



Consortway, Burgess Hill, RH15 9TJ
Air Quality Assessment

On Behalf of PGQ Property Consulting
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1 Introduction

- 1.1 Greenavon Ltd was commissioned by PGQ Property Consulting to undertake an Air Quality Assessment associated with a planning application for a proposed B2/B8 unit at Consortway, Burgess Hill, RH15 9TJ (the Site). A Site Location Plan is included in Figure 1.1, below.
- 1.2 The Proposed Development is situated within the Victoria Business Park and land-use surrounding the Site is almost exclusively commercial and industrial. The nearest highly sensitive uses are the residential dwellings located over 150m to the north.
- 1.3 The Site is not located within or near an Air Quality Management Area (AQMA), i.e. an area of known poor air quality. There are no AQMAs in Burgess Hill, and only one within the administrative boundary of Mid Sussex District Council (MSDC), the local planning authority.
- 1.4 This report evaluates the potential impacts and sensitivities of the Proposed Development on local air quality during both the construction and operational phases, recommending mitigation measures where necessary. It has been prepared in accordance with best practice guidance from Environmental Protection UK (EPUK) & the Institute of Air Quality Management (IAQM), the Sussex Air Quality Partnership and relevant local and national policies and regulations.

Figure 1:1: Site Location Plan



2 Policy Context

Air Quality Standards Regulations and Air Quality Strategy

- 2.1 The Air Quality Standards (AQS) Regulations 2010¹ and subsequent amendments, regulate the concentrations of major pollutants in outdoor air in the UK, including particulate matter (PM₁₀ & PM_{2.5}), nitrogen dioxide (NO₂), sulphur dioxide (SO₂), ozone (O₃), carbon monoxide (CO) and lead (Pb). These regulations seek to minimise the public's exposure to air pollution by requiring ambient concentrations to be within legally binding limit values, as well as target values.
- 2.2 The AQS' of relevance to this assessment are summarised in Table 2.1 below.

Table 2:1: Air Quality Standards for England

Pollutant	Averaging Period	Objective ($\mu\text{g.m}^{-3}$)	Date to be achieved by
Nitrogen dioxide (NO₂)	1-hour mean not to be exceeded more than 18 times per year.	200	1 January 2005
	Annual Mean	40	1 January 2005
Particulate Matter (PM₁₀)	24-Hour Mean not to be exceeded more than 35 times per year	50	1 January 2005
	Annual Mean	40	1 January 2005
Particulate Matter (PM_{2.5})	Annual Mean	20	1 January 2020

- 2.3 The Environment Act 1995 requires the Government and devolved administrations to produce a National Air Quality Strategy (NAQS) for the UK. The last major update to the NAQS was published in 2007², with minor updates occurring in 2011 and in 2023. Under the Environment Act 2021³, the Secretary of State must review the NAQS every five years. The most recent review in April 2023, included a PM_{2.5} annual mean target of 10 $\mu\text{g.m}^{-3}$, to be achieved by 2040.
- 2.4 Part IV of the Environment Act 1995 and Part II of the Environment (Northern Ireland) Order 2002 sets out that it is the responsibility of every local authority to review air quality within its area and designate an AQMA where air quality limit values are not

¹ Air Quality Standards Regulations 2010 (as amended) S.I 2008/30.

² Defra (2007) The Air Quality Strategy for England, Scotland, Wales, and Northern Ireland.

³ Environment Act 2021 SI No. 1274 (C. 72).

being achieved. An Air Quality Action Plan (AQAP) setting out the measures to reduce pollution in that area must then be put in place.

- 2.5 There is one AQMA within the administrative boundary of MSDC, declared for exceedances of the annual mean AQS for NO₂. This AQMA is located at Stonepound Crossroads in Hassocks, over 3km to the south of the Site.
- 2.6 MSDC has adopted an AQAP⁴, however, the four measures within this AQAP are focused on improving conditions locally to the AQMA and are not relevant to the Proposed Development.

National Planning Policy Framework

- 2.7 The revised National Planning Policy Framework (NPPF)⁵, updated in December 2023, sets out the Government's planning policies for England and how these are expected to be applied. A key aim of the NPPF is to promote sustainable development and regarding conserving the natural environment, paragraph 180 states:

“Planning policies and decisions should contribute to and enhance the natural and local environment by: [...]

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”.

- 2.8 Paragraph 192 relates to compliance with legal limit values and how planning decisions should be consistent with local air quality policy and action plans. It states:

“Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified,

⁴ MSDC (2022) Stonepound Crossroads Air Quality Action Plan Updated 19.10.22 After Steering Group

⁵ Ministry of Housing, Communities & Local Government (2023) National Planning Policy Framework

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”.

- 2.9 Paragraph 191 relates to the appropriate siting of development and the assessment of cumulative effects, it states:

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

- 2.10 Whilst principally relating to sustainable transport, Paragraph 109 is indirectly related to air quality and states:

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

Planning Practice Guidance

- 2.11 Planning Practice Guidance (PPG)⁶ provides advice on how the planning process can take account of the impact of new development on air quality. It sets out what should be included in an air quality assessment and provides detail of when air quality is likely to be relevant to a planning decision:

“Whether air quality is relevant to a planning decision will depend on the proposed development and its location. Concerns could arise if the

⁶ Department for Communities and Local Government (2024) Planning Practice Guidance Air Quality

development is likely to have an adverse effect on air quality in areas where it is already known to be poor, particularly if it could affect the implementation of air quality strategies and action plans and/or breach legal obligations (including those relating to the conservation of habitats and species). Air quality may also be a material consideration if the proposed development would be particularly sensitive to poor air quality in its vicinity.

When deciding the relevance of air quality, the PPG suggests this as important.

- 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”.*

Local Planning Policy

2.12 The MSDC District Plan (2014 – 2031)⁷ currently directs planning decisions within the district. It contains policy of relevance to air quality and this assessment, including DP29: *Noise, Air and Light Pollution*, which states:

“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.”*

Air Quality Guidance

2.13 This assessment has been undertaken with reference to the following national and local guidance:

- Defra, Local Air Quality Management Technical Guidance (LAQM.TG (22)) (2022)⁸;
- Institute of Air Quality Management (IAQM) and Environmental Protection UK, *Land-Use Planning and Development Control: Planning for Air Quality* (2017)⁹;

⁷ MSDC (2018) Mid Sussex District Plan 2014 – 2031

⁸ Defra. 2022. Part IV of the Environment Act 1995, Environment (Northern Ireland) Order 2002 Part III, Local Air Quality Management, Technical Guidance LAQM. TG(22).

⁹ EPUK & IAQM. (2017). Land-Use Planning & Development Control: Planning for Air Quality.

- IAQM, A guide to the assessment of air quality impacts on designated nature conservation sites¹⁰;
- IAQM, Guidance on the assessment of dust from demolition and construction (2024)¹¹.
- Sussex-Air Air Quality Partnership (2021) Air quality and emissions mitigation guidance for Sussex¹².

¹⁰ EPUK & IAQM. (2020). A guide to the assessment of air quality impacts on designated nature conservation sites.

¹¹ IAQM. (2024). Guidance on the assessment of dust from demolition and construction.

¹² Sussex-Air Air Quality Partnership (2021) Air quality and emissions mitigation guidance for Sussex

3 Methodology

Consultation

- 3.1 The proposed scope of work was shared with MSDC's Pollution team in October 2024, asking for comment. MSDC's Senior Environmental Health Officer provided the following commentary on the proposed mitigation:

"The preferred mitigation types – depending on the calculated damage costs – would be EV charging infrastructure within the development over and above the current recommended parking standards, public transport subsidy for employees and/or ensuring that business vehicles are zero or ultra- low emission."

Baseline Conditions

- 3.2 The purpose of a baseline assessment is to gather information on existing air quality in the vicinity of the site to better understand how air quality might constrain, or be impacted by, a proposal.
- 3.3 A review of baseline conditions has been undertaken using data provided by Defra's UK AIR information resource¹³ and review and assessment reports provided by MSDC¹⁴. Defra's Pollutant Release and Transfer Register¹⁵ was also reviewed to identify any major industrial or waste management sources in the vicinity.

Construction Phase Assessment

- 3.4 The construction phase of the proposed development will result in emissions of dust, fine particulates and other pollutants associated with construction traffic and non-road mobile machinery (NRMM).

Construction Phase Dust Risk Assessment

- 3.5 There are many activities on a construction site that can generate dust emissions including demolition, cutting, the storage of friable materials, piling, concrete batching,

¹³ Defra (2020) *Background Mapping data for local authorities – 2018* [Accessed online: <https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2018>]

¹⁴ MSDC (2024) *2023 Air Quality Annual Status Report*

¹⁵ Defra. *UK Pollutant Release and Transfer Register (PRTR) data sets*. [Accessed online: <https://prtr.defra.gov.uk/pollutant-releases>]

crushing, and screening of wastes, loading and tipping and dry sweeping, amongst others.

- 3.6 IAQM guidance recommends that an assessment of construction dust risk would likely be required where there is:

“a ‘human receptor’ within:

250 m of the boundary of the site; or 50 m of the route(s) used by construction vehicles on the public highway, up to 250 m from the site entrance(s).

an ‘ecological receptor’ within:

50 m of the boundary of the site; or 50 m of the route(s) used by construction vehicles on the public highway, up to 250 m from the site entrance(s).”

- 3.7 As the proposed development is in proximity to commercial and residential uses, a construction dust risk assessment has been undertaken.
- 3.8 A review of the Multi Agency Geographic Information for the Countryside (MAGIC) website¹⁶ could not identify any statutory ecological receptors in proximity to the Site. As such, the potential effects of dust emissions on ecological receptors has been screened out, based on distance alone.
- 3.9 A construction dust risk assessment involves several steps, which are summarised below:
- **Step 1 (Screening):** distance-based criteria are used to screen the requirement for a detailed dust risk assessment. If sensitive receptors are located within the screening distance, a full risk assessment including steps 2-4 should be undertaken.
 - **Step 2:** The dust risk of each phase of the construction works (demolition, earthworks, construction and trackout) is assessed.
 - **Step 2A (Dust Emission Magnitude):** the potential dust emission magnitude for each phase is defined as either ‘Small’, ‘Medium’ or ‘Large’, taking account of the scale and nature of the works.

¹⁶ Natural England and MAGIC partnership organisations. Multi Agency Geographic Information for the Countryside. <http://www.magic.gov.uk/>

- **Step 2B (Sensitivity of Area):** the sensitivity of the area to dust impacts is identified as either 'Low', 'Medium' or 'High', for each construction phase.
- **Step 2C (Assignment of Risk):** The phase specific magnitude is combined with the phase specific sensitivity to provide a phase specific risk profile (Low Risk, Medium Risk or High Risk) for dust soiling, human health effects and ecological impacts.
- **Step 3 (Mitigation):** Site specific mitigation for each of the four construction phases is then identified, based on the outputs of Step 2.
- **Step 4 (Judgement of Significance):** Professional judgment is then used to examine whether any significant residual risk/ effects are likely.

3.10 The above steps are designed to provide a framework for the assessment of construction risk; however, best practice IAQM guidance explicitly states that "professional judgement" should be used when assessing dust risk as the guidance cannot cover the full range of projects likely to be subject to dust assessment.

3.11 IAQM guidance, however, cautions that all judgements must be fully auditable and where justification cannot be given, a precautionary approach should be taken where the highest level of mitigation is recommended.

Construction Traffic and Non-Road-Mobile Machinery

3.12 LAQM.TG (22) outlines that impacts associated with exhaust emissions from on-site plant (NRMM) are unlikely to have a significant impact on air quality in most cases, where there are suitable controls and site management. Furthermore, because of the scale of the works, the quantity of emissions would unlikely result in significant peaks in air pollution. As such, the assessment of NRMM and construction traffic has been scoped out of the assessment.

Operational Phase Assessment

Screening Assessment

3.13 Minor development, on their own, are highly unlikely to cause significant increases in local air pollution concentrations. Environmental Protection UK (EPUK) & IAQM guidance, therefore, advocates a two-stage screening approach. EPUK & IAQM

guidance states that the impact of a proposal on air quality cannot be screened out, based on size alone, if there are:

- 10 or more residential units or a site area of more than 0.5ha; or
- 1,000 m² of floor space for all other uses or a site area greater than 1ha.

3.14 Coupled with any of the following:

- the development has more than 10 parking spaces;
- the development will have a centralised energy facility; or
- other centralised combustion process.

3.15 At the second screening stage, EPUK & IAQM guidance provides indicative criteria which can be used to screen out the potential for significant impacts caused by a proposed development.

Ecological Receptors

3.16 Air quality assessments must also consider the impact of operational traffic on designated ecological sites, considering the sensitivity of the receptor and the predicted change in pollution concentrations. As there are no designated sites of ecological importance in proximity, further assessment of the proposal's impact on ecological receptors has been scoped out.

Emissions Mitigation Statement

3.17 The purpose of an emissions mitigation assessment is to ensure that all developments incorporate suitable air quality mitigation measures, thereby minimizing the incremental increase in air pollution caused by successive developments.

3.18 The Proposed Development incorporates more than 500 m² of B2/B8 floorspace and as such, an emissions mitigation assessment, including a damage cost calculation, is required.

3.19 "Damage costs" are a set of impact values, measured per tonne of emitted pollutant. These values estimate the societal costs associated with changes in pollutant emissions and when combined with emission change forecasts associated with a proposal, provide an approximate value of the effects of the proposal. These calculations underpin emission mitigation statements, with the total damage cost guiding the amount of money that should be spent on air quality mitigation.

3.20 The proposal's total transport emissions of PM_{2.5} and NO_x, over a 5-year appraisal period, were calculated using Defra's emissions factor toolkit (EFT v12.1)¹⁷, with damage costs provided by Defra's Appraisal Toolkit¹⁸.

Sensitivity of Site

- 3.21 The proposed development comprises commercial use only. Members of the public would not reasonably be expected to spend significant periods of time (e.g., an hour more than eighteen times a year) at the proposed development and as such, the AQS' for NO₂, PM₁₀ and PM_{2.5} do not technically apply at the Site.
- 3.22 It is, however, recognised that it is common practice for pollution levels at commercial properties to be compared to the 1-hour mean AQS for NO₂. LAQM.TG (22) guidance suggests that where annual mean concentrations of NO₂ are below 60µg.m⁻³, exceedances of the 1-hour mean AQS for NO₂ is unlikely. As such, for the purposes of this assessment, where annual mean concentrations of NO₂ are predicted to be less than 60µg.m⁻³, it has been assumed that the location is compliant with the standard.
- 3.23 LAQM.TG (22) and AEA¹⁹ guidance provides details on how pollution concentrations fall with increasing distance from sources, such as roads. These criteria, in combination with the results of the baseline assessment have been used to determine whether an exceedance of any of the UK AQS' are likely across any part of the Site.

¹⁷ Defra (2024) Emissions Factor Toolkit (v12.1) [Accessed online:
<https://laqm.defra.gov.uk/air-quality/air-quality-assessment/emissions-factors-toolkit/>

¹⁸ Defra (2023) Air quality appraisal: damage cost guidance [Accessed online:
<https://www.gov.uk/government/publications/assess-the-impact-of-air-quality/air-quality-appraisal-damage-cost-guidance>]

¹⁹ AEA Energy & Environment (2008) Diffusion Tubes for Ambient NO₂ Monitoring: Practical Guidance:
https://laqm.defra.gov.uk/documents/0802141004_NO2_WG_PracticalGuidance_Issue1a.pdf

4 Baseline Conditions

- 4.1 A baseline assessment has been undertaken to provide a summary of the existing air quality environment in the local area.

Local Air Quality Management

- 4.2 MSDC has declared one AQMA in the District due to exceedances of the annual mean AQS for NO₂ at the Stonepound Crossroads in Hassocks. The proposed development is located over 3km from this AQMA.

Industrial Sources

- 4.3 A review of the UK Pollutant Release and Transfer Register could not identify any industrial sources that would have the potential to significantly impact air quality in the vicinity of the proposed development. The closest facility on the register, the Factory Lane Special Waste Transfer Station (an installations for the disposal of non-hazardous waste), is located over 1.8km to the northeast.

DEFRA / UK-AIR

- 4.4 Defra provides predictions of annual mean concentrations of background NO₂, PM₁₀ and PM_{2.5}, at 1km² resolution across the UK. A summary of the predictions for the grid square (530500,118500) containing the application site for the years 2020-2027 are set out in Table 4.1 below.

Table 4:1: UK-AIR predicted background concentrations for the application site

Pollutant	Annual Mean Concentration (µg.m ⁻³)							
	2020	2021	2022	2023	2024	2025	2026	2027
NO₂	12.5	12.1	11.7	11.4	11.0	10.7	10.5	10.3
PM₁₀	14.4	14.2	14.0	13.8	13.7	13.5	13.5	13.5
PM_{2.5}	9.8	9.7	9.5	9.4	9.3	9.1	9.1	9.1

- 4.5 The data in Table 4.1 show that background annual mean concentrations of NO₂, PM₁₀ and PM_{2.5} are predicted to be below their respective AQS across the application site, between 2020 and 2027.
- 4.6 Predicted background concentrations of NO₂, PM₁₀ and PM_{2.5} are predicted to fall between 2020 and 2027. This is due to the gradual improvement of the UK fleet with

vehicles with cleaner engines and other local, regional, and national policy to reduce emissions across all sectors.

Local Monitoring

- 4.7 The MSDC manages a network of automatic monitoring stations and diffusion tubes in its administrative boundary, monitoring NO₂ and PM₁₀. The MSDC's latest available monitoring data is published in the 2024 Air Quality Annual Status Report (ASR)¹⁴, which includes data from 2023.
- 4.8 Defra also carries out additional air quality monitoring across the UK. Data from the Automatic Urban and Rural Network (AURN) and the UK Urban NO₂ network can also provide relevant monitoring data for the establishment of baseline conditions.
- 4.9 Table 4.2 below summarises the most recent available monitoring data within Burgess Hill. There is no PM₁₀ monitoring in relevant proximity to the Site.

Table 4.2: Local Annual Mean Concentrations

Site ID	Site Type	Distance To Site (m)	Distance to Kerb (m)	Annual Mean Concentration (µg.m ⁻³)				
				2019	2020	2021	2022	2023
NO ₂								
MSAQ34	Roadside	920	4.4	24.4	19.0	19.6	18.7	16.9
MSAQ46	Roadside	1151	1.7	-	-	-	-	19.5
MSAQ21	Roadside	1183	1.9	27.6	21.0	24.0	20.2	18.8
MSAQ41	Roadside	1518	1.6	-	-	18.6	18.2	16.2
MSAQ32	Roadside	1615	1.5	13.7	11.2	11.4	12.3	10.6
MSAQ22	Roadside	2322	1.5	26.0	20.1	22.2	21.3	20.4
MSAQ40	Roadside	2748	1.5	-	11.5	13.1	12.5	10.4
Bold denotes exceedances of annual mean AQS								

- 4.10 Measured annual mean concentrations of NO₂ have been below the 40µg.m⁻³ AQS at all monitoring sites within at least 2.7 km of the Site since 2019. In 2023, all measured annual mean concentrations of NO₂ were at least 49% below the 40µg.m⁻³ AQS.
- 4.11 There is strong evidence of a downward trend in annual mean NO₂ concentrations in Table 4.2. This is likely principally due to the renewal of the UK vehicle fleet with newer vehicles, with lower emissions.

5 Construction Phase Assessment

Dust Risk Assessment

- 5.1 There are many activities on a construction site that can generate dust emissions including demolition, cutting, the storage of friable materials, piling, concrete batching, the crushing and screening of wastes, loading and tipping and dry sweeping, amongst others. The time of year in which these activities occur can also influence the dust emission magnitude, with drier conditions often favouring dust release.

Dust Magnitude (Step 2A)

- 5.2 The dust emission magnitude for demolition, earthworks, construction and Trackout were categorized ('Small', 'Medium', or 'Large') using professional judgment in combination with the proposed plans. Table 5.1 below sets out the IAQM's dust emission magnitude criteria/ examples as well as the defined project level magnitude for each phase.

Table 5.1: Dust Emission Magnitude Examples and Project Specific Judgement

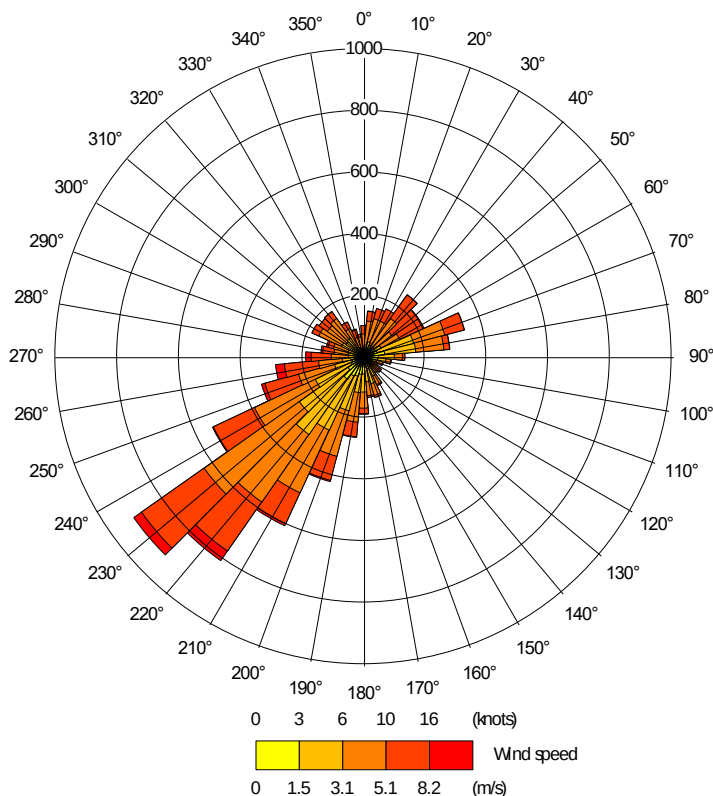
Activity	Dust Emission Magnitude	IAQM Example Dust Emission Magnitude Criteria	Project specific dust Emission Magnitude
Demolition	Large	Total building volume >75,000 m ³ , potentially dusty construction material (e.g. concrete), on-site crushing and screening, demolition activities >12 m above ground level.	NA: there are no buildings on-site which require demolition.
	Medium	Total building volume 12,000 m ³ – 75,000 m ³ , potentially dusty construction material, demolition activities 6-12 m above ground level.	
	Small	Total building volume <12,000 m ³ , construction material with low potential for dust release (e.g. metal cladding or timber), demolition activities <6 m above ground, demolition during wetter months.	
Earthworks	Large	Total site area >110,000 m ² , potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size), >10 heavy earth moving vehicles active at any one time, formation of bunds >6 m in height.	Small: The total site area is roughly 3,030 m ² which falls within the IAQM's small dust emission category for earthworks.
	Medium	Total site area 18,000 m ² – 110,000 m ² , moderately dusty soil type (e.g. silt), 5-10 heavy earth	

		moving vehicles active at any one time, formation of bunds 3m - 6m in height.	
	Small	Total site area <18,000 m ² , soil type with large grain size (e.g. sand), <5 heavy earth moving vehicles active at any one time, formation of bunds <4 m in height.	
Construction	Large	Total building volume >75,000 m ³ , on site concrete batching, sandblasting.	Small: The proposed building has a volume of less than 12,000 m ³ and will be constructed with materials with a low potential for dust release.
	Medium	Total building volume 12,000 m ³ – 75,000 m ³ , potentially dusty construction material (e.g. concrete), on site concrete batching.	
	Small	Total building volume <12,000 m ³ , construction material with low potential for dust release (e.g. metal cladding or timber).	
Trackout	Large	>50 Heavy Duty Vehicle (HDV) (>3.5t) outward movements in any one day, potentially dusty surface material (e.g. high clay content), unpaved road length >100 m;	Small: There is paved access to the Site, which will minimise the potential for dust and dirt to entrain onto the wheels of vehicles leaving the Site.
	Medium	20-50 HDV (>3.5t) outward movements in any one day, moderately dusty surface material (e.g. high clay content), unpaved road length 50 m – 100 m	
	Small	<20 HDV (>3.5t) outward movements in any one day, surface material with low potential for dust release, unpaved road length <50 m	

Sensitivity of the Area (Step 2B)

- 5.3 The sensitivity of the area to dust soiling, human health impacts and ecological impacts is a function of the inherent sensitivity of individual receptors, the local background concentrations of PM₁₀, as well as site specific factors such as the prevailing wind.
- 5.4 Figure 5.1 displays the modelled wind rose for Gatwick Airport meteorological station for 2023. It shows that, during this period, the prevailing wind was from the south east.

Figure 5:1: Wind-Rose for Gatwick Airport (2023)



5.5 High sensitivity receptors include residential dwellings, schools, hospitals and other places where vulnerable members of the community may spend significant periods of time (e.g. care homes and nurseries). However, places such as car showrooms and museums may also be considered of high sensitivity due to the potential for dusts to diminish the value of the property or to significantly impact the enjoyment of a space. Medium sensitivity receptors include areas where people would not reasonably be expected to be present for extended periods of time (e.g., places of work or parks).

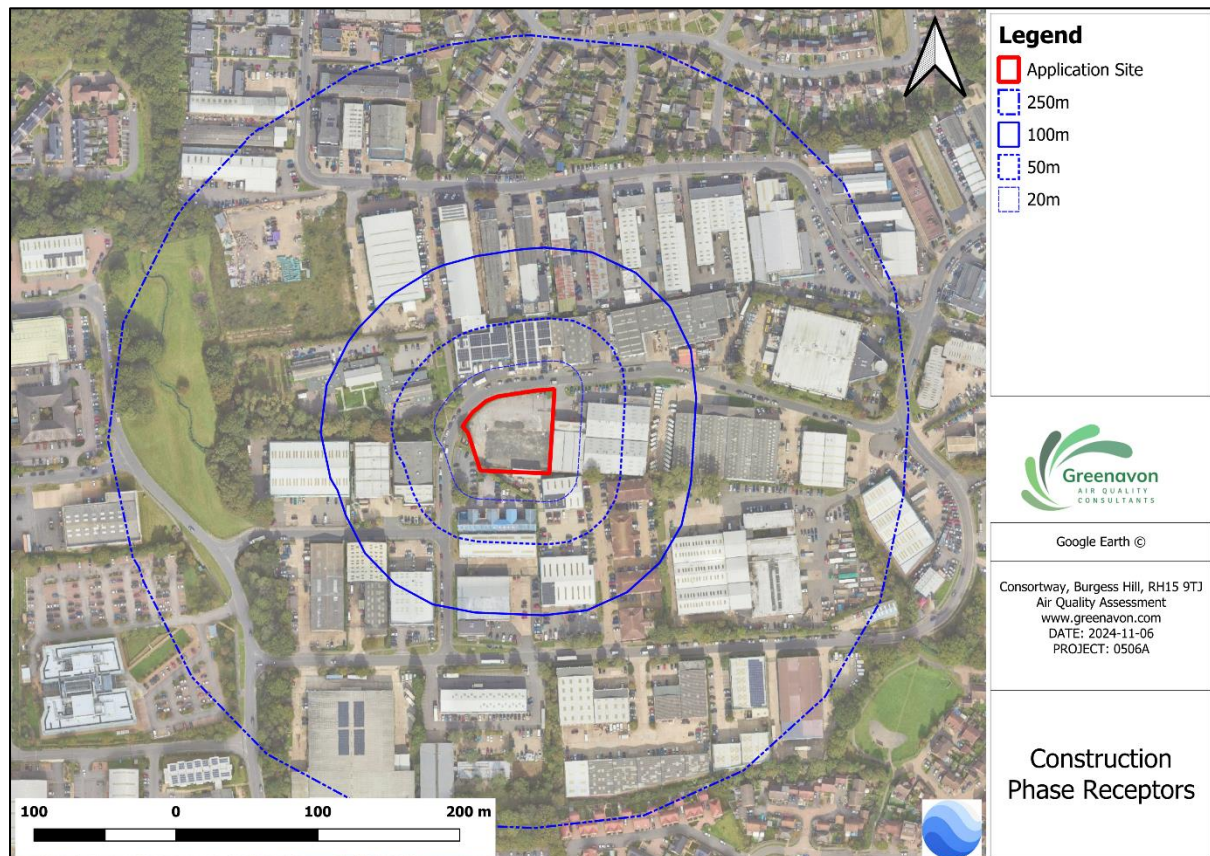
5.6 The approximate number of high and medium sensitivity receptors located within 250m of the Proposed Development are set out in Table 5.2 and shown in Figure 5.2 below.

Table 5:2: High and Medium Sensitivity Receptors in proximity to the Site.

Distance	Number of Receptors sensitive to dust	Details
High Sensitivity		
<20m	0	NA
<50m	0	NA
<100m	0	NA

<250m	50+	Residential dwellings to north and south
Medium Sensitivity		
<20m	3	Neighbouring commercial properties, including building to the north with solar panels.

Figure 5:2: Construction Phase Receptors



5.7 The sensitivity of the area to earthworks, construction and trackout, for dust soiling, human health impacts and ecological impacts is set out in Table 5.3 below.

Table 5:3: Sensitivity of the Area to Dust

Impact	Sensitivity				Justification
	Demolition	Earthworks	Construction	Trackout	
Dust Soiling	NA	Medium	Medium	Medium	There are commercial buildings within 20m of the Site boundary.
Human Health Impacts	NA	Low	Low	Low	Background concentrations of PM ₁₀ in the vicinity are below 24µg.m ⁻³ and there are fewer than 100 receptors within 20m of the site/roads used by construction vehicles.

Ecological Impacts	NA	Negligible	Negligible	Negligible	There are no statutory ecological receptors within 250m of the site.
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Risk (Step2C)

- 5.8 The risk of dust impacts during each phase of construction, in the absence of mitigation, is summarised in Table 5.4 below.

Table 5.4: Summary of Dust Impact Risk by Construction Stage

Stage	Dust Impact Risk		
	Dust Soiling	Human Health	Ecology
Demolition	NA	NA	NA
Earthworks	Low	Negligible	Negligible
Construction	Low	Negligible	Negligible
Trackout	Low	Negligible	Negligible

- 5.9 Overall, the construction phase of the Proposed Development is considered to present a low risk of nuisance dust soiling effects, a negligible risk for PM₁₀ health effects and a negligible risk for ecological impacts, in the absence of mitigation.

Site Specific Mitigation

- 5.10 Table 5.5 below includes the IAQM's highly recommended mitigation measures for sites with a low risk of dust impacts.

Table 5.5: Highly Recommended Mitigation Measures

Category	Mitigation Measures
General	Display the name and contact details of person(s) accountable for air quality pollutant emissions and dust issues on the site boundary.
	Display the head or regional office contact information.
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 complaints log available to the local authority when asked.
	Record any exceptional incidents that cause dust and air quality pollutant emissions, either on or off the site, and the action taken to resolve the situation is recorded in the logbook
Monitoring	Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked.
	Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.
	Agree dust deposition, dust flux, or real-time PM ₁₀ continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction.

Preparing and maintaining the site	Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible
	Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.
	Avoid site runoff of water or mud.
Operating vehicle/machinery and sustainable travel	Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone and the London NRMM standards, where applicable.
	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 such equipment wherever appropriate.
Waste management	Avoid bonfires and burning of waste materials
Demolition	Ensure effective water suppression is used during demolition operations. Hand held 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.

Residual Effects

5.11 After the implementation of the mitigation measures listed in Table 5.5, the significance of each phase of the construction programme will be reduced and the residual significance of impact of the construction phase is expected to be *Negligible*, which is not significant.

6 Operational Phase Assessment

Impact Assessment

- 6.1 To assess the potential impact of other emissions on air quality, the Proposed Development has been compared, in Table 6.1, to the EPUK/IAQM screening criteria. Where these criteria are exceeded, further detailed assessment might be required.

Table 6.1: Indicative/ Qualitative Screening Criteria

Indicative Criteria to proceed to detailed AQA	Proposal
A change of light duty vehicle (LDV) flows of: - more than 100 average annual daily traffic (AADT) within or adjacent to an AQMA; and - more than 500 AADT elsewhere.	Apex Transport Planning Ltd have stated that the Proposed Development would generate a total of 131 vehicle trips (including 18 HDV trips) per weekday. The proposed trip generation is, therefore, below the EPUK & IAQM screening criterion of 500 AADT, outside of AQMAs.
A change of HDV flows of: - - more than 25 AADT within or adjacent to an AQMA; and - more than 100 AADT elsewhere	
Where a change in road alignment is 5m or more and the road is within an AQMA.	The Proposed Development would not cause any existing road layout to change by more than 5m.
The introduction of a new junction which causes traffic to significantly change in terms of acceleration/ deceleration, e.g., traffic lights, or roundabouts.	No major offsite junction improvements are planned.
Typically, any combustion plant where the single or combined NO_x emission rate is less than 5 mg.s⁻¹ is unlikely to give rise to impacts, provided that the emissions are released from a vent or stack in a location and at a height that provides adequate dispersion.	The Proposed Development will be heated with electric heaters powered by a roof mounted PV.

- 6.2 As none of the EPUK/IAQM criteria in Table 6.1 were exceeded, it can be concluded that the Proposed Development would have no significant effect on local air quality.

Sensitivity

- 6.3 AEA and LAQM.TG (22) guidance provide the following criteria to determine the site type, for the purposes of classifying monitoring locations. By combining the site type definition (e.g., background, roadside, urban background), reproduced in Table 6.2 below, with data provided in the baseline assessment, a judgement can be made on the likelihood of exceeding the relevant AQS' at the application site.

Table 6:2 Site Type Classification

Guidance	Definition of Site	Description
LAQM.TG (22)	Roadside	A site sampling typically within one to five metres of the kerb of a busy road (although distance can be up to 15 m from the kerb in some cases)
	Background	An urban location distanced from sources and therefore broadly representative of citywide background conditions, e.g., urban residential area
AEA Diffusion Tube	Roadside/ Kerbside	Kerbside sites should be within 1 m of the kerb and are usually fixed to street furniture. Roadside diffusion tubes should be sited between 1 and 5 m from the kerb edge and mounted ideally either on a lamp post or road sign on the pavement, or on the face of a building adjoining the pavement.
	Background	Urban background sites must be located: • >50 m from any major source of NO₂, such as multi-storey car parks. • >30 m from any very busy road (> 30,000 vehicles per day). • >20 m from a busy road (10,000 – 30,000 vehicles per day) or from any medium sized sources, e.g., petrol stations or ventilation outlets from catering establishments. • >10 m from any main road. (Quiet roads, for example within residential estates, are acceptable); and • >5 m from anywhere where vehicles may stop with their engines idling.

- 6.4 The proposed development is in an ‘urban background’ environment as it is located on a quiet road and is distanced from any other major pollution sources. As demonstrated in Table 4.1 background concentrations of NO₂, PM₁₀ and PM_{2.5} in the vicinity are well below their respective AQS’.
- 6.5 In addition, all roadside measurements of NO₂ in Burgess Hill were well below 40 µg.m⁻³ and as such, a potential exceedance of any annual mean or shorter-term standard for NO₂ is considered highly unlikely.
- 6.6 As NO₂, released from road vehicles, is the key pollutant of concern in Mid Sussex District, concentrations of PM₁₀ and PM_{2.5} are also predicted to be well below their respective annual mean and shorter-term standard across the Site.

7 Emissions Mitigation Statement

Damage Cost Calculation

- 7.1 Total annual emissions of NO_x and PM_{2.5} from the Proposed Development were calculated using Defra's emission factor toolkit (EFT v12.1), using the proposal's traffic generation rates. Defra's Appraisal Toolkit, which incorporates the latest damage cost values, was used to calculate the proposal's total 'damage cost'.
- 7.2 The inputs to the calculation and their source are summarised in Table 7.1 below.

Table 7.1: Emissions Factor Toolkit Calculation Inputs

Input	Value	Unit	Source/guidance
Proposed Traffic Generation	113 LDV 18 HDV	Daily vehicle trip generation	Apex Transport Planning
Trip Length	10	km	EPUK & IAQM Planning Guidance suggested value
Vehicle Speed	50	km.hr ⁻¹	EPUK & IAQM Planning Guidance suggested value
EFT Road Type	England (Urban)	-	The Proposed Development is in an urban area.
EFT Year	2026-2030	-	The Proposed Development's assumed opening year + four years.
Appraisal period	5	years	
Damage Cost for NO_x and PM_{2.5}	Road Transport Urban Small	NA	Reflective of the Site's location within Burgess Hill.

- 7.3 Table 7.2 and Table 7.3 below shows the predicted annual increase in NO_x and PM_{2.5} emissions, respectively, as well as the predicted adverse impact on society.

Table 7.2 Damage Cost Calculation for NO_x.

NO _x Road Transport Urban Small					
Year	2026	2027	2028	2029	2030
Reduction in emissions (tonnes)	0.097356877	0.0844	0.07305	0.06324	0.05486
Central Damage Costs (£)	7941	7941	7941	7941	7941
Central Benefit (£)	773	670	580	502	436
Discounted Central Benefit (£)	773	660	563	480	410
Central Present Value	£2,887				

Table 7.3 Damage Cost Calculation for PM_{2.5}

PM _{2.5} Road Transport Urban Small					
Year	2026	2027	2028	2029	2030
Reduction in emissions (tonnes)	0.0116	0.0114	0.0113	0.0112	0.0111
Central Damage Costs (£)	54848	54848	54848	54848	54848
Central Benefit (£)	635	627	620	615	611
Discounted Central Benefit (£)	635	617	602	588	575
Central Present Value	£3,018				

- 7.4 Adding the central present valuations for increases in NO_x and PM_{2.5}, the Proposed Development's total damage cost over a 5-year appraisal period was calculated to be **£5,905**.

Mitigation

- 7.5 The NPPF requires that development "wherever possible" help to improve local environmental conditions. MSDC use the Sussex-Air Air Quality Partnership Framework Guidance to determine whether a proposal includes an appropriate level of mitigation. The standard mitigation from this guidance relates to the provision of Electric Vehicle (EV) charge point provision and a Travel Plan.
- 7.6 The *West Sussex County Council Guidance on Parking at New Developments*²⁰, which is referenced in the Sussex Air Guidance, recommends the following EV charge point provision for new developments:
- "Active charging points for electric vehicles should be provided at a minimum of 20% of all parking spaces with ducting provided at all remaining spaces where appropriate to provide 'passive' provision for these spaces to be upgraded in future."*
- 7.7 The Proposed Development has 26 car parking spaces and therefore it would require a minimum of 5 EV charging spaces, to meet the minimum recommendations of West Sussex County Council.
- 7.8 MSDC however suggests that the Proposed Development should provide a package of air quality mitigation (beyond standard requirements) whose value exceeds the calculated damage cost of **£5,905**.

²⁰ West Sussex County Council Guidance on Parking at New Developments (September 2020)

7.9 The Sussex Air Guidance offers the following list of mitigation measures that could be considered for inclusion in the air quality mitigation package:

- *“Set up differential parking charges to favour cleaner vehicles*
- *Provide public transport subsidy for employees*
- *Ensure all new commercial vehicles comply with the latest European Emission Standards*
- *Implement a fleet strategy that reduces emissions*
- *Use zero or ultra-low emission service vehicles*
- *Invest in local walking and cycling initiatives*
- *Contribute to the cost of on-street EV charging*
- *Contribute to unfunded measures identified in air quality action plans*
- *Implement a low emission strategy”.*

7.10 The Proposed Development includes 7 EV charge points (exceeding West Sussex standards by 2 spaces), PV panels and an all-electric heating strategy. Whilst the PV panels and heating strategy will not minimise emissions from road transport, as is required by Sussex Air Guidance, they do highlight the Proposed Development’s commitments to sustainability.

7.11 Best practice guidance from EPUK and the IAQM recommends the provision of at least one Electric Vehicle (EV) fast charge point per 1,000 m² of commercial floorspace. The proposed development includes 7 EV charge points, which exceeds the EPUK & IAQM recommendations by at least 5 spaces, and Sussex Air Guidance by 2 spaces. Given the Proposed Development’s additional commitments to minimizing pollution levels, such as implementing an all-electric heating strategy, it is considered that these measures would more than offset the Proposed Development’s Damage Cost.

8 Discussion

- 8.1 Local and National Air Quality Policy seeks to sustain compliance with national objectives and limit values, and to prevent new development from contributing to, or being put at unacceptable risk, from unacceptable levels of air pollution. Furthermore, a key theme of the NPPF requires development to identify opportunities to improve air quality.
- 8.2 A review of the baseline air quality conditions was undertaken, referring to data provided by DEFRA/UK-AIR and MSDC. Measured concentrations of NO₂ near the Site have decreased in recent years and no exceedances of the annual mean AQS for NO₂ were recorded in Burgess Hill since at least 2019.
- 8.3 The Proposed Development will generate only 131 vehicle trips per day. The potential for significant impacts as a result of the operation of the Proposed Development could therefore be screened out, using EPUK & IAQM criteria. As such, the proposal will not significantly impact local air quality.
- 8.4 As members of the public are unlikely to spend more than 18 hours per year at the Proposed Development, it is not a location of 'relevant exposure' for the national AQS'. However, it is common practice to compare commercial buildings against the short-term AQS for NO₂ and PM₁₀. There have been no exceedances (or indicative exceedances) of the short-term standards for NO₂ or PM₁₀ in the local area since at least 2019. As such, pollutant levels across the Site, which is set well back from any major sources of pollution, are highly likely below the relevant AQS'.
- 8.5 The NPPF and MSDC planning policy requires that developments should, "wherever possible," contribute to the improvement of local environmental conditions. A damage cost calculation, which was used to evaluate whether the proposal included an appropriate level of mitigation, was conducted, yielding a damage cost of £5,905.
- 8.6 The Proposed Development includes 7 electric vehicle charge points, which exceeds the recommended minimum provision in best practice EPUK & IAQM guidance by 5 spaces, and local guidance by 2 spaces. As the energy strategy is all-electric and PV panels will be installed on the roof, the proposal is judged to include an appropriate level of air quality mitigation to offset its damage cost.
- 8.7 A construction dust risk assessment was undertaken in line with guidance provided by the IAQM. The assessment found that the construction phase of the Proposed Development presented a *low* risk of dust soiling effects to neighbouring uses and an

appropriate level of mitigation and monitoring was recommended to negate this risk. These recommendations should be incorporated into a construction environmental management plan (CEMP), Dust Management Plan (DMP), or similar document.

9 Conclusion

- 9.1 Greenavon Ltd was commissioned by PGQ Property Consulting to undertake an Air Quality Assessment associated with a planning application for a proposed B2/B8 unit at Consortway, Burgess Hill, RH15 9TJ (the Site).
- 9.2 The assessment concluded that during the operational phase, the Proposed Development would have no significant impact on, nor would be significantly impacted by, local air quality.
- 9.3 The proposal is judged to include an appropriate level of mitigation to minimise its effect during the operational phase.
- 9.4 After the implementation of an appropriate level of construction dust mitigation, there would be no significant impacts during the construction phase.
- 9.5 The Proposed Development is considered compliant with all local and national planning policy. Air quality should not, therefore, present a significant barrier to the planning process.



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