fossil fuels in vehicle engines and their subsequent release to atmosphere via tailpipe exhausts. The most significant pollutants released by cars and other motor vehicles are oxides of nitrogen (NO₂/NO_x) and particulate matter (PM₁₀ and PM_{2.5}). Releases of carbon monoxide (CO) and some volatile hydrocarbons (e.g. benzene and 1,3-butadiene) are of less significance and are not considered further in this report.
- 3.23 As it is elevated concentrations of NO₂ and PM₁₀ that have resulted in the declaration of most AQMAs across the UK, these are the pollutants of most concern and they have therefore been the focus of this air quality assessment. PM_{2.5}, which is another fraction of particulate matter, has also been considered.
- 3.24 The latest EPUK & IAQM planning guidance¹⁴ provides indicative thresholds for changes in traffic flows which would require a detailed (pollutant dispersion modelling) Air Quality Assessment, when outside of, or within, an AQMA.
- 3.25 Outside of an AQMA, these are a change in 24-hour Annual Average Daily Traffic (AADT) flows of more than 500 light-duty vehicles (LDVs) and / or 100 heavy-duty vehicles (HDVs) on any road(s). When within, or adjacent to, an AQMA, these are a change in 24-hour AADT flows of more than 100 LDVs and / or 25 HDVs. Changes in traffic flows below these thresholds can be reasonably considered to have an insignificant impact on air quality.
- 3.26 Full justification behind the screening assessment of traffic related impacts on local air quality has been provided in Section 6 of this Air Quality Assessment.

Emissions Mitigation Assessment

- 3.27 The Sussex-air Partnership's AQEMGFS¹⁶ advocates that an Emissions Mitigation Assessment should be undertaken for all 'major' classified development to demonstrate how air quality impacts from new development can be minimised.
- 3.28 The purpose of an Emissions Mitigation Assessment is to determine an appropriate level of mitigation required for a development. An Emissions Mitigation Assessment sets out a methodology to assess the impact of a development's associated transport emissions on air quality and provides an approach to mitigating emissions for developments, even those which have no significant impact on air quality.
- 3.29 As the proposed development is classified as *Major* with reference to the AQEMGFS (i.e. 10 or more residential dwellings), an Emissions Mitigation Assessment with an emissions cost calculation is required. The emissions cost calculation was undertaken following the AQEMGFS and Defra's latest Damage Cost guidance²⁰. The latest Defra air quality damage cost appraisal toolkit²¹ was also utilised within the assessment.

Emissions Cost Calculation

- 3.30 The emissions calculation utilised the latest Defra Emission Factor Toolkit (EFT) (version 14.0)²² to determine the total transport related emissions (NO_x and PM_{2.5}) that would be generated by the proposed development.
- 3.31 Defra provides 'damage costs'²⁰, which are set of impact values, defined per tonne of pollutant for use in this calculation. Damage costs estimate the societal costs associated with changes in pollutant emissions and are combined with the forecasted emissions changes to provide an approximate valuation of the cost (or benefit) to society caused by development traffic emissions.
- 3.32 Defra's Appraisal Toolkit²¹, which incorporates the latest damage cost values, was used in the calculation. The principal of the calculation is summarised in the equation below:

$$EFT\ output \times Damage\ costs \times 5\ years = 5\ year\ exposure\ cost\ value\ (in\ £)$$

- 3.33 As a number of the inputs are based on assumptions, the resulting figure should be treated with caution, but it can be used to give an idea of the scale of a development in terms of total generated transport emissions and therefore a gauge of what level of mitigation might be appropriate.

20 Defra. (2026). *Air quality appraisal: Damage Cost Guidance*. Available from: <https://www.gov.uk/government/publications/assess-air-quality-impacts/air-quality-appraisal-damage-cost-guidance> [Accessed April 2026].

21 Defra. (2023). *Air quality damage cost appraisal toolkit*. Available from: <https://www.gov.uk/government/publications/assess-air-quality-impacts> [Accessed April 2026].

22 Defra. (2025). *Emissions Factor Toolkit (version 14.0)*. Available from: <https://laqm.defra.gov.uk/air-quality/air-quality-assessment/emissions-factors-toolkit/> [Accessed May 2026].

- 3.34 It is usual for costs established in this way to be apportioned to low emission measures associated with a proposed development. In doing this it should be possible for damage costs to be offset.

Consultation

- 3.35 HDC's Environmental Health and Licencing Department were contacted on 29th April 2026 to discuss and agree the scope of this Air Quality Assessment.
- 3.36 Based on the proposed developments scale, location and potential for traffic generation, the following scope was proposed:
- A screening assessment in relation to air quality effects associated with scheme-generated traffic, following EPUK and IAQM guidance;
 - Undertaking a qualitative assessment of the site's suitability for the proposed (residential) end use, referencing relevant local air quality monitoring data; and
 - Undertaking an emissions mitigation assessment in accordance with the AQEMGFS and Defra's damage cost guidance.
- 3.37 A response was received from HDC's Scientific Officer on 29th April 2026 agreeing to the proposed assessment scope, with the following statement:

"The scope you have provided appears to sufficiently address the requirements set out in the Sussex Air Quality Guidance."

4. Baseline Air Quality

- 4.1 This chapter is intended to establish prevailing air quality conditions in the vicinity of the site.

UK-AIR Background Pollution

- 4.2 UK-AIR predicted annual mean background concentrations of NO₂, PM₁₀ and PM_{2.5} for 2021 to 2030 are presented in Table 4.1. These data were taken from the central grid square location within which the application site is located (i.e. UK-AIR Grid Reference: 521500,122500).

Table 4.1: Predicted Background Concentrations of Pollutants at the Site

Pollutant	Predicted Annual Mean Background Concentration (µg.m ⁻³)									
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
NO ₂	9.5	9.2	8.9	8.7	8.4	8.1	7.9	7.6	7.3	7.1
PM ₁₀	11.7	11.6	11.5	11.4	11.2	11.2	11.1	11.0	10.9	10.8
PM _{2.5}	7.4	7.3	7.2	7.1	7.0	6.9	6.9	6.8	6.7	6.7

- 4.3 The data in Table 4.1 show that annual mean background concentrations of NO₂, PM₁₀ and PM_{2.5}, at, and in the vicinity of, the application site between 2021 and 2030, are predicted to be well below their respective AQs.
- 4.4 The data show that in the current assessment / reporting year of 2026, the proposed development's projected opening year, background NO₂, PM₁₀ and PM_{2.5} concentrations are predicted to be well below their annual mean AQs by approximately 80%, 72% and 65%, respectively.
- 4.5 By the proposed development's projected opening year of 2028, background concentrations are projected to have reduced further, with NO₂, PM₁₀ and PM_{2.5} concentrations predicted to be below their annual mean AQs by approximately 81%, 73% and 66%, respectively.
- 4.6 Therefore, annual mean background pollutant concentrations are likely to be well below their respective AQs at, and in the vicinity of, the application site.
- 4.7 The UK-AIR projections also indicate that background annual mean concentrations of PM_{2.5} at, and in the vicinity of, the application site are anticipated to be well below the future limit value of 10 µg.m⁻³, which is to be achieved by December 2040.
- 4.8 Concentrations of all pollutants are predicted to gradually decline each year. These reductions are principally due to the forecast effect of the roll out of cleaner vehicles, but also due to local, UK national and international plans to reduce emissions across all sectors.

Local Sources of Monitoring Data

- 4.9 Local air quality monitoring is also considered an appropriate source of data for the purposes of describing baseline air quality.
- 4.10 At the time of writing, the most recent ASR¹⁸ published by HDC included air quality monitoring data from the year 2024. Air quality monitoring data from this ASR have been reviewed and are discussed below, to establish baseline air quality conditions.

Automatic Monitoring

- 4.11 Automatic monitoring is the continuous, real-time measurement of air pollutants using high precision equipment, typically at fixed monitoring stations.
- 4.12 HDC's latest available ASR at the time of writing provides air quality monitoring results from three automatic air quality monitoring stations in the district:
- 🌿 HO2 Horsham Park Way – located at the junction of Park Street and Park Way in Horsham, approximately 9.3 km north-west of the application site;
 - 🌿 HO4 Storrington – forming part of Defra's Automatic Urban and Rural Network (AURN), located in Storrington, approximately 15km south-west of the application site; and
 - 🌿 HO5 Cowfold – located in proximity to the junction of Bolney Road with The Street in Cowfold, approximately 0.5km north of the application site.
- 4.13 The latest available NO₂ monitoring data from the HO5 Cowfold automatic monitoring station are provided in Table 4.2 and discussed below. It is acknowledged that this monitoring station does not currently monitor PM₁₀ and, whilst PM_{2.5} is monitored, data capture in 2024 was below 25% and therefore PM_{2.5} monitoring results were not presented within HDC's latest ASR.
- 4.14 Monitoring results from HDC automatic monitoring stations HO2 and HO4 have not been presented, as these are located far from the application site and are therefore not considered representative of baseline air quality conditions in the Cowfold area.

Table 4.2: Monitoring Data from HO5 Cowfold Automatic Monitoring Station

Monitor	Site Type	Distance to Site (m)	Pollutant	Annual Mean Concentration (µg.m ⁻³)				
				2020	2021	2022	2023	2024
HO5 Cowfold	R	455	NO ₂	23.6	20.3	21.0	24.6	16.2

Note: "R" = Roadside.

- 4.15 Air quality monitoring data from the HO5 Cowfold monitoring station indicate that, despite being positioned in close proximity to the junction of the A272 Bolney Road with The Street and the A281 Henfield Road, concentrations of NO₂ monitored at this measurement site have been well below the annual mean AQS (40 µg.m⁻³) in recent years.
- 4.16 In 2023, annual mean NO₂ concentrations recorded at the monitoring station reached a five-year peak, with a concentration of 24.6 µg.m⁻³. However, despite being the highest concentration measured at this location across a five-year period, this concentration remained below the annual mean AQS by approximately 39%.
- 4.17 Subsequently, in 2024, the latest year for which data were available at the time of writing, concentrations of NO₂ monitored at this location reduced markedly, with a monitored concentration of 16.2 µg.m⁻³, which is below the annual mean AQS by approximately 60%.
- 4.18 The data presented in Table 4.2 generally indicate improving air quality across the 2020 to 2024 period, with concentrations in 2024 considerably below those monitored in 2020.

Non-Automatic Monitoring

- 4.19 Local authorities also operate non-automatic air quality monitoring networks, using passively sampled diffusion tubes, measuring NO₂ concentrations in ambient air over time (usually on a monthly sampling basis to establish annual mean concentrations).
- 4.20 HDC operates an extensive NO₂ diffusion tube monitoring network comprising of 49 measurement sites deployed in strategic locations across the district.
- 4.21 The most recent annual mean NO₂ data for HDC diffusion tube monitoring locations within the Cowfold area are included in Table 4.3, below.

Table 4.3: Monitoring data from Local NO₂ Diffusion Tubes

Monitor	Type	Distance to Site (m)	Annual Mean NO ₂ Concentration (µg.m ⁻³)				
			2020	2021	2022	2023	2024
Cowfold 6N	R	145	21.7	20.5	20.3	19.6	16.5
Cowfold 9N	R	395	19.3	18.3	18.7	-	-
Cowfold 7N	R	410	30.2	31.2	31.7	28.3	24.9
Cowfold 9N.1	R	420	-	-	-	18.2	-
Cowfold AU A,B,C*	R	460	19.2	19.9	20.0	17.5	15.8
Cowfold 1,2	R	515	26.8	26.5	26.4	24.1	21.5
Cowfold 8N	UB	545	10.9	10.5	10.3	8.9	8.1
Cowfold 3	R	580	24.6	26.5	25.5	24.1	21.9

Monitor	Type	Distance to Site (m)	Annual Mean NO ₂ Concentration (µg.m ⁻³)				
			2020	2021	2022	2023	2024
Cowfold 4	R	600	22.5	22.2	20.3	19.5	17.5
Cowfold 5N	R	635	20.4	21.3	20.3	18.7	-

Note: "R" = Roadside; "UB" = Urban Background. "*" denotes diffusion tubes co-located with automatic monitoring station CO5 – Cowfold.

- 4.22 The local NO₂ monitoring data presented in Table 4.3 show that annual mean concentrations of NO₂ have been below the 40 µg.m⁻³ AQS at all nearby measurement sites between 2020 and 2024.
- 4.23 The highest annual mean NO₂ concentration measured at the Cowfold based diffusion tubes between 2020 and 2024 was 31.7 µg.m⁻³, recorded in 2022. This concentration was measured at monitoring location Cowfold 7N, which is located within approximately 1m of the kerb of the A272 Bolney Road, south of the Cowfold Recreation Ground. Despite being the highest concentration observed locally across a five-year period, this remains below the annual mean AQS by 20.8%.
- 4.24 Since 2022, considerable reductions in NO₂ concentrations have been observed at the Cowfold 7N monitoring location, with concentrations of 28.3 µg.m⁻³ (i.e. below the annual mean AQS by 29.3%) and 24.9 µg.m⁻³ (i.e. below the annual mean AQS by 37.8%) monitored in 2023 and 2024, respectively, indicating improving air quality in this location.
- 4.25 The closest monitoring location to the site is Cowfold 6N, located within 1.4m of the A281 Henfield Road, approximately 145m north of the application site. Despite being located in close proximity to Henfield Road, from which the site will be accessed, concentrations of NO₂ monitored at this location have been consistently well below the annual mean AQS between 2020 and 2024. In 2024, an annual mean NO₂ concentration of 16.5 µg.m⁻³ was monitored at this location, which is below the AQS by 58.8%.
- 4.26 Monitoring results from Cowfold 6N therefore indicate that even when in close proximity to the A281 Henfield Road, concentrations of NO₂ remain well below the annual mean AQS.
- 4.27 HDC also undertake non-automatic monitoring for NO₂ at an urban background location within the Cowfold area. Cowfold 8N is located in an urban background setting in a residential area off Fairfield Cottages, well distanced from local major roads. Annual mean concentrations of NO₂ monitored at this location have been consistently well below the annual mean AQS between 2020 and 2024, by between 72.8% and 79.8%. Monitoring results from this location therefore indicate that background concentrations in the area are well below the relevant AQSs.
- 4.28 The data in Table 4.3 show that across the monitoring locations, annual mean NO₂ concentrations generally follow a gradual downward trend over time, with most sites peaking around 2020–2022 and then declining through to 2023–2024.

5. Construction Phase Impacts

- 5.1 The construction phase of the proposed development will involve a number of activities that could produce polluting emissions to air. Predominantly, these will be emissions of dust.
- 5.2 The estimates for the dust emission magnitude for demolition, earthworks, construction and trackout (discussed below) are based on the professional experience of Phlorum's consultants, information provided by the client and Google Earth imagery.

Dust Emission Magnitude

Demolition

- 5.3 There are no existing structures on the site which will require demolition in order to make way for the proposed development. Therefore, potential dust emissions from demolition activities are not considered further within this assessment.

Earthworks

- 5.4 The total site area is approximately 25,000m², which is classified as a *Medium* dust emission magnitude in accordance with IAQM guidance.
- 5.5 It is anticipated that fewer than 5 heavy earth moving vehicles would operate on-site at any one time during the proposed development's construction, which falls within the IAQM's *Small* dust emission magnitude category.
- 5.6 As the number of heavy earth moving vehicles is considered a more important factor in producing dust emissions than site area alone, the overall dust emission magnitude for the earthworks activities is considered to be *Small*.

Construction

- 5.7 During construction, activities that have the potential to cause emissions of dust may include concrete batching and sandblasting. Localised use of cement powder and general handling of construction materials also have the potential to generate dust emissions, as does the effect of wind-blow from stockpiles of friable materials.
- 5.8 Upon completion, it is estimated that the proposed development would comprise of new buildings with a total volume between 12,000m³ and 75,000m³, thereby falling within the IAQM's *Medium* dust emission magnitude category.
- 5.9 Therefore, the overall dust emission magnitude for the construction phase is considered to be *Medium* with reference to the IAQM guidance.

Trackout

- 5.10 Construction traffic, when travelling over soiled road surfaces, has the potential to generate dust emissions and to also add soil to the local road network. During dry weather, soiled roads can lead to dust being emitted due to physical and turbulent effects of vehicles. It is not yet known whether unpaved road surfaces would be utilised by vehicles accessing the site during construction.
- 5.11 However, it is anticipated that fewer than 20 HDVs would access the site per day during construction, falling within the IAQM's *Small* dust emission magnitude category.
- 5.12 Therefore, the dust emission magnitude for the trackout phase is considered to be *Small* with reference to the IAQM guidance.

Emission Magnitude Summary

- 5.13 A summary of the dust emission magnitude as a result of the activities of Earthworks, Construction and Trackout are listed in Table 5.1 below.

Table 5.1: Dust Emission Magnitude for the Construction Activities

Activity	Dust Emission Magnitude
Earthworks	Small
Construction	Medium
Trackout	Small

Sensitivity of the Area

- 5.14 Having established the dust emission magnitudes for each phase above, the sensitivity of the area around the site must be considered to establish the significance of effects. The effect of dust emissions depends on the sensitivity of each receptor.
- 5.15 High sensitivity human receptors include residential dwellings, schools, and hospitals, but can also include locations such as car showrooms when considering the impacts of dust soiling.
- 5.16 Medium sensitivity receptors include locations where individuals would expect to enjoy a reasonable level of amenity, but not the same level as would be expected in their homes; examples include workplaces and parks.

- 5.17 The impacts of dust emissions from the sources discussed above have the potential to cause an annoyance to human receptors living in the local area. Within distances of 20m of the Site boundary there is a high risk of dust impacts, regardless of the prevailing wind direction. Up to 100m from the construction Site, there may still be a high risk, particularly if the receptor is downwind of the dust source.
- 5.18 With the exponential decline in dust levels with distance from dust generating activities, it is considered that for receptors more than 250m from the site boundary, the risk is *Negligible*. Furthermore, the risks at over 100m only have the potential to be significant in certain weather conditions, e.g. when downwind of the source during dry periods.
- 5.19 The approximate number of high sensitivity human receptors in the vicinity of the Site is detailed in Table 5.2 below and shown in Figure 3.

Table 5.2: Approximate Number of Receptors Within 250m of the Site

Distance to Site (m)	Number of High Sensitivity Receptors	Receptor Details
<20	8	Residences off Henfield Road and South Leas
<50	12	Residences off Henfield Road and Eastlands Lane
<100	34	Residences off Henfield Road, Eastlands Lane, Oakapple Close and Summer Meadow
<250	>100	Residences in the surrounding area

- 5.20 As presented in Table 5.2 and shown in Figure 3, there are fewer than 10 high sensitivity receptors within 20m of the site and more than 10, but fewer than 100, high sensitivity receptors within 50m of the site. Therefore, the sensitivity of the area to dust soiling impacts can be defined as *Medium*, in line with IAQM guidance.
- 5.21 As presented in Table 4.1, UK-AIR projections indicate that concentrations of PM₁₀ in the vicinity of the application site and surrounding area are expected to be below 24 µg.m⁻³, which represents the IAQM threshold for an area to be considered *Low Sensitivity* in terms of PM₁₀ related human health impacts, providing that there are fewer than 100 *High Sensitivity* receptors within 20m of the site. As there are fewer than 100 *High Sensitivity* human receptors within 20m of the site, the sensitivity of the area to human health impacts is defined as *Low*.
- 5.22 Review of the MAGIC website¹⁹, which incorporates Natural England's interactive maps, has identified no statutory ecological receptors within 50m of the site, or within 50m of roads to be used by construction traffic, up to 250m from the site entrance.

- 5.23 The closest statutory ecological site is the St Leonard's Forest Site of Special Scientific Interest (SSSI) located over 7km north of the application site. Therefore, based on distance alone, the construction of the proposed development is expected to have a *Negligible* impact upon ecological receptors.

Risk of Impacts

- 5.24 Having established the potential dust emission magnitudes and sensitivity of the area, the risk of impacts can be determined in accordance with the IAQM guidance. These are summarised in Table 5.3.

Table 5.3: Summary of Dust Impact Risks by Construction Stage

Stage	Dust Impact Risk		
	Nuisance Dust	PM ₁₀ Health Effects	Ecological Impacts
Earthworks	Low Risk	Negligible	Negligible
Construction	Medium Risk	Low Risk	Negligible
Trackout	Low Risk	Negligible	Negligible

- 5.25 Overall, the proposed development is considered to be *Medium Risk* for nuisance dust soiling effects, *Low Risk* for PM₁₀ health effects and *Negligible* for ecological impacts, in the absence of mitigation.

Site Specific Mitigation

- 5.26 The GLA guidance¹³ suggests a number of mitigation measures that should be adopted in order to minimise impacts from emissions of dust and fine particles. Appropriate measures that could be adopted during construction of the proposed development include:

-  Ideally cutting, grinding and sawing should not be conducted on-site and pre-fabricated materials and modules should be brought in where possible;
-  where such work must take place, water suppression should be used to reduce the amount of dust generated;
-  skips, chutes and conveyors should be completely covered and, if necessary, enclosed to ensure that dust does not escape;
-  no burning of any materials should be permitted on site;
-  any excess material should be reused or recycled on-site in accordance with appropriate legislation;
-  developers should produce a waste or recycling plan;

- following earthworks, exposed areas and soil stockpiles should be re-vegetated to stabilise surfaces, or otherwise covered with hessian or mulches;
 - stockpiles should be stored in enclosed or bunded containers or silos and kept damp where necessary;
 - hard surfaces should be used for haul routes where possible;
 - haul routes should be swept/washed regularly;
 - vehicle wheels should be washed on leaving the site;
 - all vehicles carrying dusty materials should be securely covered; and
 - delivery areas, stockpiles and particularly dusty items of construction plant should be kept as far away from neighbouring properties as possible.
- 5.27 In addition, the IAQM provides recommended mitigation measures for low, medium and high Dust Impact Risks. The highly recommended mitigation measures for *Medium Risk* sites are included in Appendix A of this report.
- 5.28 Where dust generation cannot be avoided in areas close to neighbouring properties, additional mitigation measures should be put in place, such as: windbreaks, sprinklers, and / or time / weather condition limits on the operation of some items of plant or the carrying out of activities that are likely to generate a particularly significant amount of dust.

Residual Effects

- 5.29 After the implementation of the mitigation measures listed above and in Appendix A, the significance of each phase of the construction programme will be reduced and the residual significance of impact for the construction phase is expected to be *Negligible*.

6. Operational Phase

Impacts on Local Air Quality

- 6.1 The latest EPUK & IAQM planning guidance¹⁴ provides indicative thresholds for changes in traffic flows which would require a detailed (dispersion modelling) Air Quality Assessment when within, and not within, an AQMA.
- 6.2 Within, or adjacent to, an AQMA, these are a change in 24-hour AADT flows of more than 100 LDVs and / or 25 HDVs. Elsewhere, these are changes in 24-hour AADT flows of more than 500 LDVs and / or 100 HDVs. Changes in AADT traffic flows below these thresholds can be reasonably considered to have an insignificant impact on local air quality.
- 6.3 The application site is not located within, or adjacent to, an AQMA and thus the 500 LDV and / or 100 HDV threshold applies for roads in the vicinity of the site.
- 6.4 Information provided by the applicant's transport consultants, Neo Transport Planning, indicates that the proposed development would be expected to increase 24-hour AADT flows on local roads by 180 vehicles, including two HDVs. Furthermore, it is anticipated that 96 vehicles (95 LDVs and 1 HDV) are expected to travel north on the A281 Henfield Road from the site access, with the remaining 84 vehicles (83 LDVs and 1 HDV) expected to travel south on Henfield Road from the site access.
- 6.5 Therefore, the proposed development is not expected to increase 24-hour AADT flows by more than 500 LDVs and /or 100 HDVs on any local roads and consequently, it can be reasonably assumed that emissions from traffic generated by the proposed development would have an insignificant impact on local air quality.

Site Suitability

- 6.6 Defra's LAQM.TG(22) guidance¹¹, and specifically Tables 7-7 and 7-8, set out the classification of monitoring locations and where these are in relation to sources of air pollution. The guidance states that an urban background location is as follows:

"An urban location distanced from sources and therefore broadly representative of city-wide background conditions, e.g. urban residential areas."

- 6.7 The AEA *Diffusion Tube for Ambient NO₂ Monitoring: Practical Guidance*²³ provides further detailed definitions which help to classify urban background sites. Specifically, Section 3.2.2 states that, where a site meets the following criteria, it can be reasonably defined as being set in an urban background location, away from adverse impacts associated with emissions from road sources:
- ➊ >50m from any major source of NO₂ (e.g. multi-storey car parks);
 - ➋ >30m from any 'very busy' road (>30,000 vehicles per day);
 - ➌ >20m from any 'busy' road (10,000 – 30,000 vehicles per day);
 - ➍ >10m from any 'main' road; and
 - ➎ >5m from locations where vehicles may stop with their engines idling.
- 6.8 The primary sources of air pollution in the vicinity of the site are vehicles travelling on the local road network, particularly the A281 Henfield Road.
- 6.9 Department for Transport (DfT) traffic counts for the A281 Henfield Road²⁴ indicate that in 2023, this road hosted 24-hour AADT flows of 5,249 vehicles. Therefore, Henfield Road is not classified as a *very busy* or *busy* road in accordance with the AEA guidance, due to its lower traffic flows, but can be classified as a *main* road.
- 6.10 Therefore, sensitive uses at the application site can be considered as being set in an urban background location when distanced 10m or more from the A281 Henfield Road.
- 6.11 The proposed development has been designed to minimise exposure to air pollution from the A281 Henfield Road by distancing the proposed sensitive uses (i.e. residential dwellings) from this emission source. To this end, all proposed residential dwellings are distanced 50m or more from the A281 Henfield Road. Therefore, in accordance with AEA guidance, these sensitive uses can be considered as being set in urban background locations.
- 6.12 Therefore, following LAQM(TG.22) guidance, it is expected that pollutant concentrations across the site are likely to be similar to those identified at urban background sites within the local area.
- 6.13 The UK-AIR projections reviewed in Table 4.1 indicate that background concentrations of NO₂, PM₁₀ and PM_{2.5} in the vicinity of the site are expected to be well below their annual mean AQSs (and 2040-based limit value of 10 µg.m⁻³ for PM_{2.5}) and reduce further in future years. Furthermore, local monitoring results from HDC's Cowfold 8N urban background monitoring location indicate that background concentrations of NO₂ monitored in Cowfold have also been well below the annual mean AQS in recent years.

⁽²³⁾ AEA Energy and Environment. (2008). *Diffusion Tubes for Ambient NO₂ Monitoring: Practical Guide for Laboratories and Users*.
⁽²⁴⁾ Department for Transport (2026). *Road Traffic Statistics: Count Point 26874*. Available from:
<https://roadtraffic.dft.gov.uk/count-points/26874> [Accessed April 2026].

- 6.14 Considering the above, the site is expected to be suitable, in air quality terms, for the proposed highly sensitive (residential) use and no further assessment of site suitability is considered necessary.

7. Emissions Mitigation Assessment

Emissions Cost Calculation

7.1 Following the latest update to Defra's emissions cost calculation guidance²⁰, the emissions cost calculation below has been carried out to estimate the value of the impact of nitrogen oxides (NO_x) and PM_{2.5} emitted as a result of the traffic generated by the proposed development. Updates to the damage cost calculation have put greater emphasis on PM_{2.5} as it is deemed to have more significant health implications.

7.2 To evaluate the scale of a proposed development's total emissions, Defra and the AQEMGFS¹⁶ recommend an emissions cost calculation using the following formula:

$$\text{Road Transport Emission Increase (Cost, £)} =$$

$$\text{Estimated trip rate for 5 years} \times \text{Emission Rate/10km/vehicle type} \times \text{Damage Costs}$$

7.3 The latest Defra EFT (v14.0)²² was used to determine the total transport related emissions that would be generated by the proposed development. The inputs used in the calculation are shown in Table 7.1.

Table 7.1: Emissions Cost Calculation Inputs

Input	Value	Unit	Source/Guidance
Trip Length	10	km	AQEMGFS
Development Traffic	178 LDVs & 2 HDVs	AADT	Transport Consultant
EFT Road Type	Urban (not London)	-	Defra EFT v14.0
EFT Year	2028 - 2032	-	Opening Year + 4 Years
Average Speed	50	km.hr ⁻¹	AQEMGFS
Appraisal Period	5	years	AQEMGFS

7.4 The total emission 'damage' cost was calculated using Defra's latest air quality appraisal toolkit²¹ and is presented in Tables 7.2 and 7.3.

7.5 The calculation accounts for an 'uplift factor' of 2% cumulatively per annum and a 'discount rate', in line with the latest 2026 guidance²⁰. Central estimate damage costs for 'Road Transport Urban Small' were based on Defra 2026 prices.

Table 7.2: Emission Cost Calculation for NO_x

	2028	2029	2030	2031	2032
NO _x increase (tonnes)	0.0836	0.0712	0.0597	0.0498	0.0414
Central Damage cost (NO _x)	£10,179	£10,179	£10,179	£10,179	£10,179
Adjusted Damage cost (NO _x)	£851	£714	£590	£485	£397
Total	£3,036				

Note: Any discrepancies due to rounding.

Table 7.3: Emission Cost Calculation for PM_{2.5}

	2028	2029	2030	2031	2032
PM _{2.5} increase (tonnes)	0.0119	0.0117	0.0114	0.0112	0.0110
Central Damage cost (PM _{2.5})	£86,418	£86,418	£86,418	£86,418	£86,418
Adjusted Damage cost (PM _{2.5})	£1,031	£994	£958	£926	£897
Total	£4,805				

Note: Any discrepancies due to rounding.

7.6 The total damage costs are summarised as follows:

NO_x emission 'damage' (cost, £) = £3,036 +

PM_{2.5} emission 'damage' (cost, £) = £4,805

TOTAL (cost, £) = £7,841

Mitigation

7.7 The resulting value of the 'emissions cost', as calculated above, is indicative of the value of an appropriate package of mitigation to offset any potential impacts from the proposed development. The mitigation package should at least equate to this 'emissions cost'.

7.8 For all residential developments considered as *Major* under the AQEMGFS²⁰, the following mitigation measures should be designed into the scheme, as a minimum:

-  all gas fired boilers are expected to meet a minimum standard of <40mgNO_x/kWh, with consideration given to renewable energy sources: and
-  meet any applicable electric vehicle charging point (EVCP) standards set out in West Sussex County Council's (WSCC) *Guidance on Parking at New Developments*²⁵

²⁵ West Sussex County Council. (2020). *Guidance on Parking at New Developments* (September 2020).

- 7.9 No gas fired boilers or other combustion-based energy, heating or hot water related emission sources have been proposed within the scheme. Instead, the proposed development is to utilise a zero-emission energy, heating and hot water strategy, comprising of Air Source Heat Pumps (ASHPs).
- 7.10 It should be noted that outline planning permission is being sought for the proposed development, and due to designs for the scheme being at an early stage, limited information was available at the time of writing regarding the proposed development's mitigation package. Further details of the proposed development's mitigation package can be made available at reserved matters stage.

8. Discussion

Construction Phase Impacts

- 8.1 The construction phase of the proposed development could potentially give rise to emissions which could cause dust soiling effects on adjacent uses. Following the latest IAQM guidance¹², the construction phase of the proposed development can be considered to be *Medium Risk* with regard to nuisance dust soiling effects, *Low Risk* with regard to PM₁₀ human health effects and to be *Negligible* for impacts, in the absence of mitigation.
- 8.2 Following the implementation of the mitigation measures provided in Appendix A and listed in Section 5.26, emissions from the construction programme will be reduced and the residual significance of impact for the construction phase is expected to be *Negligible*, thus complying with the requirements of the NPPF.

Operational Phase Impacts

- 8.3 The need to undertake a detailed assessment of the suitability of the site, in air quality terms, for the introduction of new, sensitive receptors has been screened out using Defra and AEA Guidance, along with a review of UK-AIR projected background concentrations and local air quality monitoring data. This was primarily due to the proposed residential dwellings being well distanced from local pollution sources (i.e. roads) and background pollutant concentrations being expected to be well below relevant long-term AQSSs.
- 8.4 Therefore, the site is considered suitable, in air quality terms, for the introduction of new, sensitive (residential) receptors, and no further assessment of site suitability is considered necessary.
- 8.5 The proposed development is not expected to generate volumes of traffic in exceedance of the indicative traffic change thresholds prescribed by the joint EPUK & IAQM planning guidance¹⁴. Therefore, the need to undertake a detailed assessment of the impact of development generated traffic emissions on local air quality has been screened out.
- 8.6 Consequently, it can be reasonably assumed that the operation of the proposed development would have an insignificant impact upon local air quality.

Emissions Mitigation Assessment

- 8.7 The Sussex-Air Partnership's AQEMGFS¹⁶ requires an Emissions Mitigation Assessment for all new *major* classified development in order to help minimise potential incremental impacts on air quality.

- 8.8 Following the latest damage cost guidance and guidance from the AQEMGFS, an 'emissions cost' of £7,841 was calculated due to emissions of NO_x and PM_{2.5} expected to be generated by traffic associated with the proposed development in its first five years of operation.
- 8.9 In order to offset the calculated 'emissions cost', the proposed development will incorporate a mitigation package, formed of measures which help to minimise air quality impacts.
- 8.10 Details of the proposed development's mitigation package are yet to be finalised, owing to the proposed development being in the early stages of design. It is expected that full details regarding the proposed development's mitigation package would be made available at reserved matters stage.
- 8.11 Providing that the proposed mitigation package fully offsets the calculated 'emissions cost', it is expected that this package would minimise any incremental impacts associated with the proposed development's operation.

9. Conclusions

- 9.1 Landacre Developments Limited commissioned Phlorum Limited, to undertake an Air Quality Assessment to accompany an outline planning application for the proposed development of approximately 40 residential dwellings on land to the east of the A281 Henfield Road, Cowfold.
- 9.2 UK Air Information Resource background concentrations and local air quality monitoring results from the wider area indicate that air quality in the local area is generally good, with pollutant concentrations in the vicinity of the site expected be below relevant UK Air Quality Standard concentrations.
- 9.3 The construction phase of the development could give rise to emissions which could cause airborne particulate matter and dust soiling effects on adjacent uses. However, by adopting appropriate mitigation measures to reduce emissions and their potential impact, there should be no significant residual effects, thus complying with the requirements of the National Planning Policy Framework.
- 9.4 The operation of the proposed development is not expected to introduce new sensitive receptors into an area of existing poor air quality, nor is it anticipated to significantly impact upon local air quality.
- 9.5 To mitigate for future emissions and offset the proposed development's calculated 'emissions cost', the proposed development will include a suite of mitigation measures, including a zero-emission heating and hot water strategy. However much of this mitigation package is yet to be finalised, owing to plans for the proposed development being at an early stage. It is expected that full details could be made available at reserved matters stage.
- 9.6 Providing a suitable mitigation package is provided, it is expected that the proposed development would comply with all relevant local and national air quality policy. Air quality should not, therefore, pose any significant obstacles to the planning process.

Figures and Appendices

Figure 1: Site Location



Figure 1: Site Location and Layout

Contains Ordnance Survey Data © Crown copyright and database right 2010-2026

Job No: 14647
 Author: J. Mills
 Date: 30/04/2026
www.Phlorum.com



Figure 2: Local Air Quality Monitoring Sites

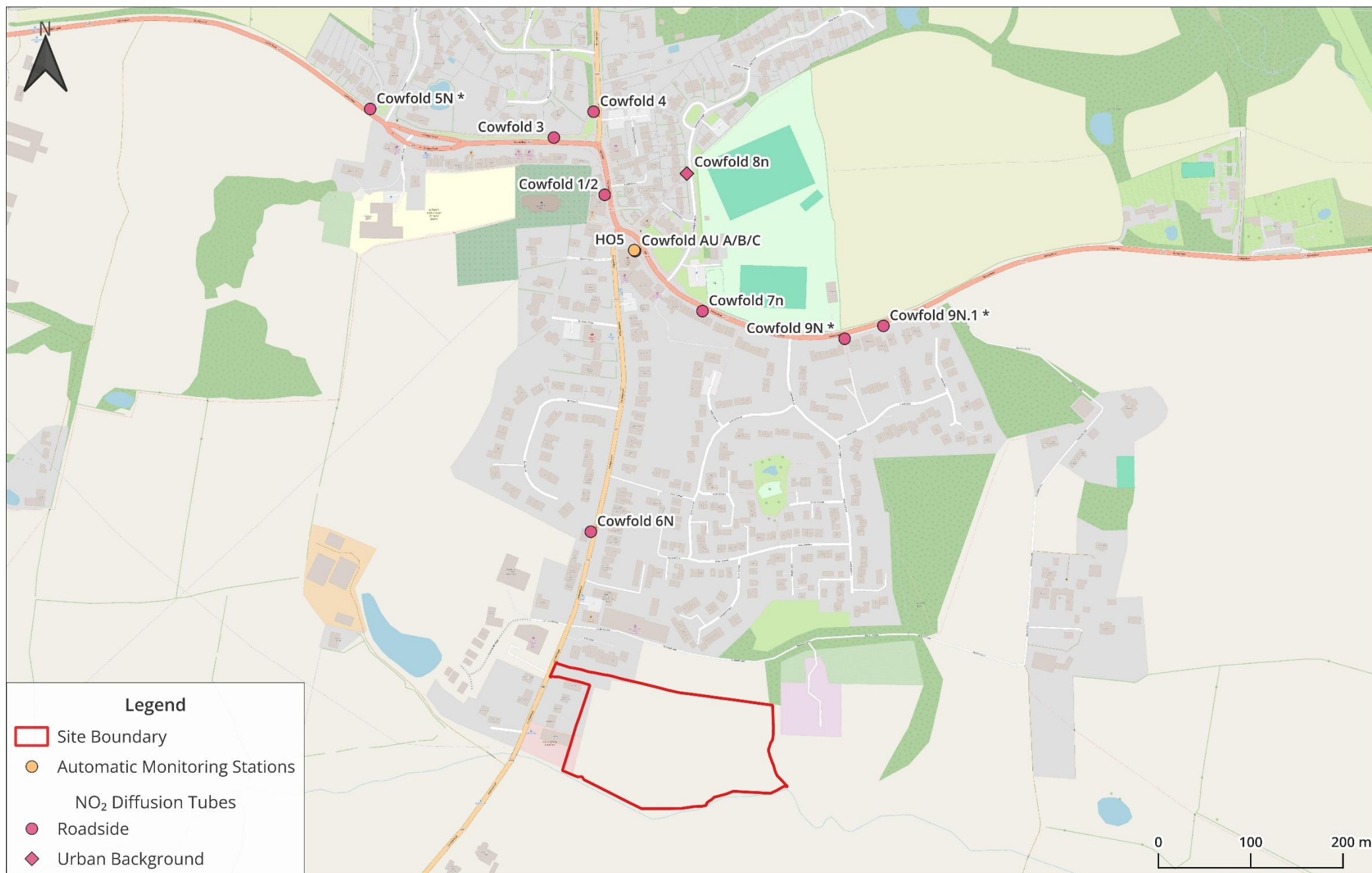


Figure 2: Local Air Quality Monitoring Sites

Contains Ordnance Survey Data © Crown copyright and database right 2010-2026

Job No: 14647
 Author: J. Mills
 Date: 30/04/2026
www.Phlorum.com



Figure 3: Construction Phase

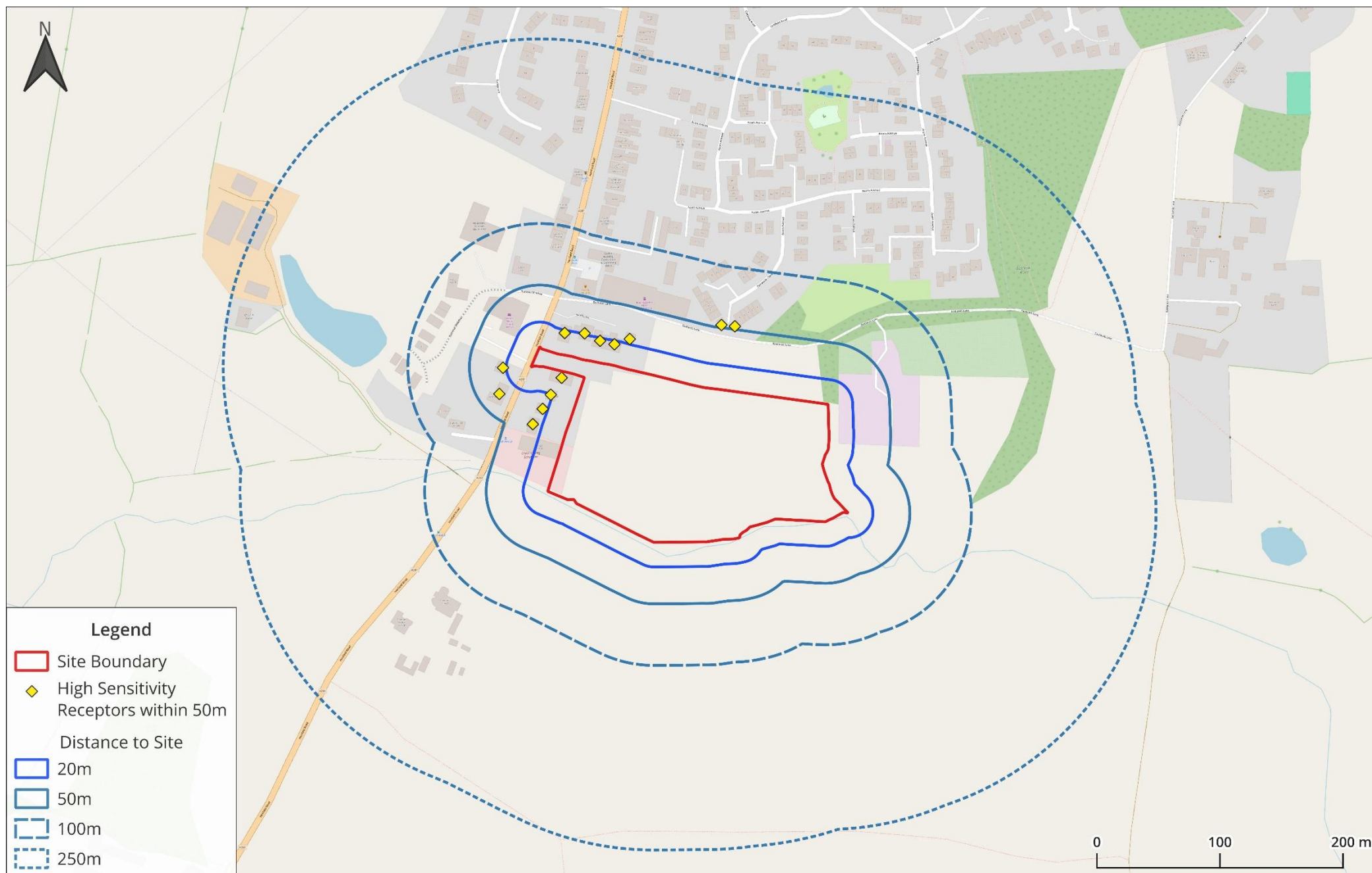


Figure 3: Construction Phase

Contains Ordnance Survey Data © Crown copyright and database right 2010-2026

Job No: 14647
Author: J. Mills
Date: 30/04/2026
www.Phlorum.com



Appendix A: Recommended Construction Phase Mitigation

Recommended Construction Phase Mitigation

The mitigation measures outlined within this Appendix are based on the IAQM's recommendations for *Medium Risk* sites, suitable to the dust impact risk level presented in Chapter 5 of this assessment. Where the IAQM provides mitigation measures specific to certain construction activities, these have been based on the IAQM's recommendations for the corresponding level of dust impact risk determine in Chapter 5.

Please refer to the IAQM's latest *Guidance on the assessment of dust from demolition and construction*¹² and *Guidance on Air Quality Monitoring in the Vicinity of Demolition and Construction Sites (2018)*²⁶ for further, "desirable", mitigation measures.

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 Appendix. The DMP may include monitoring of dust deposition, dust flux, real-time PM₁₀ continuous monitoring and/or visual inspections.

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 off-site, and the action taken to resolve the situation in the log book.

Monitoring

-  Carry out regular site inspections to monitor compliance with the Dust Management Plan, record inspection results, and make an inspection log available to the local authority when asked.

26 Institute of Air Quality Management. (2018). *Guidance on Air Quality Monitoring in the Vicinity of Demolition and Construction Sites*.

- 🌱 Increase the frequency of 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 PM₁₀ continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site or, if it is a large site, before work on a phase commences. Further guidance is provided by the IAQM on monitoring during demolition, earthworks and construction..

Preparing and Maintaining the Site

- 🌱 Plan site layout so that machinery and dust causing activities are located away from receptors, as far as 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 extended 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.

Operating Vehicles / Machinery & 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.
- 🌱 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 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.

Waste Management

- 🌱 Avoid bonfires and burning of waste materials.

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.



Phlorum Limited

Head Office & Registered Office:

Unit 12
Hunns Mere Way
Woodingdean
Brighton
East Sussex
BN2 6AH
T: 01273 307 1672

info@phlorum.com
www.phlorum.com

Registered in England & Wales. Reg No. 4967256