

Bellway Homes Ltd (South London)

Durrington Gasworks (Elizabeth Square Phase 2)

Air Quality Assessment

REPORT REF.

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Statement of Competence

The following authors of this report are Members of the Institute of Air Quality Management (IAQM) and possess the requisite qualifications, expertise, and experience to conduct robust air quality assessments and analyses in accordance with regulatory standards and best practices.

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1 Introduction

Background

1.1 Ardent Consulting Engineers (ACE) have been appointed by Bellway Homes Ltd (South London) to prepare an Air Quality Assessment (AQA) in support of a planning application for a mixed-use development at Durrington Gasworks (the Site) within Worthing Borough Council (WBC), and so within Adur and Worthing Councils (AWC) authority.

1.2 The Proposed Development description is as follows:

"Full Planning Application for mixed-use development comprising 123 dwellings and commercial units with associated parking, landscaping, open space and drainage."

1.3 The Site refers to the specific parcel of land to which a planning application, permission, assessment, or policy consideration relates, the Proposed Development refers to any specific works, operations, or changes of use this planning application is seeking permission for.

Site Location and Context

1.4 The Site is located on land approximate National Grid Reference (NGR): 511521, 103093. The Site location is shown below.



Figure 1-1: Site Location

- 1.5 The Proposed Development has the potential to cause impacts, including fugitive dust emissions associated with construction works and road traffic exhaust emissions from vehicles travelling to and from the Site during the operation phase. Energy plant installed to provide heating and hot water during operation could also affect local air quality.
- 1.6 An AQA was therefore undertaken to determine baseline conditions and consider potential impacts and effects associated with the Proposed Development during construction and operation against this baseline, in air quality terms, as detailed in the following report.

2 Approach

2.1 The approach to preparing an AQA in the UK typically involves the following steps:

Screening and Scoping

- 2.2 Screening identifies if an AQA is needed by evaluating potential emissions and their likely impacts. This involves considering the type and scale of the project and its proximity to sensitive receptors (e.g., residential areas, schools, hospitals).
- 2.3 Scoping then defines the scope of the assessment, including the pollutants to be considered, the geographical area to be covered, and the receptors to be included.
- 2.4 The relevant screening assessment is provided below, followed by the scope of assessment determined to be required to appropriately assess the potential air quality impacts and effects of the Proposed Development.

Screening

Construction Phase

Fugitive Dust Emissions: Impact

- 2.5 The construction phase of the Proposed Development has the potential for fugitive dust emissions to occur owing to construction phase activities, such as demolition, earthworks, construction and trackout activities.
- 2.6 The potential for impacts at sensitive locations of relevant exposure depends significantly on local meteorology during the undertaking of dust generating activities, with the most significant effects likely to occur during dry and windy conditions.
- 2.7 The desk-study undertaken to inform the baseline (see Section 4) identifies several sensitive receptors within 250m of the red line boundary of the Site. As such, further assessment of potential dust impacts has been undertaken (see Appendix A for the construction phase methodology).

Construction Traffic Emissions: Impact

- 2.8 The Institute of Air Quality Management (IAQM) advise that from experience of assessing exhaust emissions from site traffic, it is unlikely that any significant adverse impacts on local air quality would be caused, and in most cases, quantitative assessment is not needed.

Operation Phase

Road Traffic Emissions: Impact (Human Health)

- 2.9 The Proposed Development has been screened against the following indicative criteria for requiring an AQA as detailed in the EPUK & IAQM 'Land use Planning & Development Control: Planning for Air Quality, V1.2' guidance:

Table 2-1: EPUK & IAQM Indicative Criteria for Requiring Detailed Assessment

Criteria	Evaluation
A change in Light-Duty Vehicle traffic flows of more than 100 Annual Average Daily Traffic (AADT) within or adjacent to an Air Quality Management Area (AQMA), or more than 500 AADT elsewhere on local roads with relevant receptors.	Yes
A change in Heavy-Duty Vehicle (HDV) flows of more than 25 AADT within or adjacent to an AQMA, or more than 100 AADT elsewhere on local roads with relevant receptors.	No
A change in the alignment of roads by 5m or more and the road is within an AQMA.	No
Introduction of a new junction or remove an existing junction that cause traffic to significantly change vehicle accelerate/decelerate, e.g., traffic lights, or roundabouts, near to relevant receptors.	No
Introduce or change a bus station, where bus flows will change by more than 25 AADT within or adjacent to an AQMA, or more than 100 AADT elsewhere.	No
Has an underground car park with an extraction system within 20 m of a relevant receptor. Coupled with the car park having more than 100 movements per day (total in and out).	No
Has one or more substantial combustion processes, including combustion plant associated with standby emergency generators (typically associated with centralised energy centres) and shipping, where there is a risk of impacts at relevant receptors.	No

- 2.10 ACE, the transport consultants, have confirmed that the Proposed Development will increase two-way AADT movements by a total of 859 AADT between the proposed residential and commercial aspects of development. This therefore exceeds the EPUK & IAQM screening criteria.
- 2.11 The Proposed Development will generate 652 AADT (2% HDV) from the residential part of the scheme and 207 AADT (4% HDV) from the commercial part.
- 2.12 The commercial traffic (207 AADT (4% HDV)) will travel along Martlet's Way, head south on Mulberry Lane, and then split, with 120 AADT going northwest on Goring Way and 87 AADT continuing south on Mulberry Lane. Accordingly, trip generation from the commercial element is therefore below the IAQM screening thresholds for areas outside an AQMA.
- 2.13 For the 'Worthing Grove Lodge/Lyons Farm AQMA', ACE's transport consultants have confirmed that trips from the Proposed Development will not exceed the screening thresholds of 100 LDV and/or 25 HDV AADT for within an AQMA.
- 2.14 The residential units, generating 652 AADT (2% HDV), will be accessed through the Phase 1 development east of the Site, via Sword Street and onto Barrington Road. Therefore, further consideration is needed regarding the screening criteria being exceeded along Barrington Road.
- 2.15 AWC also have a requirement for damage cost calculations to be undertaken in line with the 'Air Quality and Emissions Mitigation Guidance for Sussex', to help mitigate any potential impact new developments may have on air quality. This has been scoped into this assessment.

Road Traffic Emissions: Impact (Sensitive Ecology)

- 2.16 There are several ecological receptors within proximity of the Proposed Development, most notably the following Ancient Woodlands (AW) located adjacent to Titnore Lane:
- Titnore Wood
 - Goring Wood
 - Street's Copse

- 2.17 The transport consultants at ACE have confirmed in-combination trips will not exceed 1,000 AADT adjacent to Titnore Lane. As such, in accordance with IAQM guidance, any potential impacts in relation to road traffic emissions at ecological sites can be screened out.

Road Traffic Emissions: Exposure / Site Sensitivity

- 2.18 The Proposed Development will introduce new receptors which are sensitive to the long-term and short-term nitrogen dioxide (NO₂) and Particulate Matter (PM₁₀ and PM_{2.5}) AQALs. Further consideration is therefore required.
- 2.19 Conclusions on the exposure assessment are made using data from the baseline review in Section 4 of this report, which includes consideration of local traffic data, proximity to identified pollution sources, air quality monitoring information, and modelled annual mean background concentrations from both Defra's UK-AIR data.

Railway Emissions

- 2.20 The Site is located just south of railway lines connected to Durrington-on-Sea railway station. These railway lines, however, are not identified as having a high volume of diesel passenger trains. Therefore, it is appropriate to screen out impacts in relation to emissions from locomotives along the railway lines upon future occupants of the Proposed Development.

Combustion Plant Emissions: Impacts

- 2.21 No known combustion plant is incorporated into the design of the Proposed Development. Therefore, no further consideration of combustion plant emissions has been undertaken.

Scope

Scoped In

- 2.22 The following elements have been included with the scope of the AQA due to the screening assessment identifying a risk of potential effects requiring further assessment:

1. Construction Phase

a. Construction Activities (Impacts)

i. Dust, PM₁₀

2. Operation Phase

a. Road Traffic Emissions (Impacts) (Human Health)

i. NO₂, PM₁₀, PM_{2.5}

b. Damage Cost Calculations

Scoped Out

2.23 The following elements have been excluded from the detailed scope of the AQA based on the outcome of the screening assessment:

1. Construction Phase

a. Construction Traffic Emissions (Impacts)

2. Operation Phase

a. Combustion Plant Emissions (Impacts)

i. NO₂, PM₁₀, PM_{2.5}

b. Road Traffic Emissions (Impacts) (Ecology)

i. Oxides of nitrogen (NO_x), Ammonia (NH₃), nitrogen deposition,
acid deposition

3 Policy, Legislation and Guidance

- 3.1 To inform the assessment the following Policy, Legislation, and Guidance have been considered:

Policy

National Planning Policy

National Planning Policy Framework

- 3.2 The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how these are expected to be applied. The purpose of the planning system is to contribute to the achievement of sustainable development. To ensure this, the NPPF recognises 3 overarching objectives, including the following of relevance to air quality:

"Chapter 2 Achieving sustainable development.

Para. 8

c) an environmental objective - to protect and enhance our natural, built, and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy."

- 3.3 Chapter 15 of the NPPF details objectives in relation to conserving and enhancing the natural environment. It states that:

"Chapter 15 Conserving and enhancing the natural environment

Para. 187

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

[...]

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;"

- 3.4 The NPPF specifically recognises air quality as part of delivering sustainable development and states that:

"Ground conditions and pollution

Para. 198

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

- A) mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;*
- B) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason; and*
- C) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes, and nature conservation.*

Para. 199

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

- 3.5 The implications of the NPPF have been considered throughout this assessment.

Local Planning Policy

The Local Plan

- 3.6 The Council's current adopted Local Plan is the Worthing Local Plan 2023 (which covers the period 2020 – 2036). The following policies are relevant to this assessment:

Policy DM15 - 'Sustainable Transport & Active Travel' states:

"In order to manage the anticipated growth in demand for travel, development proposals which promote an improved and integrated transport network, with a re-balancing in favour of non-car modes as a means of access to jobs, homes, services and facilities, will be encouraged and supported.

...vii) ensure new development contributes to the mitigation of air pollution, particularly in Air Quality Management Areas. New development should be located and designed to incorporate facilities for electric vehicle charging points, thereby extending the current network..."

Policy DM22 – 'Pollution' states

"a) Development should not contribute to, be put at risk from, or be adversely affected by unacceptable levels of... air...pollution.... Where possible development should help to improve local environmental conditions.

b) New development in Worthing will be located in areas most suitable to the use of that development to avoid unacceptable risks from all sources of pollution.

c) Mitigation measures will need to be implemented for developments that could increase levels of pollution, taking into account any cumulative impact. Mitigation should avoid, minimise and offset the impact of development and take opportunities to improve local environmental conditions. Where there are significant levels of increased pollution that cannot be mitigated development will be refused.

d) Where appropriate, air quality... assessments will be required to support planning applications. These should be undertaken in accordance with the most up to date guidance and have regard to any relevant action plans. Any new development in the Worthing Air Quality Management Area must be consistent with the Air Quality Action Plan. Where any identified harm to any of these factors cannot be adequately mitigated, planning permission will be refused"

Legislation

3.7 There are two sets of air quality legislation which include ambient air quality thresholds for the protection of public health that apply in England, these include legally binding Limit Values originally set by the European Union (EU) Directive on ambient air quality and cleaner air for Europe (2008/50/EC) (which were transposed into UK law through the Air Quality Standards Regulations 2010), and regulations implementing national air quality objectives as set out in the Air Quality Strategy (AQS) 2023 for England which local authorities are required to work towards achieving.

3.8 The AQS sets out the Government's policies and framework for improving air quality in the UK with the aim of meeting the requirements of the 2008/50/EC Directive. The AQS also outlines the Limit Values, Target Values, Standards, Objectives, Critical

Levels, and Exposure Reduction Targets for the protection of human health and the environment.

3.9 The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 also brought forward a new target level for PM_{2.5}.

3.10 The relevant Limit Values, Target Values, Standards, Objectives, Critical Levels and Exposure Reduction Targets are collectively termed AQALs throughout this report.

Table 3-1: Air Quality Assessment Levels (AQALs)

Pollutant	AQAL	
	Concentration (µg/m ³)	Averaging Period
NO ₂	40	Annual mean
	200	1-hour mean, not to be exceeded on more than 18 occasions per annum
PM ₁₀	40	Annual mean
	50	24-hour mean, not to be exceeded on more than 35 occasions per annum
PM _{2.5}	20	Annual mean
	10	Annual Mean Interim Target ((AMIT) to be met across England by 2030)
	10	Annual Mean Concentration Target (AMCT) - To be met across England by 2040
	-	Population Exposure Reduction Target (PERT) - 35% reduction in population exposure by 2040 (compared to a base year of 2018)

3.11 With specific reference to the AMIT and AMCT for PM_{2.5}, it should be noted that that the dates for compliance are 2030 and 2040, respectively. The applicable PM_{2.5} AQAL for the purposes of this assessment therefore remains to be the current AQAL of 20µg/m³.

- 3.12 However, in line with the Defra “PM_{2.5} Interim Planning Guidance on the consideration of the Environment Act PM_{2.5} targets in planning decisions” the operation phase assessment will also aim to consider the 2040 AMCT for PM_{2.5}, identify key sources of PM_{2.5} air pollution from the Proposed Development, and outline the measures proposed to minimise emissions of PM_{2.5} and its precursors as far as is reasonably practicable.

Guidance

National Guidance

National Planning Practice Guidance

- 3.13 Reference ID 32 (Air Quality) of the National Planning Practice Guidance (NPPG), which was updated in November 2019, provides guiding principles on how planning can take account of the impact of new development on air quality.

- 3.14 The NPPG summarises the importance of air quality in planning and the key legislation relating to it.

Defra Technical Guidance

- 3.15 Table 3-2 summarises the advice provided in Defra’s Local Air Quality Management Technical Guidance 2022 (LAQM.TG(22)) on where the AQALs for pollutants considered within this report apply.

Table 3-2: Examples of Where the Air Quality Objectives Apply

Averaging Period	Objective Should Apply At	Objective Should Not Apply At
Annual mean	All locations where members of the public might be regularly exposed. Building façades of residential properties, schools, hospitals, care homes, etc.	Building façades of offices or other places of work where members of the public do not have regular access. Hotels, unless people live there as their permanent residence. Gardens of residential properties. Kerbside sites (as opposed to locations at the building façade), or any other location where public

Averaging Period	Objective Should Apply At	Objective Should Not Apply At
		exposure is expected to be short term.
24-hour mean	All locations where the annual mean objective would apply, together with hotels. Gardens of residential properties.	Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term.
1-hour mean	All locations where the annual mean and 24 and 8-hour mean objectives apply. Kerbside sites (for example, pavements of busy shopping streets). Those parts of car parks, bus stations, and railway stations etc which are not fully enclosed, where members of the public might reasonably be expected to spend one hour or more. Any outdoor locations where members of the public might reasonably be expected to spend one hour or longer.	Kerbside sites where the public would not be expected to have regular access.

Non-statutory guidance

3.16 The following guidance documents have been reviewed / followed / referred to in preparing this AQA:

- The EPUK & IAQM 'Land use Planning & Development Control: Planning for Air Quality', (2017 V1.2);
- The IAQM's 'Assessment of dust from demolition and construction' (2024 V2.2);
- The IAQM's 'A guide to the assessment of air quality impacts on designated nature sites' (2020);
- Air Quality and Emissions Mitigation Guidance for Sussex (2021).

4 Baseline Conditions

- 4.1 Existing air quality conditions in the vicinity of the Site were identified to provide a baseline for the assessment. These are detailed in the following Sections.

Local Air Quality Management

- 4.2 As required by the Environment Act (1995), the Council have undertaken Review and Assessment of air quality within their area of authority. This process has indicated that annual mean concentrations of NO₂ are above the AQAL within the Borough. As such, one AQMA is currently declared, the 'Worthing Grove Lodge/ Lyons Farm AQMA', declared for exceedances of annual mean NO₂ concentrations. This is described as follows:

"An area in the vicinity of the Grove Lodge roundabout on the A27 trunk road. It incorporates Upper Brighton Road (A27) from First Avenue to Grove Lodge Roundabout, 22-27 Lamorna Grove, the Grove Lodge Roundabout and Warren Road (A27) from the Grove Lodge Roundabout to the northern slip road of Warren Court."

- 4.3 The Site is located approximately 3km southwest of this AQMA.

Clean Air Zones (CAZ)

- 4.4 WBC has not been identified by The National Air Quality Plan as being required to implement a CAZ, nor produce a local action plan to address predicted exceedances of the NO₂ EU Limit Value within its area.

Air Quality Monitoring

- 4.5 Monitoring of pollutant concentrations is undertaken by WBC throughout their area of authority. Annual mean NO₂ results recorded in the vicinity of the development taken from readily available information online are shown in Figure 4-1 and Table 4-1. Exceedances of the relevant AQALs are shown in bold.

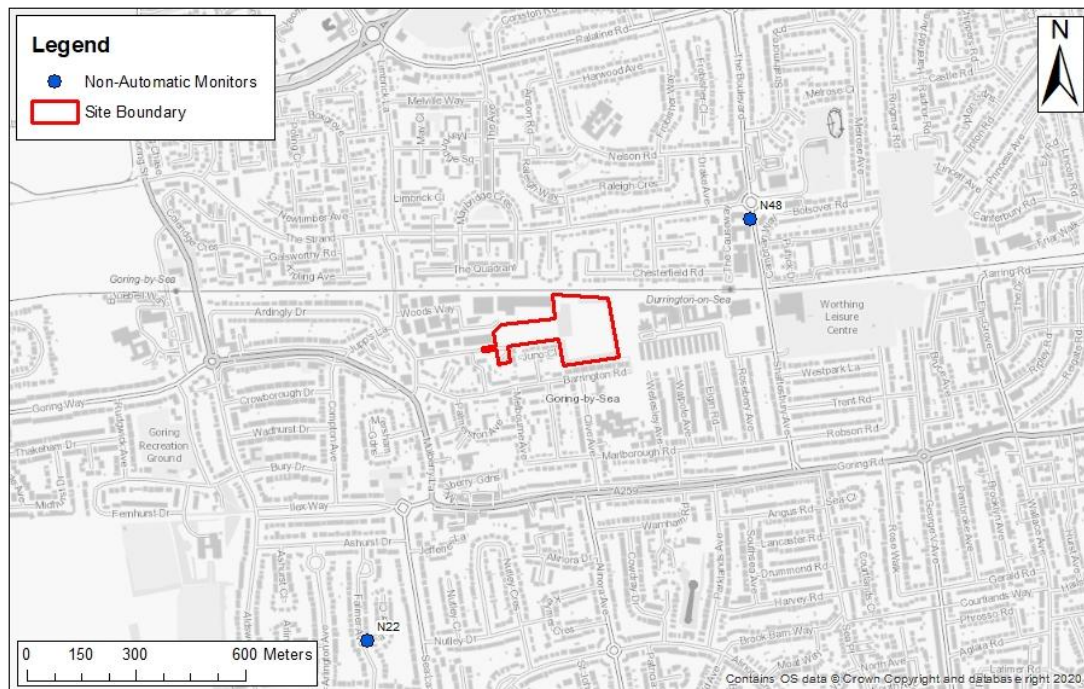


Figure 4-1: Local Monitoring

Table 4-1: Local Monitoring – NO₂

Site ID	Monitor Type	Monitored NO ₂ Concentration				
		(µg/m ³)				
		2020	2021	2022	2023	2024
N22	Urban Background Diffusion Tube	10.2	10.3	10.5	8.5	8.5
N48	Roadside Diffusion Tube	22.5	20.0	22.3	18.5	18.0

- 4.6 As shown in Table 4-1, monitored NO₂ concentrations have not exceeded the AQAL of 40 µg/m³ in recent years.
- 4.7 Monitoring of NO₂ concentrations is not currently undertaken at any automatic monitors within the vicinity of the Proposed Development, additionally, monitoring data for PM₁₀ and PM_{2.5} concentrations are also not currently available within the Site locale.

Background Pollution Concentrations

- 4.8 Predictions of background pollutant concentrations on a 1km-by-1km grid basis have been produced by Defra for the entire of the UK to assist local authorities (Las) in their Review and Assessment of air quality.
- 4.9 The Site is in grid square NGR: 511500, 103500. Data for this location was downloaded from the Defra website for the purpose of this assessment and is summarised in Table 4-2.
- 4.10 Background concentrations have been provided for 2024 (the year latest local monitoring data is available) and 2029 (the assessed completion year).

Table 4-2: Background Pollution Concentrations

Pollutant	Predicted Background Concentration	
	(µg/m³)	
	2024	2029
NO ₂	8.8	7.3
PM ₁₀	10.6	10.2
PM _{2.5}	6.8	6.4

- 4.11 As shown in Table 4-2, predicted background NO₂ and PM₁₀ concentrations are below the relevant AQALs at the development site.

Sensitive Receptors

- 4.12 A sensitive receptor is defined as any location which may be affected by changes in air quality because of a development. These have been defined for dust and road vehicle exhaust emission impacts in the following Sections.

Construction Phase

- 4.13 Receptors sensitive to potential dust impacts during demolition, earthworks and construction were identified from a desk top study of the area up to 250m from the Site boundary. These are summarised in Table 4-3. The Proposed Development will not involve any on-site demolition.

Table 4-3: Earthworks and Construction Dust Sensitive Receptors

Distance from Site Boundary (m)	Approximate No. of Human Receptors	Approximate No. of Ecological Receptors
<20	10-100	0
<50	10-100	0
<100	10-100	0
<250	> 100	0

- 4.14 Receptors sensitive to potential dust impacts from trackout were identified from a desk top study of the area up to 50m from the road network within 250m of the Site access. These are summarised in Table 4-4.

Table 4-4: Trackout Dust Sensitive Receptors

Distance from Site Boundary (m)	Approximate No. of Human Receptors	Approximate No. of Ecological Receptors
<20	10 – 100	0
<50	10 – 100	0

- 4.15 There are no ecological receptors within 50m of the development boundary or the access route within 250m of the Site entrance. As such, ecological impacts have not been assessed further within this report.

5 Predicted Impacts

Construction Phase

- 5.1 Several additional factors have been considered when determining the sensitivity of the surrounding area. These are summarised in Table 5-1.

Table 5-1: Additional Area Sensitivity Factors to Potential Dust Impacts

Factor	Comment
Whether there is any history of dust generating activities in the area.	The desk top study did not indicate any dust generating activities in the local area.
The likelihood of concurrent dust generating activity on nearby sites.	A review of the planning portal identified an application for 287 dwellings and a 68 bed care home (planning ref AWD/1979/19) neighbouring the Site. This may have potential to increase concurrent dust generating activity. It is therefore appropriate to consider the area sensitivity as 'High' for all phases of construction.
Pre-existing screening between the source and the receptors.	No natural screening is currently present at the Site
Conclusions drawn from analysing local meteorological data which accurately represent the area: and if relevant the season during which works will take place.	The predominant wind bearing at the Site is from the southwest. As such, receptors to the northeast are most likely to be affected by dust releases.
Conclusions drawn from local topography.	There are no significant topographical constraints to dust dispersion.
Duration of the potential impact, as a receptor may become more sensitive over time.	Currently it is unclear as to the duration of the construction phase. However, it is possible that it will extend over 3 - 4 years.
Any known specific receptor sensitivities which go beyond the classifications given in the document.	No specific receptor sensitivities identified during the baseline assessment.

- 5.2 The sensitivity of the receiving environment to potential dust impacts is set out below.

Table 5-2: Sensitivity of the Surrounding Area to Potential Dust Impacts

Potential Impact	Sensitivity of the Surrounding Area		
	Earthworks	Construction	Trackout
Dust Soiling	High	High	High
Human Health	Low	Low	Low

- 5.3 In relation to human health, as shown in Table 4-2, background concentrations of PM₁₀ are < 24 µg/m³, therefore when considering the number of sensitive receptors within 20 m of the Site, the sensitivity has been classified as Low.

Demolition

- 5.4 The development proposals do not include any demolition activity. As such, no assessment of impacts has been undertaken.

Earthworks

- 5.5 Table 5-3 shows the evaluation of the potential magnitude of impacts from earthworks activities.

Table 5-3: Earthworks Emissions Magnitude

Category	Criteria	Evaluation
Large	Total site area greater than 110,000m ² .	No
	Potentially dusty soil type (e.g., clay, which will be prone to suspension when dry due to small particle size).	
	More than 10 heavy earth moving vehicles active at any one time.	
	Formation of bunds greater than 6m in height.	

Category	Criteria	Evaluation
Medium	Total site area 18,000m ² to 110,000m ² .	Yes
	Moderately dusty soil type (e.g., silt).	
	5 to 10 heavy earth moving vehicles active at any one time.	
	Formation of bunds 3m to 6m in height.	
Small	Total site area less than 18,000m ² .	No
	Soil type with large grain size (e.g., sand).	
	Less than 5 heavy earth moving vehicles active at any one time.	
	Formation of bunds less than 3m in height.	
	Earthworks during wetter months.	

5.6 The potential magnitude of impacts from earthworks activities is estimated to be Medium.

Construction

5.7 Table 5-4 shows the evaluation of the potential magnitude of impacts from construction activities.

Table 5-4: Construction Emissions Magnitude

Category	Criteria	Evaluation
Large	Total building volume greater than 75,000m ³	No
	On-site concrete batching	
	Sandblasting	
Medium	Total building volume 12,000m ³ to 75,000m ³	Yes

Category	Criteria	Evaluation
Small	Potentially dusty construction material (e.g., concrete)	
	On-site concrete batching	
	Total building volume less than 12,000m ³	No
	Construction material with low potential for dust release (e.g., metal cladding or timber)	

5.8 The potential magnitude of impacts from construction activities is estimated to be Medium.

Trackout

5.9 Table 5-5 shows the evaluation of the potential magnitude of impacts from trackout activities.

Table 5-5: Trackout Emissions Magnitude

Category	Criteria	Evaluation
Large	More than 50 HDV trips per day	No
	Potentially dusty surface material (e.g., high clay content)	
	Unpaved road length greater than 100m	
Medium	20 to 50 HDV trips per day	Yes
	Moderately dusty surface material (e.g., high clay content)	
	Unpaved road length 50m to 100m	
Small	Less than 20 HDV trips per day	No
	Surface material with low potential for dust release	
	Unpaved road length less than 50m	

5.10 The potential magnitude of impacts from trackout activities is estimated to be Medium.

Summary of Potential Unmitigated Dust Risks

5.11 A summary of the risk from each dust generating activity is provided in Table 5-6:

Table 5-6: Summary of Potential Unmitigated Dust Risks

Potential Impact		Risk				
		Demolition	Earthworks	Construction	Trackout	Overall
Magnitude / Sensitivity		n/a	Medium	Medium	Medium	Medium
Dust Soiling	High	n/a	Medium	Medium	Medium	Medium
Human Health	Low	n/a	Low	Low	Low	Low
Overall						Medium

5.12 It should be noted that the potential for impacts depends significantly on the distance between the dust generating activity and receptor location. Risk was predicted based on a worst-case scenario of works being undertaken at the Site boundary closest to each sensitive area. Therefore, actual risk is likely to be lower than that predicted during most of the construction phase.

Operation Phase

Road Traffic Emissions: Impact (Human Health)

5.13 It is acknowledged that the Proposed Development will generate a total of 652 daily vehicles along Barrington Road, which exceeds the screening criteria of 500 AADT for requiring an assessment. Paragraph 6.16 of the IAQM's Land-Use Planning & Development Control: Planning For Air Quality guidance states however that:

"... exceeding a screening criterion in Table 6.2¹ does not automatically lead to the requirement for a Detailed Assessment."

5.14 As such, a simple assessment has been undertaken as outlined below.

5.15 As shown in Figure 4-1, local monitor N48 is located adjacent to Shaftesbury Avenue approximately 450m northeast of the Site and located within 25m of the Strand Parade Roundabout. It should be highlighted that roundabouts typically experience worse air quality due to continuous higher volumes of traffic travelling at lower speeds, which generates higher vehicle emissions.

5.16 Table 4-1 reports the monitored concentrations of NO₂ at N48, showing that concentrations have not exceeded 23 µg/m³ between 2020 and 2024 and so comfortably below (58%) the AQAL of 40 µg/m³.

5.17 In this period background concentrations were typically 10 µg/m³ meaning that road traffic contributed 13 µg/m³ to total pollution concentration levels.

5.18 Department for Transport (DfT) count point no.801371 reported volumes of traffic along Shaftesbury Avenue to be approximately 21,000 daily vehicles.

5.19 Shaftesbury Avenue can be considered to be a road subject to far larger volumes of traffic than Barrington Road, due to its connectivity. Whereas Barrington Road is unlikely to have such high volumes of traffic, were it to be considered a 'busy road' this would be equivalent to 10,000 daily vehicles - which is less than half of that on Shaftesbury Avenue. Consequently, the road traffic contribution to total concentrations is also likely to be less than half.

5.20 Ultimately, it can be concluded that the likelihood for any impact upon existing receptors due to operational traffic in relation to NO₂, can be considered to be low.

5.21 Monitoring of PM₁₀ or PM_{2.5} is not currently undertaken within proximity of the Site, however monitoring of PM_{2.5} is undertaken at 1 no. automatic monitor within Worthing.

¹ Table 6-2 of the IAQM guidance, refers to the same screening criterion as shown in Table 2.1 of this report.

- 5.22 Automatic monitor WT2 has recorded that concentrations of PM_{2.5} have not exceeded 9 µg/m³ between 2020 and 2024. Furthermore, background concentrations of PM_{2.5} at WT2 were approx. 7 µg/m³ in 2021, meaning that road traffic contributed approx. 2 µg/m³. DfT count point no. 26302 reported approx. 30,500 daily vehicles along Upper Barrington Road, adjacent to monitor WT2, where once more if Barrington Road were to be considered a 'busy road' this would be equivalent to 10,000 daily vehicles - which is more than half of that on Upper Barrington Road.
- 5.23 As such it can be considered that concentrations will continue to decrease into the future and so being comfortably below to 20 µg/m³ AQAL. Concentrations reported between 2020 and 2024 are also below the AMIT of 10 µg/m³ by 2030 and the AMCT of 10 µg/m³ by 2040.
- 5.24 As such, when considering the close relationship between PM_{2.5} and PM₁₀, it can be concluded that the likelihood for any impact upon existing receptors due to operational traffic, in relation to PM_{2.5} and PM₁₀, can be considered to be low.

Road Traffic Emissions: Exposure / Site Sensitivity

- 5.25 The Site is located well away from the nearest emission source, being Barrington Road, by > 100m, as such it is appropriate to compare pollutant concentrations within the Site to background concentrations.
- 5.26 As shown in Table 4-2, concentrations of NO₂, PM₁₀, and PM_{2.5} have been well below the relevant AQALs in 2024, in which it is projected continue to decrease in 2029 (the estimated year of completion).
- 5.27 Furthermore, measured concentrations of NO₂ at local monitor N48 adjacent to Shaftesbury Avenue, and N22 an Urban Background monitor, have also been well below annual mean objectives in recent years (Table 4-1).
- 5.28 Therefore, any potential impacts arising from pollutant concentrations within the Site can be screened out, and the Site can be considered suitable for its end use.

Damage Cost Calculations

5.29 Annual emissions of NO_x and PM_{2.5} have been calculated using Defra's Emissions Factors Toolkit (EFT) v13 for the five-year period from 2029 (opening year) as per the Air Quality and Emissions Mitigations Guidance for Sussex.

Table 5-7: Damage Cost EFT Inputs

Area	Road Type	Traffic Flow	% HDV	Speed (kph)	Link Length (km)
England (not London)	Urban (Not London)	859	2.4	50 ^a	10 ^a

^a Based on the values provided by Sussex Air Quality Planning Guidance

5.30 For the purposes of this assessment, annual emissions have been calculated for 5 separate years (2029 through 2033) using the EFT. The emissions used for the calculation are shown below:

Table 5-8: Emissions in tonnes per annum

Pollutant	Road Type	Emissions (tonnes per annum)				
		2029	2030	2031	2032	2033
NO _x	Urban (Not London)	0.3712	0.3185	0.2727	0.2334	0.2006
PM _{2.5}	Urban (Not London)	0.0563	0.0555	0.0549	0.0544	0.0540

5.31 The output of the damage cost calculation using these emissions is shown below:

Table 5-9: Damage Cost Value

Pollutant	Low Sensitivity Value (£)	Central Present Value (£)	High Sensitivity Value (£)
NO _x	£2,404	£13,078	£49,161
PM _{2.5}	£7,167	£18,075	£51,747
Total	£9,571	£31,152	£100,908

5.32 Summing the values for NO_x and PM_{2.5} gives a total central present damage cost of £31,152. Mitigation measures have been costed to be proportionate to this damage cost value in Section 6 below.

6 Mitigation

Construction Phase

- 6.1 The full list of recommended mitigation measures for a 'medium' classification risk Site, as outlined within the IAQM guidance, is provided in Appendix B.

Operation Phase

- 6.2 No secondary mitigation measures are needed to manage the future exposure of residents to air pollution.
- 6.3 In relation to the Damage Cost Calculations, as per the Sussex Air Quality Guidance, the following mitigation is recommended:

Residential

- Invest in EV charging infrastructure⁴ within the development over and above the current recommended parking standards;
- Provide vouchers for alternatives to private car use;
- Provide public transport subsidy for residents;
- Set up a car club within the development or contribute to the cost of a local car club;
- Set up or join an existing car sharing scheme for residents;
- Designate parking spaces for car club/car sharing vehicles;
- Designate parking spaces for low emission vehicles;
- Provide electric bikes;
- Improve cycle paths to link to the existing local cycle network;
- Provide secure cycle storage; and
- Invest in additional evergreen infrastructure to reduce particulates and other pollutants.

Commercial / Industrial

- 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; and
- Implement a low emission strategy.

6.4 The Proposed Development will consider the above mitigation measures, proportionate to the damage cost value calculated, and has already implemented some of the measures (e.g. EV charging and cycle storage).

7 Conclusions

Construction Phase

- 7.1 Subject to the implementation of all relevant mitigation measures outlined in Appendix B, the residual impacts from dust generating activities are predicted to be not significant, in accordance with the IAQM guidance.

Operation Phase

- 7.1 Impacts from operation phase road traffic emissions are considered not significant, and future residents at the development site are considered unlikely to be exposed to pollution concentrations above AQALs.
- 7.2 The Proposed Development will consider the mitigation measures provided, proportionate to the damage cost value calculated.

Overall

- 7.3 The impacts and residual effects of the Proposed Development on air quality have been considered in the context of compliance with National Planning Policy as follows:

Table 7-1: Policy Compliance

Criteria	Evaluation	Comment
Do the proposals include new development that contributes to unacceptable levels of air pollution at other new development?	No	Positive outcome
Do the proposals include new development that is being put at unacceptable risk from unacceptable levels of air pollution?	No	Positive outcome
Do the proposals include new development that is adversely affected by unacceptable levels of air pollution?	No	Positive outcome
Do the proposals contribute to unacceptable levels of air pollution at existing development?	No	Positive outcome
Do the proposals put existing development at unacceptable risk from unacceptable levels of air pollution?	No	Positive outcome

Criteria	Evaluation	Comment
Do the proposals sustain and contribute towards compliance with relevant limit values or national objectives for pollutants?	Yes	Positive outcome
Have opportunities to improve air quality or mitigate impacts been identified?	Yes	Positive outcome
Have air pollution risks been properly considered and adequate mitigation included to ensure there are no adverse impacts because of the development?	Yes	Positive outcome

7.4 The Proposed Development is considered therefore to fully comply with planning requirements.

8 Further Work

Pre-Construction

8.1 The following work is committed as part of the delivery of construction phase mitigation:

1. Stakeholder Communications Plan;
2. Dust Management Plan;
3. Monitoring of dust deposition, dust flux, real-time PM₁₀ continuous monitoring;
 - a. To commence at least 3 months before site work
4. Construction Logistics Plan; and
5. Travel Plan.

Appendix A: Construction Phase Methodology

Step 1

Step 1 is a basic screening stage, to determine whether the more detailed assessment provided in Step 2 is required. Should human receptors be identified within 250m of the boundary or 50m from the construction vehicle route up to 500m from the site entrance, then the assessment proceeds to Step 2. Additionally, should ecological receptors be identified within 50m of the site or the construction vehicle route, then the assessment also proceeds to Step 2.

Step 2a - Potential Dust Emission Magnitude

Step 2a determines the potential for dust to arise during the construction phase. Activities on construction sites with the potential to generate dust can be categorised into 4 types of activities:

- Demolition
 - any activities associated with the removal of existing structures on the Site;
- Earthworks
 - includes the processes of soil-stripping, ground-levelling, excavation, and landscaping;
- Construction
 - any activities relating to the provision of new structures on the Site; and
- Trackout
 - the transport of dust and dirt from the Site onto the public road network where it may be deposited and re-suspended by vehicle traffic.

The potential dust emission magnitude for each of the activities is determined by the scale and magnitude of the works, and are classified as small, medium or large depending on the criteria outlined below in Table 8-1.

Table 8-1: Construction Dust - Magnitude of Emission

Activity	Potential Dust Emission Magnitude		
	Small	Medium	Large
Demolition	Total building volume <12,000m ³ , construction material with low potential for dust release (e.g., metal cladding or timber), demolition activities <6m above ground, demolition during wetter months	Total building volume 12,000 m ³ – 75,000m ³ , potentially dusty construction material, demolition activities 6-12m above ground level	Total building volume >75,000m ³ , potentially dusty construction material (e.g., concrete), on-Site crushing and screening, demolition activities >12m above ground level
Earthworks	Total Site area <18,000m ² , soil type with large grain size, <5 heavy earth moving vehicles active at any one time, formation of bunds <3m in height	Total Site area 18,000m ² – 110,000m ² , moderately dusty soil type, 5-10 heavy earth moving vehicles, formation of bunds 3m – 6m in height	Total Site area >110,000m ² , potentially dusty soil type (such as clay, which will be prone to suspension when dry due to small particle size), >10 heavy earth moving vehicles, formation of bunds >6m
Construction	Total building volume <12,000m ³ , construction material with low potential for dust release (such as metal cladding or timber)	Total building volume 12,000m ³ – 75,000m ³ , potentially dusty construction material (such as concrete), on-Site concrete batching	Total building volume >75,000m ³ , on-Site concrete batching, sandblasting
Trackout	<20 HDV (>3.5t) outward movements in any one day, surface material with low potential for dust release, unpaved roads <50m	20-50 HDV (>3.5t) outward movements in any one day, moderately dusty surface material (such as high clay content), unpaved road length 50m – 100m	>50 HDV (>3.5t) outward movements in any one day, potentially dusty surface material (such as high clay content), unpaved road length >100m

Step 2b - Sensitivity of the Area to Construction Dust

Step 2B defines the sensitivity of the area around the development to potential dust impacts. The influencing factors to determine individual receptor sensitivities are shown in Table 8-2.

Table 8-2: Examples of Factors Defining Sensitivity of an Area

Receptor Sensitivity	Examples	
	Human Receptors	Ecological Receptors
High	Users expect of high levels of amenity. High aesthetic or value property. People expected to be present continuously for extended periods of time. Locations where members of the public are exposed over a time period relevant to the AQAL for PM₁₀. e.g., residential properties, hospitals, schools, and residential care homes.	Internationally or nationally designated site e.g., Special Area of Conservation.
Medium	Users would expect to enjoy a reasonable level of amenity. Aesthetics or value of their property could be diminished by soiling. People or property wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land e.g., parks and places of work.	Nationally designated site e.g., Sites of Special Scientific Interest.
Low	Enjoyment of amenity would not reasonably be expected. Property would not be expected to be diminished in appearance. Transient exposure, where people would only be expected to be present for limited periods. e.g., public footpaths, playing fields, shopping streets, farmland, short term car parks, and roads.	Locally designated site e.g., Local Nature Reserve.

The sensitivity of the area is defined separately for dust soiling impacts, human health impacts and ecological impacts according to the criteria shown in the following tables, derived from IAQM guidance.

Table 8-3: Sensitivity of the Area to Dust Soiling

Receptor Sensitivity	No. of Receptors	Distance from the Source (m)			
		<20	<50	<100	<250
High	>100	High	High	Medium	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

Table 8-4: Sensitivity of the Area to Human Health Impacts

Receptor Sensitivity	Annual Mean PM ₁₀ Concentration	No. of Receptors	Distance from the Source (m)			
			<20	<50	<100	<250
High	>32 µg/m ³	>100	High	High	High	Medium
		10-100	High	High	Medium	Low
		1-10	High	Medium	Low	Low
	28-32 µg/m ³	>100	High	High	Medium	Medium
		10-100	High	Medium	Low	Low
		1-10	High	Medium	Low	Low
	24-28 µg/m ³	>100	High	Medium	Low	Low
		10-100	High	Medium	Low	Low
		1-10	Medium	Low	Low	Low
	<24 µg/m ³	>100	Medium	Low	Low	Low

Receptor Sensitivity	Annual Mean PM ₁₀ Concentration	No. of Receptors	Distance from the Source (m)			
			<20	<50	<100	<250
Medium		10-100	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
	>32 µg/m ³	>10	High	Medium	Low	Low
		1-10	Medium	Low	Low	Low
	28-32 µg/m ³	>10	Medium	Low	Low	Low
		1-10	Low	Low	Low	Low
	24-28 µg/m ³	>10	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
	<24 µg/m ³	>10	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Low	-	<1	Low	Low	Low	Low

Table 8-5: Sensitivity of the Area to Ecological Impacts

Receptor Sensitivity	Distance from the Source (m)	
	<20	<50
High	High	Medium
Medium	Medium	Low
Low	Low	Low

Step 2c - Risk of Impacts

Step 2c combines the information from Steps 2a and 2b to determine the risk of dust impacts without mitigation (i.e., excluding embedded mitigation), according to the matrices below.

The risk of impacts is determined for each of the 4 activities using the matrices prescribed in the IAQM guidance, as reproduced below:

Table 8-6: Dust Risk Category from Demolition Activities

Receptor Sensitivity	Distance from the Source (m)		
	Large	Medium	Small
High	High	Medium	Medium
Medium	High	Medium	Low
Low	Medium	Low	Negligible

Table 8-7: Dust Risk Category from Earthworks and Construction Activities

Receptor Sensitivity	Distance from the Source (m)		
	Large	Medium	Small
High	High	Medium	Low
Medium	Medium	Medium	Low
Low	Low	Low	Negligible

Table 8-8: Dust Risk Category from Trackout Activities

Receptor Sensitivity	Distance from the Source (m)		
	Large	Medium	Small
High	High	Medium	Low

Receptor Sensitivity	Distance from the Source (m)		
	Large	Medium	Small
Medium	Medium	Medium	Negligible
Low	Low	Low	Negligible

Step 3

Step 3 requires the identification of site-specific mitigation measures within the IAQM guidance to reduce potential dust impacts based upon the relevant risk categories identified in Step 2. For sites with Negligible risk, mitigation measures beyond those required by legislation are not required. However, additional controls may be applied as part of good practice.

Step 4

Once the risk of dust impacts has been determined and the appropriate mitigation measures identified, the final Step is to determine the significance of any residual impacts. For most construction activity, the aim should be to control effects using effective mitigation. Experience shows that this is normally possible. Hence the residual effect will normally be not significant.

Appendix B: Construction Dust Mitigation

IAQM guidance provides potential mitigation measures to reduce impacts because of fugitive dust emissions during the construction phase. These have been adapted for the Site as summarised in Table 8-9.

These may be reviewed prior to the commencement of construction works and incorporated into a Construction Environmental Management Plan or similar if required by the Local Authority, for example by planning condition. An example draft planning condition is presented after the table below:

Table 8-9: Fugitive Dust Emission Mitigation Measures

Issue / Control Measure	Site Risk
	Medium
H = Highly Recommended D = Desirable	
General	
Develop and implement a stakeholder communications plan that includes community engagement before work commences on-site.	H
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.	H
Display the head or regional office contact information.	H
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 committed measures in this document. The desirable measures should be included as appropriate for the site. The DMP may include monitoring of dust deposition, dust flux, real-time PM ₁₀ continuous monitoring and/or visual inspections.	H
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.	H
Make the complaints log available to the Local Authority when asked.	H
Record any exceptional incidents that cause dust and/or air emissions, either on- or off site, and the action taken to resolve the situation in the logbook.	H
Monitoring	

Issue / Control Measure	Site Risk
	Medium
H = Highly Recommended D = Desirable	
Undertake daily on-site and offsite inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the Local Authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars, and windowsills within 100 m of site boundary, with cleaning to be provided if necessary.	D
Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and inspect log available to the Local Authority when asked.	H
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.	H
Agree dust deposition, dust flux, or real-time PM ₁₀ continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least 3 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.	H
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.	H
Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on-site.	H
Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period.	H
Avoid site runoff of water or mud.	H
Keep site fencing, barriers and scaffolding clean using wet methods.	H
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	H
Cover, seed, or fence stockpiles to prevent wind whipping.	H
Operating Vehicle/Machinery and Sustainable Travel	
Ensure all vehicles switch off engines when stationary - no idling vehicles.	H
Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable.	H
Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided,	D

Issue / Control Measure	Site Risk
	Medium
H = Highly Recommended D = Desirable	
subject to the approval of the nominated undertaker and with the agreement of the Local Authority, where appropriate).	
Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing)	D
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.	H
Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.	H
Use enclosed chutes and conveyors and covered skips.	H
Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.	H
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.	H
Waste Management	
Avoid bonfires and burning of waste materials.	H
Measures Specific to Earthworks	
Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.	D
Use Hessian, mulches or tackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.	D
Only remove the cover in small areas during work and not all at once.	H
Measures Specific to Construction	
Avoid scabbling (roughening of concrete surfaces) if possible	D
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	H
Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery	D

Issue / Control Measure	Site Risk
	Medium
H = Highly Recommended D = Desirable	
For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust.	D
Measures Specific to 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	H
Avoid dry sweeping of large areas	H
Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport	H
Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable	H
Record all inspections of haul routes and any subsequent action in a site log book.	H
Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned	H
Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable)	H
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	H
Access gates to be located at least 10 m from receptors where possible	H