

A large, stylized green leaf graphic that curves across the middle of the page. It contains faint, darker green images of various plants and foliage.

Air Quality Assessment

Land east of College Lane,
Hurstpierpoint

September 2026

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1. Introduction

Background

- 1.1 Phlorum Limited has been commissioned by Thakeham Homes Limited to undertake an Air Quality Assessment (AQA) for the proposed erection of 100 dwellings, with associated access, car parking, refuse/recycling storage, landscaping, infrastructure and works ("the Proposed Development"), located on land east of College Lane, Hurstpierpoint ("the site"). The National Grid Reference for the centre of the site is 529275, 116075. A site location plan is included in Figure 1.
- 1.2 Land use in the vicinity of the site comprises residential uses, south and west of the site, and greenspaces and agricultural uses, north and east of the site.
- 1.3 The main sources of air pollution in the vicinity of the site are vehicles travelling on the local road network, particularly on College Lane, directly west of the site and the B2116 Wickham Hill, located approximately 110m south of the site.
- 1.4 Air quality is managed locally by Mid Sussex District Council (MSDC), who have not declared any Air Quality Management Areas (AQMA) within the district. The closest AQMA to the site is the Brighton & Hove AQMA 5, located approximately 9.5km south of the site. This AQMA was declared in 2020 due to exceedances of the long-term (annual mean) Air Quality Standard (AQS) for 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 sensitive 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 to reduce its potential impact on local air quality.

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 The Department for Environment, Food & Rural Affairs' (Defra) *Environmental Improvement Plan 2025*⁴ outlines a legal target of 10 µg.m⁻³ for annual mean PM_{2.5} concentrations, to be achieved by 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 As stated above, MSDC do not have any active AQMAs declared within the district and, therefore, an AQAP is not required. MSDC have adopted an *Air Quality Strategy 2026 to 2030*⁵, which includes strategies and objectives to improve air quality throughout the district.

National Planning Policy Framework

- 2.9 The National Planning Policy Framework (NPPF)⁶, which was revised in August 2026, sets out the Government's planning policies for England. At its heart is the objective of achieving sustainable development.
- 2.10 In relation to sustainable development and the environmental impacts of traffic and transport, Policy TR3 - *Locating development in sustainable locations* states:

"1. So that development is located where it can support sustainable patterns of movement, enable good accessibility for different users and make the most of existing and proposed transport infrastructure, development proposals should reflect the following principles, taking into account the vision for the site, the type of development and its location: [...]"

d. The environmental impacts of traffic and transport infrastructure should be identified, assessed and taken into account – including taking opportunities to avoid or mitigate any adverse environmental effects, and to secure net environmental gains such as reductions in air pollution [...]"

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 Mid Sussex District Council. (2025). *Air Quality Strategy 2026 to 2030*.

6 Ministry of Housing, Communities & Local Government. (2026). *National Planning Policy Framework*.

- 2.11 Regarding the design of new development, Policy DP3 - *Key principles for well-designed places* states that development proposals should incorporate and/or connect to a network of high-quality, accessible and multifunctional green infrastructure, which can provide opportunities for recreation and healthy living, strengthen habitats, improve climate change resilience and improve air and water quality.
- 2.12 The NPPF also includes a number of policies to ensure that new development is appropriate for its location, taking into account risks posed by pollution.
- 2.13 *Policy P1 – Planning for clean and safe spaces*, states the following:

“1. To support efforts to avoid and mitigate risks from natural and man-made hazards, minimise levels of pollution and create clean, liveable and safe places for people to live, work and visit, development plans should: [...]

a. Allocate land for development where, taking into account the potential for mitigation: [...]

iii. Development proposals will not cause unacceptable levels of pollution, either alone or in combination with other pollution sources, taking into account communities which may be particularly vulnerable to its effects, such as children and older people, as well as habitats and species which may be vulnerable to pollution.

b. Consider any wider opportunities to reduce air, water, soil, noise or other forms of pollution, and contribute to compliance with national and local environmental targets and objectives, through the spatial strategy and policies for specific parts of the plan area (such as by identifying opportunities for strategic nature-based solutions).”

- 2.14 *Policy P3 – Living conditions and pollution* states the following:

“1. Development proposals should be appropriate for their location, taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, whether these effects are on or off-site; and whether this is as a result of the development itself or the product of preexisting conditions in its vicinity. In assessing the potential effects of pollution, consideration should be given to the potential sensitivity of the site, and its intended occupiers and users, as well as that of the environment and population in the surrounding area (including where certain groups could be particularly vulnerable to its effects, such as children and older people).

2. Within this context development proposals should:

a. Provide healthy living conditions for occupiers and users in terms of adequate access to light and avoiding exposure to levels of air, noise, artificial light or other sources of pollution which could have an unacceptable adverse effect on health

and the quality of life. Where necessary suitable mitigation measures should be incorporated to secure acceptable living conditions;

- b. Not give rise to, or contribute to, an unacceptable level of access to daylight and sunlight for neighbouring residents and occupiers, or unacceptable levels of air, noise, artificial light, water, soil or other forms of pollution on or beyond the site. Adverse impacts of this nature should be avoided where possible, or else mitigated to an acceptable degree. Where possible, opportunities should be taken to reduce pollution affecting the wider area (such as through traffic and travel management or improved external lighting);*
- c. Sustain and contribute to compliance with relevant limit values or national objectives and targets for air pollutants including PM2.5. Development proposals should take account of Air Quality Management Areas and be consistent with the objectives of relevant Air Quality Action Plans, Clean Air Plans and Local Air Quality Strategies; [...]"*

2.15 Lastly, *Policy P4 – Impact of development on existing activities* states the following:

"[...] 2. Where the operation of an existing activity could have a significant adverse effect on a proposed new development in its vicinity, development proposals should:

- a. Identify the nature of the potential impacts, informed where necessary by early discussions between the applicant (i.e. the 'agent of change') and those existing uses which could be affected by the proposal to inform the scope for mitigation; and*
- b. Be able to demonstrate that suitable mitigation can be provided before first occupation of the development, if it is to be acceptable. Planning conditions or obligations should be used to secure agreed mitigation measures."*

2.16 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

2.17 Reference ID 32 (Air Quality) of the National Planning Practice Guidance (PPG)⁷ 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.

⁷ Planning Practice Guidance (PPG) 32. (2019). *Air Quality*.

- 2.18 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;*
-  *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.”*

- 2.19 Details are also provided of 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 its construction/operation; and
-  Whether the development is likely to expose more people to poor air quality.

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

Local Planning Policy

- 2.21 MSDC's Local Plan, the *Mid Sussex District Plan 2014 – 2031* (2018)⁸, currently acts as the primary document concerning and guiding development within the borough up to 2031. The Local Plan contains one policy with direct relevance to air quality, which states:

DP29: Noise, Air and Light Pollution:

"The environment, including nationally designated environmental sites, nationally protected landscapes, areas of nature conservation or geological interest, wildlife habitats, and the quality of people's life will be protected from unacceptable levels of noise, light and air pollution by only permitting development where: [...]"

Air Pollution:

-  *It does not cause unacceptable levels of air pollution;*
-  *Development on land adjacent to an existing use which generates air pollution or odour would not cause any adverse effects on the proposed development or can be mitigated to reduce exposure to poor air quality to recognised and acceptable levels;*
-  *Development proposals (where appropriate) are consistent with Air Quality Management Plans."*

- 2.22 MSDC's emerging Local Plan, the *Mid Sussex District Plan 2021 - 2039*⁹ is currently at examination. Once adopted, the emerging Local Plan will act as the primary document concerning and guiding development within the borough up to 2039. The emerging Local Plan contains two policies with direct relevance to air quality, including:

DPN9: Air Quality:

"People's health and quality of life and the natural environment will be protected from unacceptable levels of poor air quality.

The use of active and sustainable travel measures and green infrastructure to reduce pollution concentrations and exposure is encouraged.

Development proposals will need to take into account the Council's air quality guidance.

The Council will require applicants to demonstrate that there is not an unacceptable impact on air quality. The development must minimise any air quality impacts, including cumulative impacts from committed developments, both during the construction process and lifetime of the completed development, either through a

⁸ Mid Sussex District Council. (2018). *Mid Sussex District Plan 2014 – 2031*.

⁹ Mid Sussex District Council. (2023). *Mid Sussex District Plan 2021 - 2039*.

redesign of the development proposal or, where this is not possible or sufficient, through appropriate mitigation.

Where sensitive development is proposed in areas of existing poor air quality and/or where major development is proposed, including the development types set out in the Council's current guidance (Air Quality and Emissions Mitigation Guidance for Sussex (2021 or as updated)) an air quality assessment will be required.

Development proposals that are likely to have an impact on local air quality, including those in or within relevant Development proposals will need to take into account the Institute of Lighting Professionals guidance and other relevant guidance. proximity to existing or candidate Air Quality Management Areas (AQMA's) or designated nature conservation areas sensitive to changes in air quality, will need to demonstrate that measures and/or mitigation are incorporated into the design to minimise any impacts associated with air quality.

Mitigation measures will need to demonstrate how the proposal would make a positive contribution towards the aims of the Council's Air Quality Action Plan where it is relevant and be consistent with the Council's current guidance as stated above.

Mitigation measures will be secured either through a negotiation on a scheme, or via the use of planning condition and/or planning obligation depending on the scale and nature of the development and its associated impacts on air quality.

Ashdown Forest SPA and SAC

In order to prevent adverse effects on the integrity of the Ashdown Forest SPA and SAC, new development likely to result in increased traffic may be expected to demonstrate how any air quality impacts, including in combination impacts, have been considered in relation to the Ashdown Forest SPA and SAC. Any development likely to have an adverse effect on the integrity of the Ashdown Forest SPA and SAC, either alone or in combination with other development, will be required to demonstrate that adequate measures are put in place to avoid any potential adverse effects on the integrity of the Ashdown Forest SPA and SAC. If any potential adverse effects on the integrity of the Ashdown Forest SPA and SAC cannot be avoided, then mitigation for any potential adverse effects on the integrity of the Ashdown Forest SPA and SAC will be required."

DPN6: Pollution:

"Development must not cause or be adversely affected by pollution or hazards, including air, noise, vibration, light, water, soil, odour, dust or other pollutants, which significantly adversely impact on people, including health and quality of life, and the natural environment, including nature conservation sites. Mitigation measures may need to be implemented for development that is likely to increase levels of pollution or hazards, taking into account any cumulative impacts.

Development must protect and enhance water resources and water quality and take measures to control pollution of the water environment. Development will only be

permitted where it can be demonstrated that it would not result in an unacceptable risk to or adversely affect the quality, quantity, levels, biodiversity and ecology of surface water and groundwater resources including reservoirs. Development may need to include mitigation measures to reduce risks to the water environment and nature-based solutions will be encouraged.

Pollution prevention practices must be adopted during construction activities. Where relevant, development proposals should produce a Construction Environment Management Plan identifying how general and site-specific risks will be managed to avoid environmental harm.

Development proposals will need to take into account the Council's published guidance¹⁵."

3. Baseline Air Quality

Establishing Baseline Conditions

- 3.1 This section establishes baseline air quality conditions in the vicinity of the site through the compilation and review of appropriately sourced background concentration estimates and local monitoring data.
- 3.2 Defra provides estimated background concentrations of the UKAQS pollutants at the UK Air Information Resource (UK-AIR) website¹⁰. These estimates are produced using detailed modelling tools and are presented as concentrations at central 1 km² 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 data from 2021.
- 3.3 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.
- 3.4 Monitoring at roadside and background locations from local air quality monitoring networks is also considered an appropriate source of data for the purposes of describing baseline air quality. To this end, MSDC's automatic and non-automatic monitoring data were reviewed to establish baseline air quality. The most recent available data at the time of writing, from MSDC's *2026 Air Quality Annual Status Report (ASR)*¹¹, have been reviewed and discussed, where relevant.

UK-AIR Background Pollution

- 3.5 UK-AIR predicted annual mean background concentrations of NO₂, PM₁₀ and PM_{2.5} for 2021 to 2030 are presented in Table 3.1. These data were taken from the central grid square location within which the site is located (i.e. UK-AIR Grid Reference: 529500, 116500).

¹⁰ Defra. (2024). *UK-AIR*. Available from: <https://uk-air.defra.gov.uk/data/pcm-data>

¹¹ Mid Sussex District Council. (2026). *2025 Air Quality Annual Status Report (ASR)*.

Table 3.1: Predicted Background Concentrations of Pollutants at the Site

Pollutant	Predicted Annual Mean Background Concentration ($\mu\text{g.m}^{-3}$)										Air Quality Standard Concentration ($\mu\text{g.m}^{-3}$)
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
NO ₂	9.0	8.8	8.5	8.2	8.0	7.7	7.4	7.2	6.9	6.6	40
PM ₁₀	10.6	10.5	10.4	10.3	10.2	10.2	10.1	10.0	9.9	9.8	40
PM _{2.5}	6.4	6.3	6.2	6.1	6.1	6.0	5.9	5.9	5.8	5.7	20

- 3.6 The data in Table 3.1 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 AQSs.
- 3.7 The data show that in the Proposed Development's opening year of 2029, background NO₂, PM₁₀ and PM_{2.5} concentrations are predicted to be well below their respective annual mean AQSs by approximately 83%, 75% and 71%, respectively.
- 3.8 Background annual mean PM_{2.5} concentrations are anticipated to be consistently below the 10 $\mu\text{g.m}^{-3}$ legal target, to be achieved by 2040.
- 3.9 Therefore, annual mean background pollutant concentrations are likely to be well below their respective AQSs and the PM_{2.5} legal target at, and in the vicinity of, the site.
- 3.10 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

- 3.11 Local air quality monitoring is also considered an appropriate source of data for the purposes of describing baseline air quality.
- 3.12 At the time of writing, the most recent ASR¹¹ released by MSDC included local pollutant monitoring data from the year 2024.

Automatic Monitoring

- 3.13 MSDC undertake automatic monitoring at one location within the district. However, this monitoring location is situated a long way from the site – more than 20km away. Therefore, monitoring data from this automatic monitor has not been considered further within this assessment.

Non-Automatic Monitoring

- 3.14 MSDC operates a non-automatic NO₂ diffusion tube monitoring network comprising 25 sites positioned in strategic locations across the district. The most recent annual mean NO₂ data for monitoring locations within 1km of the site are included in Table 3.2, below.

Table 3.2: Monitoring data from Local NO₂ Diffusion Tubes

Monitor	Type	Distance to Site (m)	Annual Mean NO ₂ Concentration (µg.m ⁻³)				
			2021	2022	2023	2024	2025
MSAQ19	R	530	13.5	12.4	11.3	10.3	13.9
MSAQ15	K	640	27.7	27.8	25.4	22.9	22.6
MSAQ10	R	680	31.3	30.7	28.0	26.3	28.0
MSAQ11	R	700	29.6	30.4	27.3	26.1	23.7
MSAQ18	K	720	21.5	17.4	19.0	20.8	20.5
MSAQ13	K	760	30.0	29.1	27.7	26.2	26.7
MSAQ26	S*	870	16.8	16.8	15.3	14.8	15.2

Note: "R" = Roadside; "K" = Kerbside; "S" = Suburban. "*" Denotes that, whilst this monitoring location is labelled as suburban within MSDC's ASR, this monitoring location is situated in setting that can be considered roadside.

- 3.15 The data in Table 3.2 show that all measured annual mean concentrations of NO₂ at all diffusion tube monitoring locations within 1km of the site were below the 40 µg.m⁻³ AQS between 2021 and 2025.
- 3.16 Diffusion tube MSAQ19 is the closest diffusion tube to the site, located in a roadside setting adjacent to the B2116 Hurst Road, which recorded an annual mean NO₂ concentration of 13.9 µg.m⁻³ in 2025, which is 65.3% below the long-term AQS.
- 3.17 Diffusion tube MSAQ10 is located in a roadside position with respect to the B2116 Keymer Road, where the B2116 adjoins with the A273 London Road. Diffusion tube MSAQ10 recorded the highest annual mean NO₂ concentration in 2025 (28.0 µg.m⁻³), which is 30.0% below the long-term AQS.
- 3.18 From 2021 to 2025, there is a general decline in annual mean NO₂ concentrations at most monitors within 1km of the site, which follows the national trend for a general improvement in air quality with time. Monitored annual mean NO₂ concentrations recorded at diffusion tube MSAQ19 are generally consistent from 2021 to 2025.

Summary of Baseline Air Quality

- 3.19 The UK-AIR background projections and local monitoring data indicate that annual mean concentrations of NO₂, PM₁₀ and PM_{2.5} are well below their respective long-term AQSs and the 2040-based legal target for PM_{2.5}, in the area around and at the site.
- 3.20 Both UK-AIR and local monitoring data show a general decline in pollutant concentrations over recent years, with the reasonable exception of data that can be considered to be abnormal, due to the impacts of Covid-19 lockdowns.

4. Assessment Methodology

Guidance

- 4.1 Defra's *Local Air Quality Management Technical Guidance* (LAQM.TG(22))¹² was followed in carrying out the assessment.
- 4.2 The latest Environmental Protection UK (EPUK) & Institute of Air Quality Management (IAQM) guidance on '*Planning for Air Quality*'¹³ was also referred to throughout the assessment. The criteria used to describe impacts were derived from this guidance.
- 4.3 Guidance published by the IAQM on the *Assessment of Dust from Demolition and Construction*¹⁴ was also used to assess the risk of dust emissions during the construction phase of the Proposed Development. The Greater London Authority's (GLA) Supplementary Planning Guidance on the control of dust from construction¹⁵ has also been referred to, which is considered best practice guidance for London and the wider UK. It details a number of mitigation measures that should be adopted to minimise adverse impacts from dusts and fine particles.
- 4.4 MSDC is a member of the Sussex-Air partnership, and so the *Air Quality and Emissions Mitigation Guidance for Sussex*¹⁶ (AQEMGFS) has been followed in the emissions mitigation assessment.

Construction Phase

- 4.5 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.
- 4.6 The IAQM's guidance to assess the impacts of construction dust emissions on human and ecological receptors has been followed in carrying out this air quality assessment. The guidance suggests that where a receptor is located within 250m (50m for statutory ecological receptors) of a site boundary and / or 50m of a route used by construction vehicles, up to 250m from the site entrance, a dust assessment should be undertaken. 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 250m of the site boundary.

12 Defra. (2022). *Local Air Quality Management Technical Guidance* (LAQM.TG(22)).

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

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

15 Greater London Authority. (2014). *The Control of Dust and Emissions During Construction and Demolition*.

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

- 4.7 The Multi Agency Geographic Information for the Countryside (MAGIC) website¹⁷, which incorporates Natural England's interactive maps, has been reviewed to identify whether any statutory ecological sensitive 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

- 4.8 The IAQM guidance suggests that Demolition, Earthworks, Construction and Trackout should all be assessed individually to determine the overall significance of the construction phase.
- 4.9 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. 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.
- 4.10 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.
- 4.11 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."*

- 4.12 Based on these factors, the area is categorised as being of 'Low', 'Medium' or 'High' sensitivity.

17 Natural England and MAGIC partnership organisations. *Multi Agency Geographic Information for the Countryside*. [Accessed July 2026].

- 4.13 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.
- 4.14 Combustion exhaust gases from diesel-powered plant and construction vehicles accessing the site will also be released. However, the volumes and periods over which these releases will occur are unlikely to result in any long-term impacts on local air quality and therefore this has been scoped out of the assessment.

Operational Phase

Pollutant Sources

- 4.15 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 vehicles are oxides of nitrogen (NO_2/NO_x) and particulate matter (PM_{10} and $\text{PM}_{2.5}$). Releases of carbon monoxide (CO) and some volatile hydrocarbons (e.g. benzene and 1,3-butadiene) are of less significance and are not assessed further in this report.
- 4.16 As it is elevated concentrations of NO_2 and PM_{10} 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. $\text{PM}_{2.5}$, which is another fraction of particulate matter, has also been considered.
- 4.17 Other (background) air pollutant sources contribute to local pollution. These include emissions from domestic, commercial, industrial, marine, or transboundary emissions/sources. These emissions are accounted for in this assessment within the background estimates.
- 4.18 The NO_2 , PM_{10} and $\text{PM}_{2.5}$ background concentrations referred to in this assessment are based on UK-AIR predictions for the UK-AIR grid square within which the site is situated for 2025, which is the same year as the latest available monitoring data. A summary of the background pollutant concentrations used in this assessment are provided in Table 4.1, below.

Table 4.1: Background Pollutant Concentrations used in this Assessment

Pollutant	Concentration ($\mu\text{g.m}^{-3}$)	Data Source
NO_2	8.0	UK-AIR Grid Square (529500, 116500)
PM_{10}	10.2	
$\text{PM}_{2.5}$	6.1	
NO_2	8.1	UK-AIR Grid Square (529500, 115500)
PM_{10}	10.0	

Pollutant	Concentration ($\mu\text{g.m}^{-3}$)	Data Source
PM _{2.5}	6.0	UK-AIR Grid Square (528500, 115500)
NO ₂	7.9	
PM ₁₀	10.0	
PM _{2.5}	5.9	
NO ₂	8.2	UK-AIR Grid Square (528500, 116500)

Roads Assessment

- 4.19 The latest EPUK & IAQM planning guidance¹³ provides indicative thresholds for changes in traffic flows which would require a detailed air quality assessment. Within an AQMA, these are a change in 24-hour annual average daily traffic (AADT) flows of >100 light duty vehicles (LDVs) and / or >25 heavy duty vehicles (HDVs) on any specific road link within an AQMA, or >500 LDVs and / or >100 HDVs on any specific road link outside of an AQMA. Changes below these thresholds can be reasonably considered to have an insignificant impact on air quality.
- 4.20 Traffic data provided by CampbellReith, the project transport consultants, state that the Proposed Development is anticipated to generate a total AADT flow of 832 (comprising 826 LDV and 6 HDV flows), once operational. As the predicted traffic generation from the development is above the threshold criteria outlined above, detailed pollutant dispersion modelling is necessary.
- 4.21 A detailed dispersion assessment has therefore been undertaken to evaluate the impacts of the Proposed Development on local sensitive receptors.
- 4.22 Traffic data provided by CampbellReith were used to assess pollutant concentrations at existing receptor locations in 2029, the year of the Proposed Development becoming operational.
- 4.23 The predicted trips from the Proposed Development, once operational, have been included within the modelled roads assessment.

Model Specification

- 4.24 The model used was ADMS-Roads (version 5.1.0.2), which is produced by Cambridge Environmental Research Consultants (CERC) Limited and has been validated and approved by Defra for use as an assessment tool for calculating the dispersion of pollutants from traffic on UK roads. The latest Defra Emissions Factor Toolkit (EFT)¹⁸ was used within the model to estimate vehicle emissions. Details on model inputs are provided in Appendix A.

¹⁸ Defra. (2026). *Emissions Factor Toolkit version 14.2*.

Meteorological Data

- 4.25 Detailed, hourly sequential, meteorological data are used by the model to determine pollutant transportation and levels of dilution by the wind and vertical air movements. Meteorological data used in the model were obtained from the Charlwood meteorological site, as it was considered to provide the most representative data of similar conditions to the site. The meteorological data used for this assessment were from 2025, for which air quality monitoring and traffic data were also available for model verification purposes. The surface roughness applied to the model for the study area was 0.5m (representative of parkland / open suburbia), whilst a factor of 0.3m was applied to the meteorological site (representative of parkland / open suburbia and agricultural areas).

Model Verification

- 4.26 It is recommended, following guidance set out in LAQM.TG(22)¹², that the model results be compared with measured data to determine whether they might need adjusting to reflect local air quality more accurately. This process is known as verification and reduces the uncertainty associated with local effects on pollution dispersion and allows the model results to be more site-specific.
- 4.27 A verification study has been undertaken using MSDC air quality monitoring data from 2025 across the nearby area. Full details of this study are included in Appendix B.
- 4.28 The model was found to be under-predicting NO₂ concentrations at all of the local monitoring sites. As the under-predicted concentrations were consistent, it was decided to proceed with adjustment of the model in order to ensure more conservative and locally accurate results. To this end, an adjustment factor of **1.56** was applied to the model results.
- 4.29 Root Mean Square Error (RMSE) is used to define the average error or uncertainty of the model. According to LAQM.TG(22)¹², the RMSE is acceptable where it is within 25% of the AQS. The model verification process calculated a post-adjusted RMSE of 1.2 µg.m⁻³, which equates to 3.0% of the annual mean AQS for NO₂ and is therefore considered to be suitable, being within the 'ideal' 10% range.

Modelled Sensitive Receptors

- 4.30 Model receptors were positioned at the façade of existing residential units (referenced as E1-E4), adjacent to College Lane, south of the site access, where the Proposed Development's generated traffic is anticipated to result in an AADT increase of >500 LDVs. These receptor locations are, therefore, considered to represent locations of maximum exposure to road-source pollution, generated by the Proposed Development. The receptors were modelled at a height of 1.5m ("breathing height").
- 4.31 The locations of sensitive receptors are displayed in Figure 3 and are included in Table 4.2, below.

Table 4.2: Modelled Receptors

Receptor		Height (m)	UK Grid Reference	
ID	Details		X	Y
E1	Existing Residential Dwelling	1.5	529030.0	116024.1
E2	Existing Residential Dwelling	1.5	529020.5	116004.5
E3	Existing Residential Dwelling	1.5	529005.0	115977.2
E4	Existing Residential Dwelling	1.5	528986.8	115944.6

Model Uncertainty

- 4.32 There are a number of inherent uncertainties associated with the modelling process, including:
- 🌱 Model uncertainty – due to model formulations;
 - 🌱 Data uncertainty – due to inaccuracies in input data, including emissions estimates, background estimates and meteorology; and
 - 🌱 Variability – randomness of measurements used.
- 4.33 Using a validated air quality model such as ADMS-Roads, combined with performing model verification, accounts for much of this uncertainty. In addition, the most detailed available input data have been used and reviewed to ensure accuracy.
- 4.34 Defra's latest Emissions Factors Toolkit¹⁸ for road transport emissions provides forecasts of NO_x, PM₁₀ and PM_{2.5} emissions up to 2050. This is widely used as an input for dispersion models such as ADMS-Roads to estimate future pollutant concentrations close to/at new developments.
- 4.35 The latest version of Defra's EFT (version 14.2) was released in September 2026 and is expected to provide a far more reasonable match for real world emissions in the current UK fleet than previous versions.
- 4.36 Background pollutant concentrations are predicted to continuously decline up to 2030, as evidenced by the decreasing trends in background pollutant concentrations displayed in Table 3.1. This assessment exclusively uses 2024 background concentrations within the model, which provides a conservative approach by assuming there will be no future improvement in background pollutant concentrations beyond 2025. Furthermore, for added conservatism, vehicle emission factors for 2025 were used to predict pollutant concentrations in the Proposed Development's projected opening year of 2029, thereby not accounting for projected improvements in vehicle emissions.

Emission Mitigation Assessment

- 4.37 The Sussex-air Partnership's AQEMGFS¹⁶ advocates that an Emissions Mitigation Assessment should be undertaken to demonstrate how air quality impacts from development can be minimised.
- 4.38 The purpose of an Emissions Mitigation Assessment is to determine an appropriate level of mitigation required from a development. An Emissions Mitigation Assessment sets out a methodology to assess the impact of a development's associated emissions on air quality and provides an approach to mitigating emissions for developments, even those which have no significant impact on air quality.
- 4.39 As the Proposed Development is classified as 'Major' with reference to *The Town and Country Planning (Development Management Procedure) (England) Order 2015*¹⁹ (i.e. where the number of dwellinghouses to be provided is 10 or more), an Emissions Mitigation Assessment with an emissions cost calculation is required. The emissions cost calculation was undertaken following the AQEMGFS¹⁶ and Defra's Damage Cost guidance²⁰. The latest Defra air quality Damage Cost Appraisal Toolkit²¹ was also utilised within the assessment.

Emissions Cost Calculation

- 4.40 The emissions calculation utilised the latest Defra Emission Factor Toolkit (EFT) (version 14.2)¹⁸ to determine the total transport related emissions (NO_x and PM_{2.5}) that would be generated by the Proposed Development.
- 4.41 Defra provides 'damage costs'²⁰, 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 and are then combined with the forecasted emissions changes to provide an approximate valuation of the cost (or benefit) to society caused by development.
- 4.42 Defra's Appraisal Toolkit²¹, which incorporates the latest damage cost values, was used in the calculation. The principle of the calculation is summarised in the equation below:
- $$\text{EFT output} \times \text{Damage costs} \times 5 \text{ years} = 5 \text{ year exposure cost value (in £)}$$
- 4.43 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.

19 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>

20 Defra. (2026). *Air Quality Appraisal: Damage Cost Guidance*.

21 Defra. (2026). *Air Quality Damage Cost Appraisal Toolkit*.

- 4.44 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.

5. Construction Phase

- 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 It is understood that there are no anticipated demolition works, in order to make way for the Proposed Development. Therefore, the overall dust emission magnitude for the demolition phase is defined as *Negligible*, and will not be considered further within this assessment.

Earthworks

- 5.4 Where the total site area is between 18,000m² and 110,000m², the potential dust emission magnitude for the demolition phase is defined as *Medium* according to the IAQM guidance¹⁴.
- 5.5 The total site area is approximately 70,000m², which can be classified as *Medium*, with reference to the IAQM guidance.
- 5.6 It is anticipated that less than 5 heavy earth moving vehicles would operate on-site at any one time during the Proposed Development's construction, which would fall within the IAQM's *Small* dust emission magnitude category.
- 5.7 It is currently unknown whether there is any land contamination at the site. It should be noted that that detection and management of contaminated land is not assessed within this AQA: this should be addressed by the project's appointed land contamination expert.
- 5.8 Bunds will be formed on-site; however, they will be less than 4m in height.
- 5.9 Based on the above, known factors, the overall dust emission magnitude for the earthworks phase is considered to be *Medium*, with reference to the IAQM guidance¹⁴.

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. Piling is expected on site during the construction phase.
- 5.11 The Proposed Development will utilise traditional building materials (brick and block and timber frames).
- 5.12 Upon completion, the Proposed Development would comprise new buildings with a total volume from 12,000m³ to 75,000m³, falling within the IAQM's *Medium* dust emission magnitude category.
- 5.13 Considering the above, whereby construction activities and materials are understood to have a low potential for dust generation but there is a *Large* volume of buildings to be constructed, the overall dust emission magnitude for the construction phase is considered to be *Medium* with reference to the IAQM guidance¹⁴.

Trackout

- 5.14 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.
- 5.15 The site will be accessed via College Lane, west of the site and there will be the use of unpaved roads on-site, exceeding 100m in length.
- 5.16 It is anticipated that fewer than 20 HDVs would access the site each day during construction, falling into the IAQM's *Small* dust emissions category.
- 5.17 Based on the above, it is understood that there will be a sizeable unpaved area utilised by HDVs; however, there will be a *Small* number of vehicles operating on this land each day. Therefore, the dust emission magnitude for the trackout phase can be described as *Medium* with reference to the IAQM guidance¹⁴.

Emission Magnitude Summary

- 5.18 A summary of the dust emission magnitude as a result of the activities of earthworks, construction and trackout, as specified in the IAQM guidance and discussed above, are listed in Table 5.1 below.

Table 5.1: Dust Emission Magnitude for the Construction Activities

Activity	Dust Emission Magnitude
Earthworks	Medium
Construction	Medium

Activity	Dust Emission Magnitude
Trackout	Medium

Sensitivity of the Area

- 5.19 Having established the 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 and 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	3	Adjacent residential dwellings at College Lane
<50	22	Surrounding residential dwellings
<100	Approx. 60	Residential dwellings in the local area
<250	>180	Residential dwellings in the local area

- 5.24 As presented in Table 5.2 and shown in Figure 2, there are less than 10 *High Sensitivity* receptors within 20m of the site and less 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.

- 5.25 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 that there are fewer than 100 *High Sensitivity* receptors within 20m of the site. As there are less than 100 *High Sensitivity* human receptors within 20m of the site, the sensitivity of the area to human health impacts is defined as *Low*.
- 5.26 Review of the MAGIC website¹⁷, 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 Wolstonbury Hill Site of Special Scientific Interest (SSSI), located approximately 1.7km south of the 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

- 5.27 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
Earthworks	Medium Risk	Low Risk	Negligible Risk
Construction	Medium Risk	Low Risk	Negligible Risk
Trackout	Medium Risk	Low Risk	Negligible Risk

- 5.28 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

- 5.29 The GLA guidance¹⁵ 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 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.
- 5.31 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 Framework⁶ by directly and appropriately mitigating the potentially unacceptable impacts of dust generated during construction at nearby sensitive locations.

6. Operational Phase

- 6.1 Results from the ADMS-Roads assessment for the Proposed Development are presented below. Modelled receptor points and modelled road links are displayed in Figure 3, with further details of the receptor points modelled in this assessment provided in Table 4.2.

Air Quality Impacts at Existing Local Receptors

- 6.2 As the Proposed Development is expected to generate volumes of traffic in excess of the traffic generation thresholds prescribed by the EPUK & IAQM guidance¹³ on roads in the surrounding area of the site, namely College Lane, south of the site access, it was necessary to assess the impact of traffic generated by the Proposed Development on existing sensitive receptor locations adjacent to the effected roads.

Nitrogen dioxide (NO₂)

- 6.3 Modelled annual mean NO₂ concentrations at local existing receptors, located at the closest façades of existing sensitive uses to the adjacent road network, in the areas surrounding the site, are shown in Table 6.1, below.

Table 6.1: Predicted Annual Mean Concentrations of NO₂ at Local Receptors

Receptor	Annual Mean NO ₂ Concentration (µg.m ⁻³)			Changes due to Proposed Development		
	2025 Baseline	2029 Without	2029 With	µg.m ⁻³	As a % of the AQS	EPUK & IAQM Significance
E1	9.76	9.81	10.12	0.31	0.77	Negligible
E2	9.89	9.95	10.26	0.31	0.78	Negligible
E3	10.11	10.17	10.43	0.26	0.65	Negligible
E4	10.84	10.91	11.16	0.25	0.63	Negligible

Note: Concentrations are presented to two decimal places. Any discrepancies are due to rounding.

- 6.4 The data in Table 6.1 show that traffic expected to be generated by the Proposed Development is predicted to have a *Negligible* impact on annual mean NO₂ concentrations at all existing modelled receptors, with reference to the EPUK & IAQM impact descriptors.
- 6.5 The results also show that modelled annual mean NO₂ concentrations are predicted to be below the 40 µg.m⁻³ annual mean AQS at all modelled receptors across all modelled scenarios.
- 6.6 The highest predicted annual mean NO₂ concentration in the 2029 'with' scenario is 11.16 µg.m⁻³, predicted at receptor E4, which represents a residential receptor at College Lane, approximately 25m north of the B2116 Hassocks Road. This is below the annual mean AQS by approximately 72.1%.

- 6.7 Receptor E2 presents the largest modelled increase in annual mean NO₂ concentration as a result of the operation of the Proposed Development; which is 0.78% with respect to the 40 µg.m⁻³ AQS. The change in annual mean NO₂ concentration predicted at this receptor is considered to be *Negligible* with reference to the EPUK and IAQM impact descriptors, as displayed in Appendix A. Receptors E2 is also representative of a residential receptor at College Lane.
- 6.8 The LAQM.TG(22)¹² guidance states that where annual mean NO₂ concentrations are below 60 µg.m⁻³, the short-term AQS for NO₂ (200 µg.m⁻³ not to be exceeded more than 18 times per year) is not likely to be exceeded. The data in Table 6.1 show that modelled annual mean NO₂ concentrations are well below this threshold at all assessed receptors and, therefore, it is expected that the hourly AQS for NO₂ will not be exceeded at the modelled receptor locations.

Particulate Matter (PM₁₀ and PM_{2.5})

- 6.9 Modelled results for annual mean PM₁₀ concentrations at local receptor locations are shown in Table 6.2, below.

Table 6.2: Predicted Annual Mean Concentrations of PM₁₀ at Local Receptors

Receptor	Annual Mean PM ₁₀ Concentration (µg.m ⁻³)			Changes due to Proposed Development		
	2025 Baseline	2029 Without	2029 With	µg.m ⁻³	As a % of the AQS	EPUK & IAQM Significance
E1	10.79	10.81	10.91	0.10	0.25	Negligible
E2	10.83	10.84	10.94	0.10	0.25	Negligible
E3	10.64	10.66	10.74	0.09	0.21	Negligible
E4	10.85	10.87	10.95	0.08	0.19	Negligible

Note: Concentrations are presented to two decimal places. Any discrepancies are due to rounding.

- 6.10 The data in Table 6.2 show that traffic expected to be generated by the Proposed Development is predicted to have a *Negligible* impact on annual mean PM₁₀ concentrations at all existing modelled receptors, with reference to the EPUK & IAQM impact descriptors.
- 6.11 Furthermore, annual mean PM₁₀ concentrations are predicted to be well below the 40 µg.m⁻³ annual mean AQS at all existing receptors across all modelled scenarios.
- 6.12 The highest predicted annual mean PM₁₀ concentration in the 2029 'with' scenario is 10.95 µg.m⁻³, predicted at receptor E4, again, which is below the annual mean AQS by approximately 72.6%.
- 6.13 The largest increase in annual mean PM₁₀ concentration predicted as a result of the operation of the Proposed Development was 0.25% with respect to the 40 µg.m⁻³ AQS, at receptors E1 and E2. Receptors E1 is also representative of a residential receptor at College Lane.
- 6.14 For PM₁₀, the following equation can be used to derive the number of days that the daily mean AQS of 50 µg.m⁻³ is likely to be exceeded (35 exceedances of the daily mean AQS are allowed per year):

$$\text{No. 24 hour exceedances} = -18.5 + 0.00145 \times \text{annual mean}^3 + \left(\frac{206}{\text{annual mean}} \right)$$

- 6.15 Using this equation, an annual mean concentration of approximately $32 \mu\text{g.m}^{-3}$ or above may indicate an exceedance of the short-term (daily mean) AQS. The data in Table 6.2 show that the highest predicted annual mean PM_{10} concentration is below this threshold and, therefore, it is unlikely that the short-term AQS would be exceeded at any of the assessed locations.
- 6.16 Modelled results for annual mean $\text{PM}_{2.5}$ concentrations at local receptor locations are shown in Table 6.3, below.

Table 6.3: Predicted Annual Mean Concentrations of $\text{PM}_{2.5}$ at Local Receptors

Receptor	Annual Mean $\text{PM}_{2.5}$ Concentration ($\mu\text{g.m}^{-3}$)			Changes due to Proposed Development		
	2025 Baseline	2029 Without	2029 With	$\mu\text{g.m}^{-3}$	As a % of the AQS	EPUK & IAQM Significance
E1	6.43	6.44	6.50	0.07	0.33	Negligible
E2	6.45	6.46	6.53	0.07	0.33	Negligible
E3	6.39	6.40	6.46	0.06	0.28	Negligible
E4	6.47	6.49	6.54	0.05	0.26	Negligible

Note: Concentrations are presented to two decimal places. Any discrepancies are due to rounding.

- 6.17 The data in Table 6.3 show that traffic expected to be generated by the Proposed Development is predicted to have a *Negligible* impact on annual mean $\text{PM}_{2.5}$ concentrations at all existing modelled receptors, with reference to the EPUK & IAQM impact descriptors.
- 6.18 Annual mean $\text{PM}_{2.5}$ concentrations are also predicted to be below the $20 \mu\text{g.m}^{-3}$ AQS and the $10 \mu\text{g.m}^{-3}$ future legal target, at all existing receptors, across all scenarios.
- 6.19 The highest predicted annual mean $\text{PM}_{2.5}$ concentration in the 2029 'with' scenario is $6.54 \mu\text{g.m}^{-3}$, predicted at receptor E4, again, which is below the annual mean AQS by approximately 67.3% and below the future legal limit by 34.6%.
- 6.20 The largest increase in annual mean $\text{PM}_{2.5}$ concentration predicted as a result of the operation of the Proposed Development was 0.33% with respect to the $20 \mu\text{g.m}^{-3}$ AQS, at receptors E2 and E1.

Summary of Impacts at Existing Local Receptors

- 6.21 Traffic expected to be generated by the Proposed Development is predicted to have a *Negligible* impact on annual mean NO_2 , PM_{10} and $\text{PM}_{2.5}$ concentrations at all existing modelled receptors, with reference to the EPUK & IAQM impact descriptors.

- 6.22 The highest annual mean NO₂, PM₁₀ and PM_{2.5} concentrations were consistently modelled at receptor E4 and the highest increases in annual mean NO₂, PM₁₀ and PM_{2.5} concentrations, as a result of the Proposed Development were consistently modelled at receptors E1 and E2.

Site Suitability

- 6.23 Proposed receptor locations at the site are anticipated to be located more than 45m from College Lane and more than 100m from the B2116 Wickham Hill and, therefore, are set in an urban background setting, with respect to these roads, in accordance with the LAQM.TG(22) guidance¹². Considering this, it is highly probable that proposed receptors will be exposed to annual mean NO₂, PM₁₀ and PM_{2.5} concentrations that are below roadside concentrations in the local area, and similar to monitored / modelled urban background concentrations, in the local area, also in accordance with the LAQM.TG(22) guidance¹².
- 6.24 UK-AIR predicted annual mean NO₂, PM₁₀ and PM_{2.5} concentrations at the site are presented within Table 3.1 of this assessment, which are all well below their respective annual mean AQSs, indicative thresholds for exceedance of the short-term AQSs for NO₂ and PM₁₀, and below the future legal target for PM_{2.5}.
- 6.25 MSDC did not undertake any urban background monitoring for NO₂, PM₁₀ and PM_{2.5} in the vicinity of the site. However, roadside and kerbside monitoring of NO₂ in the vicinity of the site, as well as annual mean NO₂, PM₁₀ and PM_{2.5} modelled roadside concentrations at existing receptors E1 – E4 are anticipated to be well below their respective annual mean AQSs, indicative thresholds for exceedance of the short-term AQSs, and the future PM_{2.5} target at the site.

Summary of Site Suitability

- 6.26 Overall, there are no predicted exceedances of the long-term or short-term AQSs for NO₂, PM₁₀ or PM_{2.5} at the site. Annual mean PM_{2.5} concentrations are also predicted to be below the future legal limit, to be achieved by 2040.
- 6.27 Therefore, the site can be considered suitable for the proposed sensitive (residential) end use.

Policy Context

- 6.28 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 NPPF⁶ and the national PPG⁷. It is also anticipated that the 2040 legal target for PM_{2.5}, outlined by Defra's *Environmental Improvement Plan 2025*⁴, will likely be achieved by the projected opening year of 2029.

- 6.29 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 also expected that the Proposed Development will comply with MSDC's local Planning Policy *DP29: Noise, Air and Light Pollution*, where air quality is directly referenced. Based on the same rationale, the Proposed Development is also anticipated to comply with MSDC's draft local Planning Policy *DPN9: Air Quality* and *DPN6: Pollution*, except for aspects that are specific to Emissions Mitigation Assessments, which is discussed within Section 7, below.
- 6.30 Therefore, the Proposed Development is anticipated to be compliant with relevant national and local policies, where directly applicable to air quality, with regards to site suitability and the development's impact on local air quality.

7. Emissions Mitigation Assessment

Emission cost calculation

7.1 Following the April 2026 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 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 2029, so the five-year period used in the calculation runs from 2029 to 2033, inclusive.

Table 7.1: Calculation Inputs

Input	Value	Unit	Source/guidance
Trip Length	10	km	AQEMGFS
Development Traffic Flow	832 (6 HDVs)	AADT	CampbellReith
EFT Road Type	Urban (not London)	-	EFT
EFT Year	2029 – 2033	-	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 toolkit²¹ 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

	2029	2030	2031	2032	2033
NO _x increase (tonnes)	0.3255	0.2726	0.2271	0.1884	0.1559
Central Damage cost (NO _x)	£11,824	£11,824	£11,824	£11,824	£11,824
Adjusted Damage cost (NO _x)	£3,848	£3,176	£2,607	£2,130	£3,848
Total	£13,498				

Table 7.3: Emission Cost Calculation for PM_{2.5}

	2029	2030	2031	2032	2033
PM _{2.5} increase (tonnes)	0.0531	0.0519	0.0509	0.0501	0.0493
Central Damage cost (PM _{2.5})	£101,304	£101,304	£101,304	£101,304	£101,304
Adjusted Damage cost (PM _{2.5})	£5,381	£5,182	£5,007	£4,849	£4,707
Total	£25,127				

7.6 The total damage costs are summarised as follows:

NO_x emission 'damage' cost = £13,498 +

PM_{2.5} emission 'damage' cost = £25,127

TOTAL (cost, £) = £38,625

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 It is understood that all parking will be provided with EV charging infrastructure, in line with the requirements of the latest Part S Building Regulations²².

7.9 In addition to the provision of EV charging infrastructure, the developer is committed to providing the following mitigation:

-  A travel plan and welcome pack, including mechanisms to encourage uptake of low emissions modes of transportation;
-  A welcome pack available to all new occupants to encourage the use of sustainable transport modes;
-  "Cable to Property" broadband provision to enable working from home;

²² The Building Regulations 2010. (2022). *Infrastructure for the Charging of Electric Vehicles*.

- Awareness will be raised on national databases, such as LiftShare, to join existing car-sharing schemes and promote sustainable methods of transport;
 - Cycle storage and improvements/connections to cycle paths and the local cycle network;
 - Using green infrastructure, in particular trees to absorb dust and other pollutants; and
 - The Proposed Development will utilise Air Source Heat Pumps (ASHP) to meet the Proposed Development's energy demands.
- 7.10 It is anticipated that the mitigation package proposed would offset the Proposed Development's calculated 'emissions cost' and, therefore, minimise potential incremental air quality impacts arising from the Proposed Development's operation.
- 7.11 It should be noted that, if the above mitigation package does not at least equate to the above calculated 'emissions cost', additional mitigation should be employed to fully off-set this cost.

Policy Context

- 7.12 Considering the above, the Proposed Development is anticipated to meet the requirements of the AQEMGFS guidance¹⁶, with regards to air pollution mitigation, so long as the mitigation package fully off-sets the 'emissions cost', calculated above.
- 7.13 Proposed EV charging infrastructure is also anticipated to be compliant with relevant national and local policy.
- 7.14 The Proposed Development is also anticipated to comply with MSDC's local policies, with regards to Emission Mitigation Assessments, included within MSDC's local plan and draft local plan, directly referenced within Local Policy DPN6: *Air Quality* of the draft local plan.

8. Conclusions

- 8.1 UK-AIR background concentrations and local air quality monitoring results from the local area suggest that air quality within the vicinity of the site is generally good, with background and roadside pollution concentrations across the site likely being below relevant UK Air Quality Standard concentrations.
- 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 adversely impact local air quality or to introduce new receptors into an area of poor air quality.
- 8.4 To mitigate future emissions, the Proposed Development will include mitigation measures, as listed in Section 7.9 of this report. Noting the suite of mitigation measures proposed, it is anticipated that these would provide a sufficient level of air quality mitigation to offset the development's calculated 'emissions cost'.
- 8.5 The Proposed Development is expected to 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 Plan

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Figure 2: Construction Phase

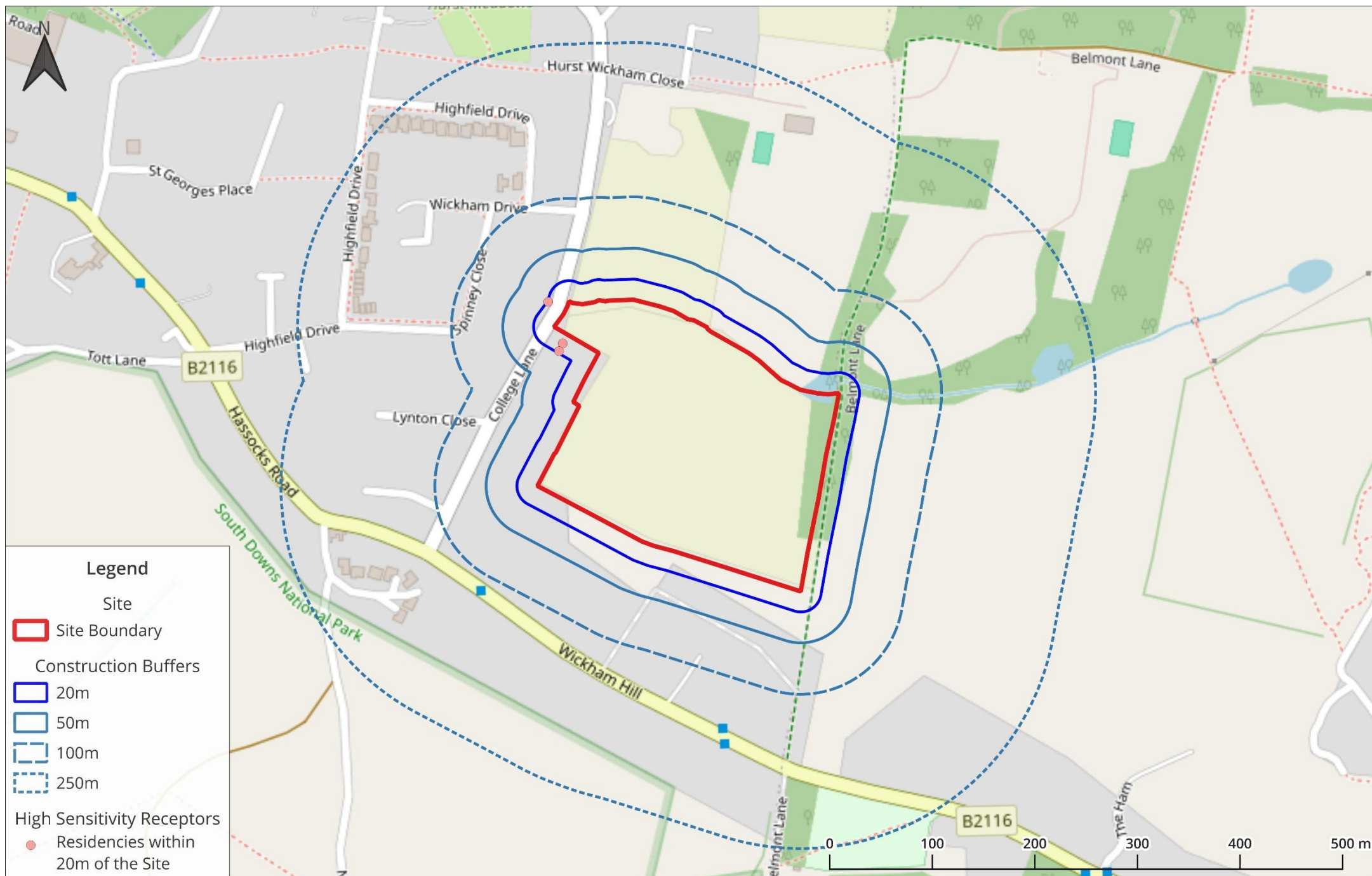


Figure 2: Construction Phase

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Figure 3: Modelled Roads and Receptors

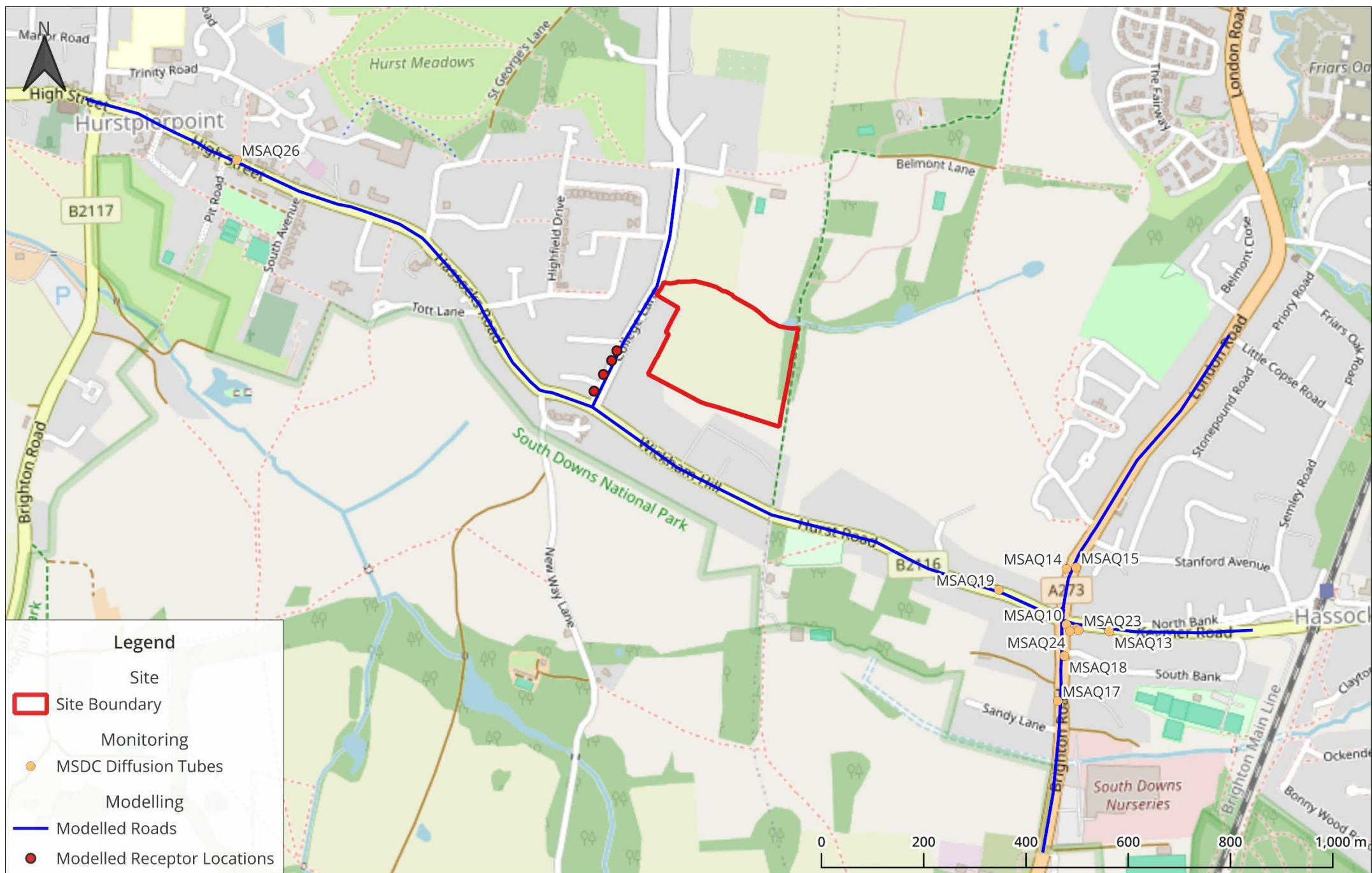
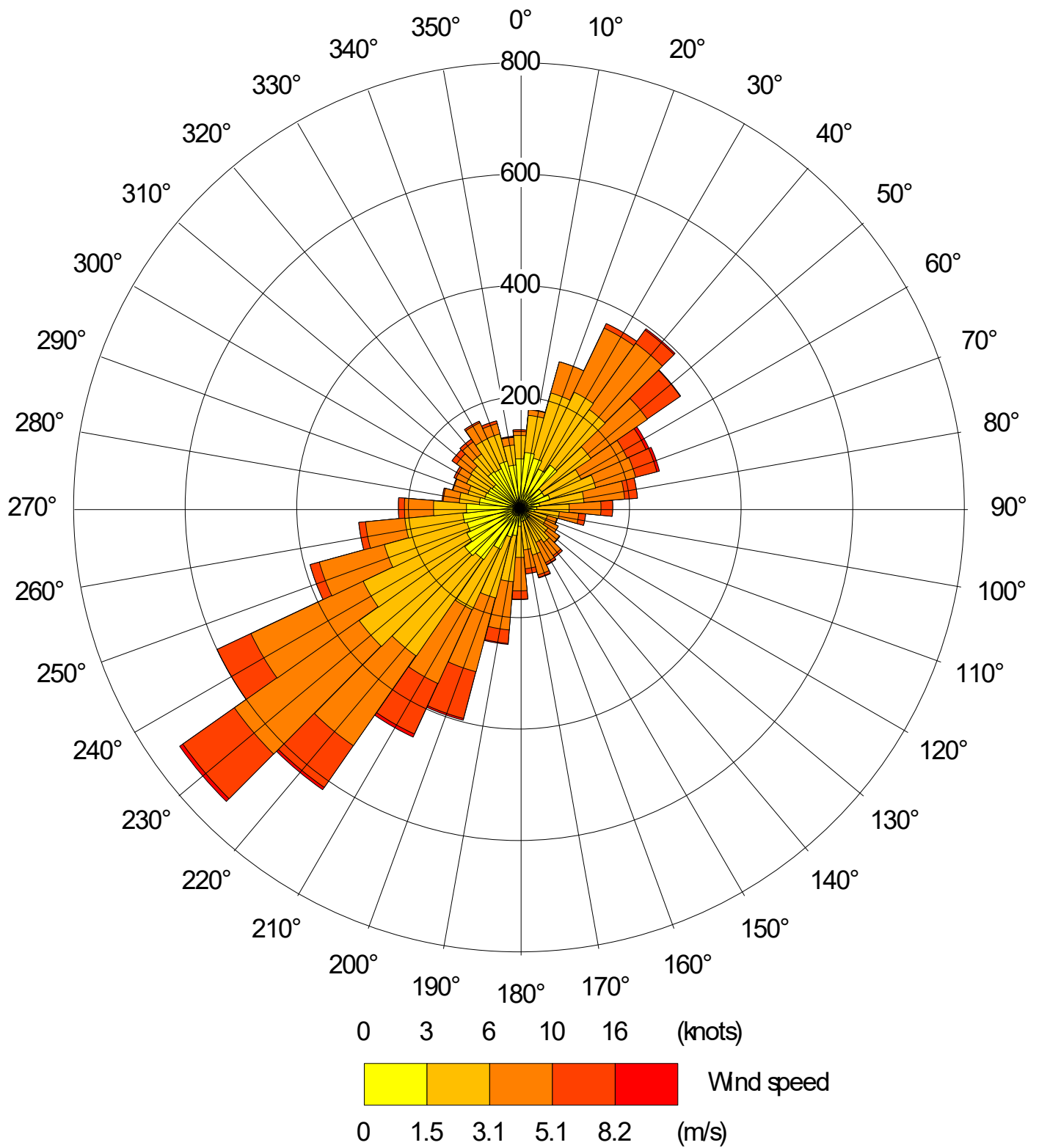


Figure 3: Modelled Roads and Receptors

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Figure 4: Wind Rose for Charlwood (2025)



Appendix A: Model Input Data

Model Inputs

Model inputs are provided below in Table A.1. These data relate to ADMS Roads inputs for model verification and the assessment modelling. A 2025 Emission Year was used for the model verification (2025) and the opening year of the development (2029) for conservative purposes.

Table A.1: Model Verification & Modelled Operational Inputs

Inputs	
Dataset	UK EFT v14.2
Emission Year	2025
Road Type	Urban (Not London)

Traffic Data

Traffic data used within the assessment were provided by CampbellReith (CR), the transport consultants assigned to the project. The data analysed included a baseline 2025 (verification year) scenario and two modelled scenarios for 2029 (development opening year), one with and one without the development generated traffic.

The speeds of traffic on roads varied based on the speed limit of the modelled road and the assumption that traffic generally slows when approaching a junction / in congested areas.

The AADT data used in the ADMS-Roads assessment are included in Table A.2, below.

Table A.2: Traffic Inputs for the ADMS-Roads Assessment

Road	Source	2025 Model Verification & Baseline		2029 Without Development		2029 With Development	
		AADT	% HDV	AADT	% HDV	AADT	% HDV
College Lane (North of Site Access)	CR	2549	4.05	2621	4.05	2713	3.92
College Lane (South of Site Access)	CR	2549	4.05	2621	4.05	3336	3.36
B2116 High Street	CR	6648	0.78	-	-	-	-
B2116 Hassocks Road	CR	7071	12.42	7269	12.42	7661	11.78
B2116 Wickham Hill	CR	8659	11.78	8902	11.78	9226	11.43
B2116 Hurst Road	CR	9233	0.56	9495	0.56	9872	0.60
B2116 Keymer Road	CR	11402	2.15	-	-	-	-

Road	Source	2025 Model Verification & Baseline		2029 Without Development		2029 With Development	
		AADT	% HDV	AADT	% HDV	AADT	% HDV
A273 London Road	CR	17303	2.39	-	-	-	-
A273 Brighton Road	CR	14656	3.26	-	-	-	-

Appendix B: Model Verification Study

Model Verification

Model verification studies are undertaken in order to check the performance of dispersion models and, where modelled concentrations are significantly different to monitored concentrations, a factor can be established by which the modelled results can be adjusted in order to improve their reliability. The model verification process is detailed in LAQM.TG(22)¹².

Model verification can only be undertaken where there are sufficient roadside monitoring data in the vicinity of the subject scheme being assessed. LAQM.TG(22) recommends that a combination of automatic and diffusion tube monitoring data are used; although this may be limited by data availability. Three monitoring locations with appropriate traffic data were selected for this model verification study.

These diffusion tubes were selected based on their proximity to the site and linked major roads, as these were considered to best represent conditions similar to that of the site's location. Table B.1 compares monitored and modelled NO₂ concentrations at the five monitoring locations.

Table B.1: Monitored and Modelled Concentrations of NO₂ at Local Monitoring Sites

Monitor	Type	Annual Mean NO ₂ Concentration (µg.m ⁻³)		
		Monitored	Modelled	% Difference
MSAQ 10	R	28.0	21.6	-23.0%
MSAQ 11	R	23.7	18.1	-23.5%
MSAQ19	R	13.9	11.2	-19.6%
MSAQ 26	S*	15.2	14.2	-6.7%

Note: "R" = Roadside; "S" = Suburban. "*" Denotes that, whilst this monitoring location is labelled as suburban within MSDC's ASR, this monitoring location is situated in setting that can be considered roadside.

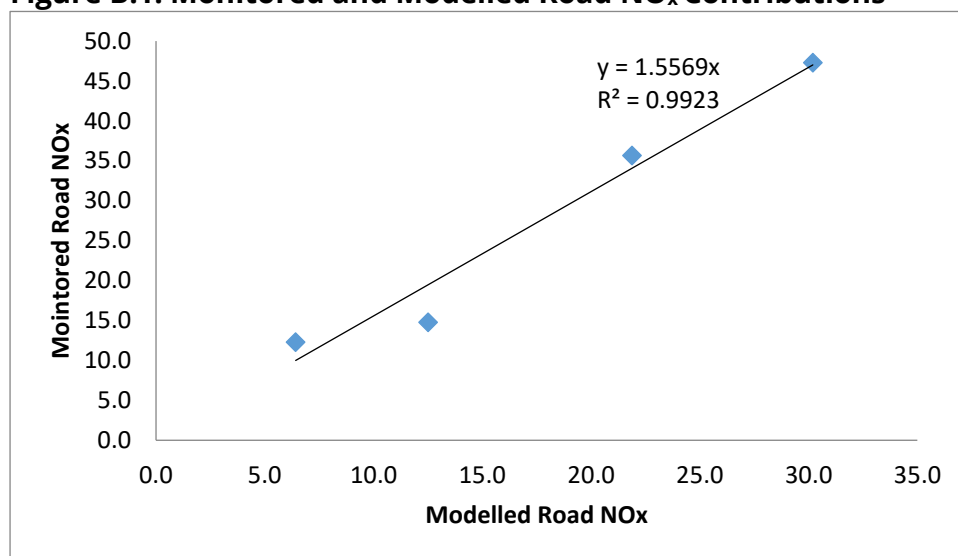
The data in Table B.1 show that the model consistently under-predicted annual mean NO₂ concentrations. This is often seen in model verification studies and is likely the result of local dispersion characteristics.

Although the modelled concentrations were within 25% of the monitored results, as the model exhibited a tendency to under-predict concentrations of NO₂ at the monitoring sites, an adjustment factor was applied to the model to ensure conservative and locally accurate results.

As it is primary NO_x emissions that are modelled, rather than secondary NO₂, an adjustment factor must be derived for the road contribution of NO_x.

A plot of modelled versus monitored NO_x concentrations on a graph shows a positive correlation, as shown in Figure B.1, below.

Figure B.1: Monitored and Modelled Road NO_x Contributions



By plotting a trend line through the points on the graph, an adjustment factor of **1.56** was derived for NO_x emissions from the modelled road sources. Table B.2 shows total monitored and modelled concentrations of NO₂ following the adjustment of the road contribution of NO_x by this factor.

Table B.2: Monitored and Adjusted Modelled Concentrations of NO₂ at Local Monitoring Sites

Monitor	Type	Annual Mean NO ₂ Concentration (µg.m ⁻³)		
		Monitored	Adjusted Modelled	% Difference
MSAQ 10	R	28.0	27.9	-0.25%
MSAQ 11	R	23.7	23.1	-2.49%
MSAQ19	R	13.9	12.9	-7.55%
MSAQ 26	S*	15.2	17.3	13.68%

Note: "R" = Roadside; "S" = Suburban. "*" Denotes that, whilst this monitoring location is labelled as suburban within MSDC's ASR, this monitoring location is situated in setting that can be considered roadside.

The data in Table B.2 show that following the adjustment, all modelled concentrations of NO₂ were within 25% of monitored concentrations at the measurement sites. The adjusted modelled concentrations are not anticipated to under-predict as notably as the unadjusted modelled concentrations. Therefore, the adjustment factor was considered suitable for the adjustment of the modelled road contributions of NO_x.

Root Mean Square Error (RMSE) is used to define the average error or uncertainty of the model. According to LAQM.TG(22), the RMSE should ideally be within 10% of the relevant AQS, but is acceptable where it is within 25% of the AQS. Following the adjustment of the modelled results, an RMSE of 1.2 µg.m⁻³ was calculated through comparison of the monitored and modelled concentrations of NO₂, which equates to 3.0% with respect to the annual mean AQS and is therefore within the ideal 10% range.

As there were no suitable PM₁₀ or PM_{2.5} monitoring data in the study area, it was not possible to perform model verification for these pollutants. Therefore, the NO_x adjustment factor has also been applied for modelled road contributions of PM₁₀ and PM_{2.5}, in accordance with LAQM.TG(22).

Appendix C: Recommended Construction Phase Mitigation

Recommended Construction Phase 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)*¹⁴ and *Guidance on Air Quality Monitoring in the Vicinity of Demolition and Construction Sites (2018)*²³ 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 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 a phase commences. Further guidance is provided by the IAQM on monitoring

²³ Institute of Air Quality Management. (2018). *Guidance on Air Quality Monitoring in the Vicinity of Demolition and Construction Sites*.

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.

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

- 🌱 Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.
- 🌱 Avoid dry sweeping of large areas.
- 🌱 Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.
- 🌱 Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.
- 🌱 Record all inspections of haul routes and any subsequent action in a site 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 leaving the site where reasonably practicable).
- 🌱 Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.
- 🌱 Access gates to be located at least 10m from receptors where possible.



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