



Air Quality Assessment

Land East of Wandleys Lane, Fontwell

August 2026

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August 2026

Bellway Homes Limited (Wessex)

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1. Introduction

Background

- 1.1 Phlorum Limited was commissioned by Bellway Homes Limited (Wessex) to undertake an Air Quality Assessment in support of a Reserved Matters Proposal, following the grant of outline planning permission WA/35/23/OUT, for the construction of 95 new homes, access, new pedestrian links, open space, landscaping, habitat creation, drainage features and associated groundworks and infrastructure at Land East of Wandleys Lane, Fontwell, West Sussex. The site is centred on national grid reference 495630, 106680, with the site's location displayed in Figure 1.
- 1.2 Land use in the surrounding area is predominantly residential and green spaces, with a small number of commercial buildings, including Westbourne Motors and Greenacre Nursery, located approximately 250m north-east and south-west respectively.
- 1.3 The primary sources of air pollution in the vicinity of the site are motor vehicles travelling on the local road network, particularly the A27 Arundel Road, located approximately 260m to the north of the site, is the closest major road to the site.
- 1.4 Air quality is managed locally by Arun District Council (ADC), who do not currently operate any Air Quality Management Areas within the district. The closest AQMA to the site, the Chichester St Pancras AQMA, is located approximately 9.1km to the south-west. This AQMA was declared in 2007 due to exceedances of the annual mean UK Air Quality Standard (AQS) for nitrogen dioxide (NO₂).

Scope of Assessment

- 1.5 The focus of this report is the assessment of the suitability of the site, in air quality terms, for its proposed residential end use, considering both construction and operational phases, and recommending mitigation where necessary. Further assessment of the potential for traffic generated by the proposed development to impact local air quality is also presented.
- 1.6 An Emissions Mitigation Assessment was also undertaken, in line with guidance from the Sussex-Air Partnership, including details of the proposed development's mitigation package intended to reduce potential impacts associated the operation of the proposed development on local air quality.

- 1.7 The Air Quality Assessment will also support the discharge of a planning condition attached to the outline planning permission for the development. Condition 23 of the outline planning permission states:

"Prior to any works commencing, an air quality assessment must be submitted to and approved in writing by the Local Planning Authority. The assessment shall include full details of the measures necessary to mitigate the emissions as calculated in the assessment which shall be implemented prior to the occupation of any dwellings."

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 the 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 The Department for Environment, Food & Rural Affairs' (Defra) *Environmental Improvement Plan 2025*⁴ outlines an interim target of 10 µg.m⁻³ for annual mean PM_{2.5} concentrations, to be achieved by December 2030.
- 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 As stated above, air quality is managed locally by ADC, who do not operate any AQMAs within the district. Therefore, ADC has not adopted an AQAP.

National Planning Policy Framework

- 2.9 The National Planning Policy Framework (NPPF)⁵, which was updated 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);*
- 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;*

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

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

4 Department for Environment, Food & Rural Affairs. (2025). *Environmental Improvement Plan 2025*.

5 Department for Levelling Up, Housing and Communities. (2025). *National Planning Policy Framework*.

- 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."*

2.10 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 wider area to impacts that could arise from the development."

2.11 With regard to 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 to 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."

2.12 Regarding potential adverse impacts generated by development, the NPPF states the following:

"[...] Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity,

the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed."

- 2.13 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

- 2.14 Reference ID 32 (Air Quality) of the National Planning Practice Guidance (PPG)⁶ 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.
- 2.15 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-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;*

⁶ Planning Practice Guidance (PPG) 32. (2019). *Air Quality*. Available from: <http://planningguidance.planningportal.gov.uk/blog/guidance/air-quality/>.

- ☞ *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.”*

2.16 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.

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

Local Planning Policy

2.18 Adopted in 2018, ADC's *Arun Local Plan 2011 to 2031*⁷ currently acts as the primary document guiding development within the district up to 2031. ADC's Local Plan contains two policies with direct relevance to air quality:

2.19 Policy QE DM3: *Air pollution*:

“All major development proposals will be required to assess the likely impacts of the development on air quality and mitigate any negative impacts by:

- 1. Ensuring the development is located within easy reach of established public transport services;*
- 2. Maximising provision for cycling and pedestrian facilities;*
- 3. Encouraging the use of cleaner transport fuels on site, through the inclusion of electric car charging points; [...]*

Development proposed nearby any Air Quality Management Area (AQMA) declared within the District within the Plan period, will require an air quality assessment to identify likely impacts of development upon the designated area. Developers will be required to ensure delivery of the actions set out within any Air Quality Action Plan.

⁷ Arun District Council. (2018). *Arun Local Plan 2011 to 2031*.

Industrial development which is regulated by environmental permits (that creates or results in dust, smell, fumes, smoke, heat, radiation, gases, steam or other forms of pollution) must be located in such a position which ensures that the health, safety and amenity of users of the site or surrounding land is not put at risk and the quality of the environment would not be damaged or put at risk.

Developments shall also be consistent with all other Local Plan policies."

2.20 Policy QE SP1: Quality of the Environment:

"The Council requires that all development contributes positively to the quality of the environment and will ensure that development does not have a significantly negative impact upon residential amenity, the natural environment or upon leisure and recreational activities enjoyed by residents and visitors to the District.

The location of existing industrial and commercial uses, including waste management uses, must be taken into consideration when assessing proposals for development sensitive to noise, light, odour and outputs to air. This is to ensure that land allocated for these uses are protected and to ensure that the amenity of new developments and facilities is safeguarded from the impacts of incompatible land uses."

3. Assessment Methodology

Guidance

- 3.1 Defra's latest *Local Air Quality Management Technical Guidance* (LAQM.TG(22))⁸ was followed in carrying out this assessment.
- 3.2 The IAQM's latest *Guidance on the Assessment of Dust from Demolition and Construction*⁹ was also used to assess the risk of dust emissions during the construction phase of the proposed development.
- 3.3 The Greater London Authority (GLA) Supplementary Planning Guidance on *The Control of Dust During Construction and Demolition*¹⁰ has also been referred to, which is considered best practice guidance for the UK. It details a number of mitigation measures that should be adopted to minimise adverse impacts from dust and fine particles.
- 3.4 The latest EPUK & IAQM guidance on *Planning for Air Quality*¹¹ was also referred to throughout the assessment, particularly in the screening of traffic related impacts on local air quality.
- 3.5 Defra's *Diffusion Tubes for Ambient NO₂ Monitoring: Practical Guidance*¹² (AEA Guidance) was utilised when establishing the suitability of the site for its proposed use.
- 3.6 ADC is a member of the Sussex-Air partnership, and so the *Air Quality and Emissions Mitigation Guidance for Sussex*¹³ (AQEMGFS) has been followed in the emissions mitigation assessment.

Establishing Baseline Conditions

- 3.7 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.

8 Defra. (2025). *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).

9 Institute of Air Quality Management. (2024). *Guidance on the Assessment of Dust from Demolition and Construction* (Version 2.2).

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

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

12 AEA Energy and Environment. (2008). *Diffusion Tubes for Ambient NO₂ Monitoring: Practical Guide for Laboratories and Users*.

13 Sussex-Air (2021). *Air Quality and Emissions Mitigation Guidance for Sussex* (2021).

- 3.8 Defra provides estimated background concentrations of the UKAQS pollutants at the UK Air Information Resource (UK-AIR) website¹⁴. 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, based on monitoring data from 2021.
- 3.9 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.
- 3.10 Local pollutant 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 ADC's *2025 Air Quality Annual Status Report*¹⁵ (ASR) have been reviewed and discussed, where relevant.

Construction Phase

- 3.11 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.
- 3.12 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.
- 3.13 High sensitivity receptors are considered particularly sensitive when located within 20m of a works area. Figure 2 shows receptors that could be sensitive to dust that are located within 20m, 50m, 100m and 250m distance zones from the site boundary.
- 3.14 The Multi Agency Geographic Information for the Countryside (MAGIC) website¹⁶, which incorporates Natural England's interactive maps, has been reviewed to identify whether any statutory sensitive 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.

¹⁴ Defra. (2024). *UK Air Information Resource Website (UK-AIR)*. Available from: www.uk-air.defra.gov.uk

¹⁵ Arun District Council. (2025). *2025 Air Quality Annual Status Report (ASR)*.

¹⁶ Natural England and MAGIC partnership organisations. Multi Agency Geographic Information for the Countryside. Available from: <http://www.magic.gov.uk/> [Accessed August 2026].

Construction Significance

- 3.15 The IAQM guidance suggests that Demolition, Earthworks, Construction and Trackout should all be assessed individually to determine the overall significance of the construction phase.
- 3.16 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.
- 3.17 Whilst the IAQM provides examples of criteria that may be used to assess these magnitudes, the vast number of potential variables mean 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.
- 3.18 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.
- 3.19 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."*
- 3.20 Based on these factors, the area is categorised as being of 'Low', 'Medium' or 'High' sensitivity.
- 3.21 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.
- 3.22 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

- 3.23 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.
- 3.24 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.

Increases in Traffic

- 3.25 The latest EPUK & IAQM planning guidance¹¹ provides indicative thresholds for changes in traffic flows which would require a detailed (pollutant dispersion modelling) Air Quality Assessment to be undertaken, when a site is located outside of, or within, an AQMA. These are a change in 24-hour Annual Average Daily Traffic (AADT) flows exceeding 100 Light-duty Vehicles (LDVs) and/or 25 Heavy-duty Vehicles (HDVs) on any specific road link within, or adjacent to, an AQMA, or a change in AADT flows exceeding 500 LDVs and/or 100 HDVs on any roads elsewhere. 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.

Site Suitability

- 3.27 In addition, it is necessary to determine whether the proposed development could introduce new receptors into an area of existing poor air quality. Further analysis of the site's suitability, in air quality terms, for the introduction of new high-sensitivity receptors has been undertaken and is presented in Section 6 of this report.

Emissions Mitigation Assessment

- 3.28 The Sussex-Air Guidance¹³ advocates that an Emissions Mitigation Assessment should be undertaken to demonstrate how air quality impacts from any 'Major' development can be minimised.

- 3.29 As the proposed development is classified as 'Major' with reference to *The Town and Country Planning (Development Management Procedure) (England) Order 2015*¹⁷, an Emissions Mitigation Assessment with a damage cost calculation is required. The damage cost calculation was undertaken following the Sussex-Air guidance and Defra's latest Damage Cost guidance. The latest Defra air quality damage cost appraisal toolkit was also utilised within the assessment.

Damage Cost Calculation

- 3.30 The emissions calculation utilised the latest Defra Emission Factor Toolkit (EFT v14.1)¹⁸ to determine total transport related emissions (NO_x & PM_{2.5}) that would be generated by the proposed development.
- 3.31 Defra provides 'damage costs'¹⁹, which are a 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, which are then combined with the forecasted emissions changes to provide an approximation of the monetary cost (or benefit) to society caused by development.
- 3.32 Defra's Appraisal Toolkit²⁰, 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.
- 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 the 'damage cost' to be offset.

17 Department for Communities and Local Government. (2015). *The Town and Country Planning (Development Management Procedure) (England) Order 2015*, Article 2. Available at: <https://www.legislation.gov.uk/uksi/2015/595/article/2>

18 Department for Environment, Food & Rural Affairs. (2026). *Emission Factor Toolkit (version 14.1)*.

19 Department for Environment, Food & Rural Affairs. (2026). *Air Quality Appraisal: Damage Cost Guidance*.

20 Department for Environment, Food & Rural Affairs. (2026). *Air Quality Damage Cost Appraisal Toolkit*.

4. Baseline Air Quality

- 4.1 This section 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 site is located (i.e. UK-AIR Grid Reference: 495500, 106500).

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	8.0	7.8	7.6	7.3	7.1	6.9	6.7	6.5	6.2	6.0
PM ₁₀	10.2	10.1	10.0	9.9	9.8	9.8	9.7	9.6	9.5	9.4
PM _{2.5}	6.3	6.3	6.2	6.1	6.0	5.9	5.9	5.8	5.7	5.7

- 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 site between 2021 and 2030, are predicted to be well below their respective annual mean AQSS.
- 4.4 In 2028, the proposed development's earliest projected opening year, background NO₂, PM₁₀ and PM_{2.5} concentrations are predicted to be well below their respective annual mean AQSSs by approximately 84%, 76% and 71%, respectively.
- 4.5 From 2021 to 2030, background PM_{2.5} concentrations are predicted to be below Defra's 10 µg.m⁻³ interim target⁴, to be achieved by 2030.
- 4.6 Therefore, annual mean background pollutant concentrations are likely to be well below their respective AQSSs and Defra's interim target for PM_{2.5} at, and in the vicinity of, the site.
- 4.7 Concentrations of all pollutants are predicted to decline each year. These reductions are principally due to the forecast effect of the roll out of cleaner vehicles, but also due to UK national and international plans to reduce emissions across all sectors.

Local Sources of Monitoring Data

- 4.8 Local air quality monitoring is also considered an appropriate source of data for the purpose of describing baseline air quality.

- 4.9 At the time of writing, the most recent ASR¹⁵ released by ADC included local pollutant monitoring data from the year 2024.

Automatic Monitoring

- 4.10 ADC do not currently undertake automatic monitoring for NO₂, PM₁₀ or PM_{2.5} within the district.

Non-Automatic Monitoring

- 4.11 ADC operates a non-automatic NO₂ diffusion tube monitoring network comprising 26 sites positioned in strategic locations across the district.
- 4.12 The most recent annual mean NO₂ data for monitoring locations within 6km of the site from ADC's latest ASR, are included in Table 4.2, below.

Table 4.2: Monitoring data from Local NO₂ Diffusion Tubes

Monitor	Type	Distance to Site (km)	Annual Mean NO ₂ Concentration (µg.m ⁻³)				
			2020	2021	2022	2023	2024
36	R	0.7	-	-	-	28.4	25.3
25	R	2.0	14.8	14.8	18.0	17.4	16.4
20	R	2.2	12.9	13.9	16.0	15.0	12.8
26	R	2.9	14.9	15.0	18.6	16.6	15.6
8	R	5.0	12.4	13.0	13.8	13.7	11.7
24	R	5.4	15.5	16.7	18.8	17.3	14.6
13	R	5.8	19.9	21.1	26.5	23.4	21.9

Note: "R" = Roadside.

- 4.13 The data in Table 4.2 show that all measured annual mean concentrations of NO₂ at all diffusion tube monitoring locations within 6km of the site were below the 40 µg.m⁻³ annual mean AQS from 2020 to 2024.
- 4.14 Diffusion tube 36 is the closest tube to the site, located in a roadside position with respect to the A27 Arundel Road approximately 0.7km north-west of the site. In 2024, tube 36 recorded an annual mean NO₂ concentration of 25.3 µg.m⁻³; below the annual mean AQS by 36.75%, despite the tube's close proximity to the A27 Arundel Road.

- 4.15 Diffusion tube 24, which is located in a roadside position 5.4km from the site, recorded an annual mean NO₂ concentration of 14.6 µg.m⁻³ in 2024, which is 63.5% below the long-term AQS. The land use in the vicinity of this diffusion tube closely reflects land use at the site, being largely residential, accessed via minor roads and offset from the A27 by approximately 260m. Therefore, it is reasonable to assume that conditions would be similar at the proposed development site.
- 4.16 The data in Table 4.2 show that across the monitoring locations, annual mean NO₂ concentrations generally follow a gradual downward trend over time, with most sites peaking around 2022 and then declining through to 2023–2024. It is reasonable to assume that the reduced levels of NO₂ between 2020–2021 are related to the temporary reduction in vehicle emissions during Covid-19.

Summary of Baseline Air Quality

- 4.17 The UK-AIR background projections indicate that annual mean concentrations of NO₂, PM₁₀ and PM_{2.5} are below their respective long-term AQSs and the future interim target for PM_{2.5}.
- 4.18 Local air quality monitoring data also indicate that in recent years annual mean NO₂ concentrations have been consistently below the annual mean AQS.
- 4.19 Both UK-AIR and local monitoring data show a general decline in pollutant concentrations over recent years.

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 Where the total volume of structures to be demolished is below 12,000m³, the potential dust emission magnitude for the demolition phase is defined as *Small* according to the IAQM guidance⁹.
- 5.4 The volume of buildings to be demolished on site is expected to be approximately 20m³, and the tallest structures set to be demolished are below 6m in height above ground level, falling comfortably within the IAQM's⁹ *Small* dust emission magnitude category for demolition.
- 5.5 It is understood that mobile crushing equipment is expected to be used on site during demolition. However, the scale of demolition activities is considerably low at 20m³.
- 5.6 Therefore, adopting professional judgement, the overall dust emission magnitude for the demolition phase is defined as *Small*, following the IAQM guidance.

Earthworks

- 5.7 The total site area is approximately 63,800m², which is classified as a *Medium* dust emission magnitude in accordance with the IAQM guidance.
- 5.8 It is understood that between 5 and 10 heavy earth moving vehicles would operate on-site at any one time during the proposed development's construction, which corresponds to the IAQM's *Medium* dust emission magnitude category.
- 5.9 Based on the above, the overall dust emission magnitude for the earthworks phase is considered to be *Medium*, with reference to the IAQM guidance.

Construction

- 5.10 During construction, activities that have the potential to cause emissions of dust may include concrete batching, sandblasting and piling. 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. Concrete batching and sandblasting are not expected on site during construction.
- 5.11 It is understood that piling will occur during the construction phase and construction materials will comprise traditional building materials (brick and block and / or timber frames).
- 5.12 It is estimated that the total proposed volume of structures to be constructed will be between 12,000m³ – 75,000m³, falling within the IAQM's *Medium* dust emission magnitude category.
- 5.13 Therefore, based on the scale of construction works to be undertaken, the overall dust emission magnitude for the construction phase is considered to be *Medium* with reference to the IAQM guidance.

Trackout

- 5.14 Construction traffic, when travelling over soiled road surfaces, has the potential to generate dust emissions and to soil the local road network. During dry weather, soiled roads can lead to dust being emitted due to physical and turbulent effects of vehicles.
- 5.15 The site will be accessed via the new bell mouth entrance at Wandleys Lane, without utilising any unpaved road surfaces, which can be classified as *Small*, with reference to the IAQM guidance.
- 5.16 It is anticipated that fewer than 20 HDVs would access the site each day during construction.
- 5.17 Based on the above, the dust emission magnitude for the trackout phase can be described as *Small* with reference to the IAQM guidance.

Emission Magnitude Summary

- 5.18 A summary of the dust emission magnitude as a result of the activities of Demolition, 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
Demolition	Small
Earthworks	Medium

Activity	Dust Emission Magnitude
Construction	Medium
Trackout	Small

Sensitivity of the Area

- 5.19 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.
- 5.20 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.
- 5.21 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.
- 5.22 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. downwind of the source during dry periods.
- 5.23 The approximate number of high sensitivity human receptors in the vicinity of the site is detailed in Table 5.2 below, with key sensitive receptors shown in Figure 2.

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	Adjacent residential dwellings at Wandleys Lane and West Walberton Lane
<50	25	Surrounding residential dwellings
<100	Approx. 50	Residential dwellings in the local area
<250	>150	Residencies in the surrounding area and The Laurels Assisted Living

- 5.24 Figure 3 shows that the predominant wind direction from the closest meteorological station, Shoreham Airport (2024), is from the south-west. Therefore, it is likely that the predominant wind direction in the vicinity of the site would also be from the south-west. As shown in Table 5.2 (above) and Figure 2, there are 8 *High Sensitivity* receptors within 20m of the site. Therefore, the sensitivity of the area to dust soiling impacts can be defined as *Medium* in line with IAQM guidance.
- 5.25 As presented in Table 4.1, UK-AIR predicted annual mean concentrations of PM₁₀ in the vicinity of the site are comfortably 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 there are fewer than 100 *High Sensitivity* receptors within 20m of the site. As there are 8 *High Sensitivity* human receptors within 20m of the site, the sensitivity of the area to human health impacts is defined as *Low*.
- 5.26 Review of the MAGIC website¹⁶, 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. The closest statutory ecological site is the Eartham Pit, Boxgrove Site of Special Scientific Interest (SSSI), located approximately 3.4km north-west of the site. Therefore, based on distance alone, the proposed development can be considered to have a *Negligible* impact on local ecological receptors, with reference to the IAQM guidance.

Risk of Impacts

- 5.27 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
Demolition	<i>Low Risk</i>	<i>Negligible Risk</i>	<i>Negligible Risk</i>
Earthworks	<i>Medium Risk</i>	<i>Low Risk</i>	<i>Negligible Risk</i>
Construction	<i>Medium Risk</i>	<i>Low Risk</i>	<i>Negligible Risk</i>
Trackout	<i>Low Risk</i>	<i>Negligible Risk</i>	<i>Negligible Risk</i>

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

Site Specific Mitigation

- 5.29 The GLA guidance¹⁰ suggests a number of mitigation measures that should be adopted in order to minimise impacts from 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.
- 5.30 In addition, the IAQM⁹ lists recommended mitigation measures for low, medium and high dust impact risk sites. The highly recommended mitigation measures for *Medium Risk* sites are included in Appendix A of this report.
- 5.31 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

- 5.32 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*, thus complying with the requirements of the National Planning Policy Framework⁵ by directly and appropriately mitigating the “*potentially unacceptable impacts (such as dust) during construction for nearby sensitive locations*”.

6. Operational Phase

Impacts on Local Air Quality

- 6.1 The latest EPUK & IAQM planning guidance¹¹ provides indicative thresholds for changes in traffic flows which would require a detailed (dispersion modelling) Air Quality Assessment to be undertaken when a site is located within or outside of an AQMA, as discussed in Section 3.2.4.
- 6.2 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.
- 6.3 Information provided by the project's transport consultants, Stantec, indicates that the proposed development would generate total 24-hour AADT flows of 456 LDVs and 4 HDVs.
- 6.4 The transport consultants also provided traffic information for the two closest AQMAs to the proposed development site, Chichester St Pancras AQMA and the Worthing / Grove Lodge AQMA, which are located 9.1km south-west and 17.4km south-east from the site, respectively.

The proposed development is expected to generate approximately 76 LDV flows towards the Chichester St Pancras AQMA and approximately 71 LDV flows towards the Worthing / Grove Lodge AQMA. In both cases, the predicted LDV flows do not exceed the 100 LDV threshold for development-generated LDV traffic within an AQMA.

- 6.5 Therefore, as the proposed development is not anticipated to result in an increase exceeding the EPUK & IAQM thresholds on any local road link, or through the two closest AQMA's to the site, it is reasonable to anticipate that traffic generated by the proposed development would have an insignificant impact on local air quality.

Site Suitability

- 6.6 LAQM(TG22)⁸ (Tables 7.7 and 7.8) sets 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*¹² 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 in an urban background location, away from adverse impacts associated with emissions from road sources:

-  >50m from any major source of NO₂ (e.g. multi-storey car parks);
-  >30m from any 'very busy' road (>30,000 vehicles per day);
-  >20m from a 'busy' road (10,000 – 30,000 vehicles per day);
-  >10m from any 'main' road (including quiet roads within residential estates); and
-  >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 motor vehicles travelling on the local road network, particularly on Wandleys Lane, bounding the site to the west. The A27 Arundel Road, located approximately 260m north of the site, is the closest major road to the site.
- 6.9 As the A27 Arundel Road is located approximately 260m north of the site, sensitive uses at the site can be considered to be reasonably distanced from this source of pollution.
- 6.10 Whilst Wandleys Lane bounds the site to the west, the closest sensitive (residential) uses at the site are expected to be located 22m from the kerb's edge. While the Department for Transport has not published traffic counts for Wandleys Lane, it is considered a residential unclassified / C-road, therefore, it will not host the levels of traffic flows which could lead to it being considered a *Busy* road, with reference to the AEA guidance¹². Therefore, where sensitive uses at the site are located more than 20m from the road, they can be considered to be situated in an urban background location with respect to Wandleys Lane.
- 6.11 Following LAQM.TG(22)⁸ guidance, it is expected that pollutant concentrations at these receptors are, therefore, likely to be similar to those identified at urban background sites within the local area.
- 6.12 ADC did not undertake any monitoring for NO₂, PM₁₀ or PM_{2.5} at monitors located in urban background locations within the vicinity of the site in 2024. However, ADC undertook roadside monitoring of NO₂ at seven locations within 6km of the site in 2024.
- 6.13 Baseline monitoring data, presented in Section 4 of this Air Quality Assessment, show that there were no recorded exceedances of the long-term AQS for NO₂ from 2020 to 2024, at any monitoring location within the vicinity of the site, even at roadside locations. Furthermore, a general decline in annual mean NO₂ concentrations is observed between 2022 and 2024. Monitoring data recorded at roadside locations can be considered representative of exposure to much higher emissions than the locations of the proposed receptors at the site.
- 6.14 Therefore, local monitoring data suggests that annual mean NO₂ concentrations at sensitive receptor locations are likely to be comfortably below the respective AQS.

- 6.15 UK-AIR modelled predictions estimate background annual mean NO₂, PM₁₀ and PM_{2.5} concentrations to be well below their respective AQs and the future interim target for PM_{2.5} from 2021 to 2030. UK-AIR and local monitoring data in the vicinity of the site show a general decline in annual mean NO₂, PM₁₀ and PM_{2.5} concentrations.
- 6.16 Considering the above, the site is considered to be suitable, in air quality terms, for the proposed use, and no further assessment of the site's suitability for the proposed end use is considered necessary.

Planning Policies

- 6.17 Considering the above, the proposed development is not anticipated to result in a significant impact on local air quality or to introduce high sensitivity receptors to an area of poor air quality, thereby complying with The Air Quality (England) (Amendment) Regulations 2002², The Environment (Miscellaneous Amendment) (EU Exit) Regulations 2020³, the NPPF⁵ and the national PPG⁶. It is also anticipated that the future target for PM_{2.5}, outlined by Defra's *Environmental Improvement Plan 2025*⁴, will likely be achieved at the site by 2030.
- 6.18 As the proposed development is not anticipated to result in a significant impact on local air quality or to introduce high sensitivity receptors to an area of poor air quality, it is anticipated that the proposed development will comply with ADC's Local Policies QE DM3: *Air pollution* and QE SP1: *Quality of the Environment*, with regards to the amenity of users at the proposed development site and in the surrounding area.
- 6.19 Considering the above, the proposed development is anticipated to be compliant with relevant national and local policies, where directly applicable to this Air Quality Assessment.

7. Emissions Mitigation Assessment

Emission cost calculation

- 7.1 Following the December 2025 update to Defra's Emissions Cost Calculation guidance¹⁹, the emissions cost calculation below has been carried out to estimate the value of the impact of NO_x and PM_{2.5} emitted by the proposed development's operational traffic.
- 7.2 To evaluate the scale of a proposed development's total emissions, Defra recommends 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 Emissions Factor Toolkit¹⁸ 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 below. The anticipated opening year of the proposed development is 2028, so the five-year period used in the calculation runs from 2028 to 2032, inclusive.

Table 7.1: Calculation Inputs

Input	Value	Unit	Source/guidance
Trip Length	10	km	AQEMGFS
Development Traffic Flow	460 Total AADT flows (456 LDVs and 4 HDVs)	AADT	Stantec
EFT Road Type	Urban (not London)	-	EFT
EFT Year	2028 – 2032	-	In line with EFT estimates
Average Speed	50	km.hr ⁻¹	AQEMGFS
Appraisal period	5	years	AQEMGFS

- 7.4 Total emission 'damage' costs were calculated using Defra's appraisal toolkit and are 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 Medium' were based on Defra 2026 prices.

Table 7.2: Emission Cost Calculation for NO_x

	2028	2029	2030	2031	2032
NO _x increase (tonnes)	0.212	0.181	0.151	0.126	0.105
Central Damage cost (NO _x)	£11,824	£11,824	£11,824	£11,824	£11,824
Adjusted Damage cost (NO _x)	£2,509	£2,105	£1,738	£1,427	£1,167
Total	£8,946				

Table 7.3: Emission Cost Calculation for PM_{2.5}

	2028	2029	2030	2031	2032
PM _{2.5} increase (tonnes)	0.030	0.030	0.029	0.028	0.028
Central Damage cost (PM _{2.5})	£101,304	£101,304	£101,304	£101,304	£101,304
Adjusted Damage cost (PM _{2.5})	£3,065	£2,955	£2,846	£2,750	£2,664
Total	£14,279				

7.6 The total damage costs are summarised as follows:

NO_x emission 'damage' cost = £8,946 +

PM_{2.5} emission 'damage' cost = £14,279

TOTAL (cost, £) = £23,225

Mitigation

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

7.8 As the development is considered to be 'Major' in accordance with The Town and Country Planning guidance¹⁷ and the Sussex-Air guidance¹³, the following mitigation measures should be included 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.
- 🌱 meet electric vehicle charging point (EVCP) guidance set out in West Sussex County Council's (WSCC) *Guidance on Parking at New Developments*²¹ and the latest Part S Building Regulations.

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

- 7.9 It is understood that the proposed development will rely on an all-electric energy strategy supported by photovoltaic panels (PV), and air source heat pumps (ASHP).
- 7.10 It is understood that one active electric vehicle (EV) charging point will be available per plot (a total of 95 EV charging points).
- 7.11 In addition to the provision of EV charging infrastructure, the developer is committed to providing the following mitigation:
- 🌱 Provision of secure cycle storage;
 - 🌱 A Travel Plan that encourages a shift to low- or no-emissions transport modes;
 - 🌱 A welcome pack for new occupants to encourage the use of sustainable transport modes;
 - 🌱 “Cable to Property” broadband to facilitate working from home; and
 - 🌱 Provision of green infrastructure.
- 7.12 Phlorum has been informed that the proposed mitigation package will offset the proposed development’s calculated ‘emission cost’ and therefore minimise potential incremental air quality impacts arising from the proposed development’s operation. The Applicant has confirmed that the Travel Plan alone will cost approximately £29,400.

Policy Context

- 7.13 Considering the above, the proposed development meets the requirements of the AQEMGFS guidance¹³, with regards to air quality pollution mitigation, as the mitigation package fully off-sets the ‘emissions cost’, calculated above.
- 7.14 Therefore, the proposed development is compliant with Condition 23 of the outline planning permission, where directly relevant to the mitigation of emissions.

8. Summary & Conclusions

- 8.1 UK Air Information Resource background concentrations and local air quality monitoring results from the wider area indicate that air quality at the site is generally good, with pollutant concentrations in the surrounding area expected to be below relevant UK Air Quality Standard concentrations and The Department for Environment, Food & Rural Affairs' future PM_{2.5} interim target.
- 8.2 The construction phase of the development could give rise to emissions which could cause dust soiling effects on adjacent uses. However, by adopting appropriate mitigation measures to reduce emissions and their potential impact, residual effects should be *Negligible*, thus complying with the requirements of the National Planning Policy Framework.
- 8.3 The operation of the proposed development is not expected to introduce new receptors into an area of existing poor air quality, nor is it anticipated to significantly impact local air quality.
- 8.4 To mitigate for future operational emissions, a scheme of mitigation measures shall be implemented, as listed in Section 7 of this report. The list of mitigation measures includes a reasonable level of air quality mitigation to offset the development's calculated 'emissions cost', thereby addressing Condition 23 associated with the outline planning permission.
- 8.5 The proposed development is expected to comply with all relevant air quality policy. Air quality should not, therefore, pose any significant obstacles to the planning process.

Figures and Appendices

Figure 1: Site Location Plan



Figure 1: Site Location Plan

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Author: S. Day
Date: 13/05/2026
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Figure 2: Local Receptors

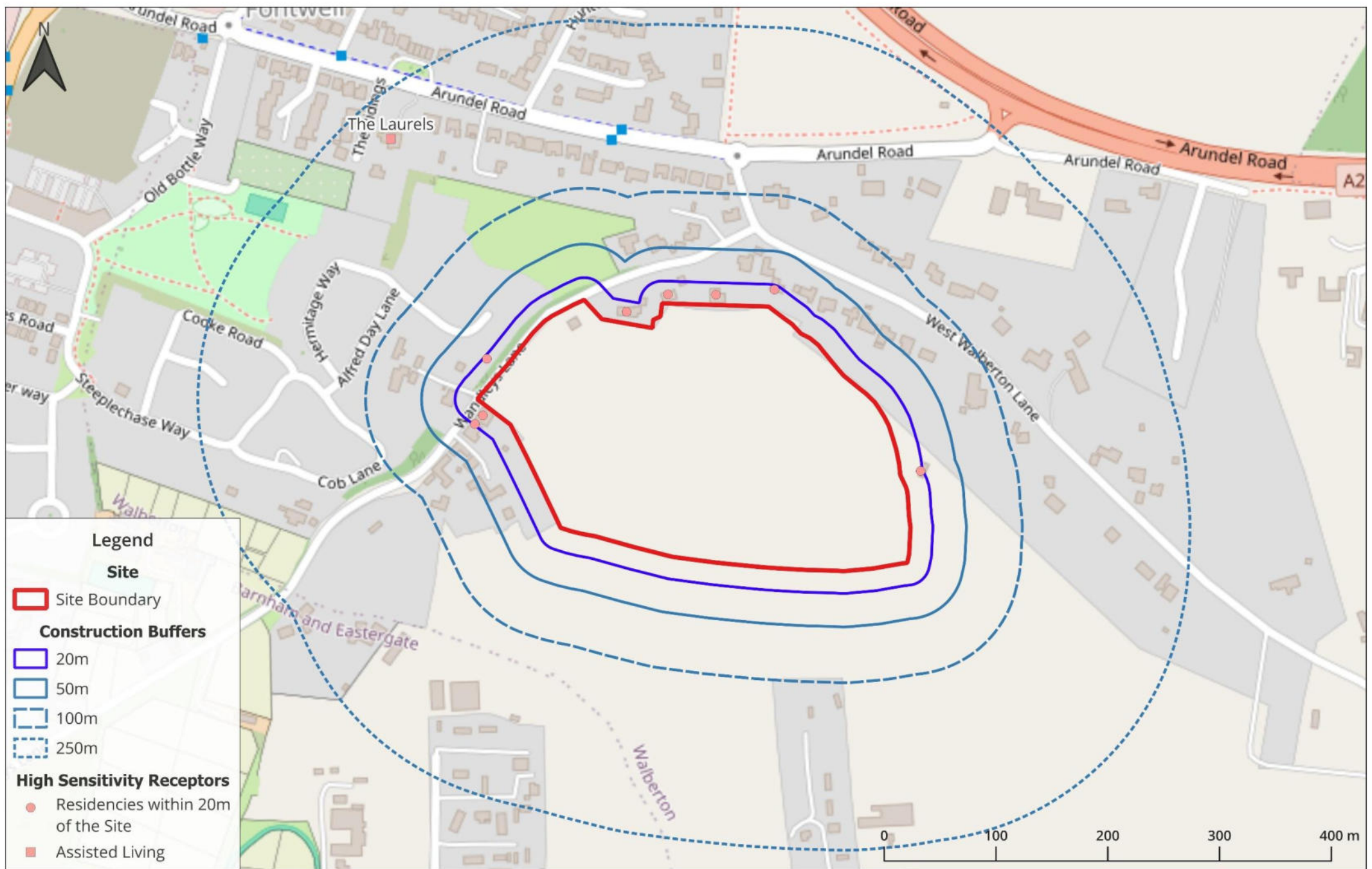


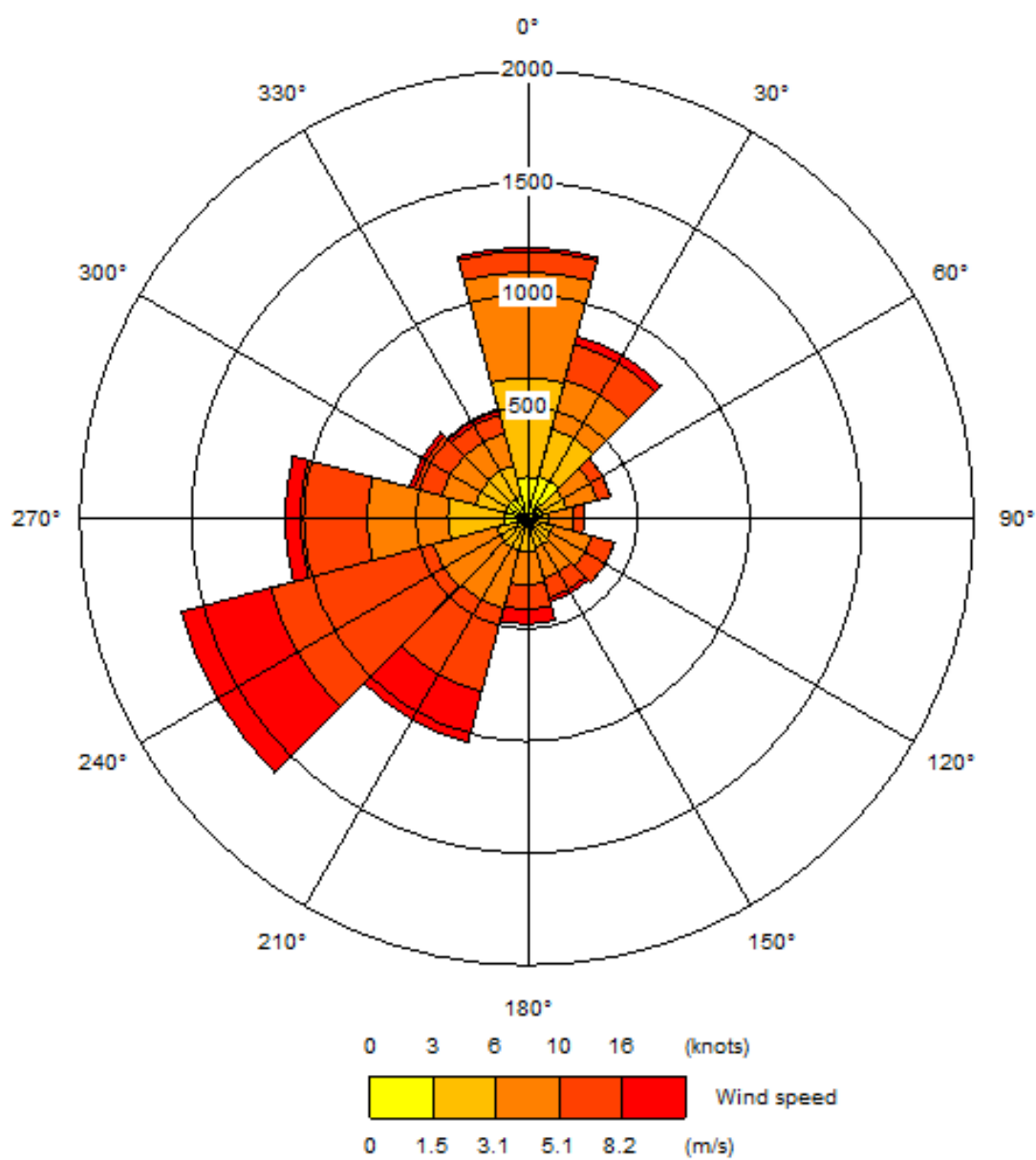
Figure 2: Local Receptors

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Figure 3: Wind Rose for Shoreham Airport (2024)



Appendix A: IAQM Highly Recommended Mitigation Measures for Medium Risk Sites

Recommended Mitigation Measures for Sites with a *Medium Risk* of Dust Impacts

Please refer to the IAQM's *Guidance on the Assessment of Dust from Demolition and Construction (2024)*⁹ and *Guidance on Air Quality Monitoring in the Vicinity of Demolition and Construction Sites (2018)*²² 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 document. The desirable measures should be included as appropriate for the site. The DMP may include monitoring of dust deposition, dust flux, realtime 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 exception 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.
- 🌱 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

²² Institute of Air Quality Management. (2018). *Guidance on Air Quality Monitoring in the Vicinity of Demolition and Construction Sites*.

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 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.

Operating Vehicles / 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.
-  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.

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.

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.

Trackout

- 🌱 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 log book.
- 🌱 Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.
- 🌱 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 10 m from receptors where possible.



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