

Land At Bolney Grange Industrial Park, Jobs Lane, RH17 5PB

London Town Property Holdings Ltd.

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Executive Summary

AVAL Consulting Group Limited was commissioned to undertake an Air Quality Mitigation Statement (AQMS) in response to condition 12 of the planning application, ref DM/23/3208, for the construction of a mixed-use development with car parking at the land in Bolney Grange Industrial Park, Jobs Lane, RH17 5PB. This accompanies the Planning Application to the Local Authority, Mid Sussex District Council (MSDC), for consent to undertake the proposed work at the site.

This report addresses potential air quality impacts associated with the proposed development from construction and earthworks in accordance with the Institute of Air Quality (IAQM) Guidance on the Assessment of Dust from Demolition and Construction for assessing impacts from demolition and construction activities and Air quality and Emissions Mitigation guidance for Sussex (2021).

The qualitative assessment of construction dust effects has been undertaken for the proposed scheme. The construction phase is predicted to have a 'Medium Risk' of nuisance and/or loss of amenity impacts due to dust nuisance. However, the risk of dust nuisance can be mitigated by implementing the appropriate mitigation measures listed in the IAQM Construction guidance in Appendix C.

An emissions mitigation assessment was carried out in line with Emissions Mitigation guidance for Sussex and MSDC guidance, including a damage cost calculation which found that approximately £46,099 is required to be spent on mitigation to offset the transport impact of the development.

In conclusion with implementation of the listed mitigation steps in the IAQM guidance and Emissions Mitigation guidance for Sussex, the proposed development at the land in Bolney Grange Industrial Park, Jobs Lane, RH17 5PB is considered to be in compliance with all national, regional, or local planning policies in relation to construction and operation phase dust and air quality nuisance; therefore, the development site is considered suitable for commercial development.

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1 Introduction

1.1 Overview

London Town Property Holdings Ltd. ('the client') is responding to condition 12 of the planning application, ref DM/23/3208, for the construction of a mixed-use development with car parking at the land in Bolney Grange Industrial Park, Jobs Lane, RH17 5PB (hereafter referred to as the 'proposed development'), which is within the Local Authority, Mid Sussex District Council (MSDC).

The proposal is for the erection of 10 business units with a combined floor area of 19,927sqm under a flexible use comprising B8, B2 and Class E(g). The car parking allocation is for a total of 204 spaces.

The potential local air quality effects of the proposed development have been assessed using the latest planning guidance from Environmental Protection UK (EPUK), the Institute of Air Quality Management (IAQM)¹ and the Department for Environment, Food and Rural Affairs (Defra)².

This report addresses potential air quality impacts associated with the proposed development from construction and earthworks in accordance with the Air Quality and Emissions Mitigation Guidance for Sussex, which cites the Institute of Air Quality Management (IAQM) guidance on assessing impacts from demolition and construction activities. An emissions damage cost calculation in line with MSDC guidance has also been completed.

MSDC, the local authority, had one Air Quality Management Area (AQMA) at Stonepound Crossroads in Hassocks in 2012. Since then, pollution levels have declined to the degree where the AQMA was revoked in December 2024. The proposed development is not located within an Air Quality Management Area (AQMA).

1.2 Objective

This report provides an assessment of the following key impacts associated with the construction and operational phases of the proposed development:

- Nuisance, loss of amenity and health impacts associated with the construction phase of the development of sensitive receptors;
- The suitability of the proposed development location in terms of existing air quality; and
- To demonstrate how the development has considered ways to minimise exposure to sources of air pollution.
- Set out the standard mitigation costs provided in the Sussex guidance for major developments with a list of possible mitigation measures.

¹ IAQM (2017): 'Land Use Planning and Development Control: Planning for Air Quality v1.2'.

² Defra (2022): 'Local Air Quality Management – Technical Guidance (TG22)'.

1.3 Site Location

The National Grid Reference for the centre of the site is 538428, 127855. Figure 1.1 shows the proposed site location. The proposed development is not located in an Air Quality Management Area (AQMA). There is a LNR approximately 3.98km east of the proposed development, but no SSSI, NNR, SAC and Ramsar.

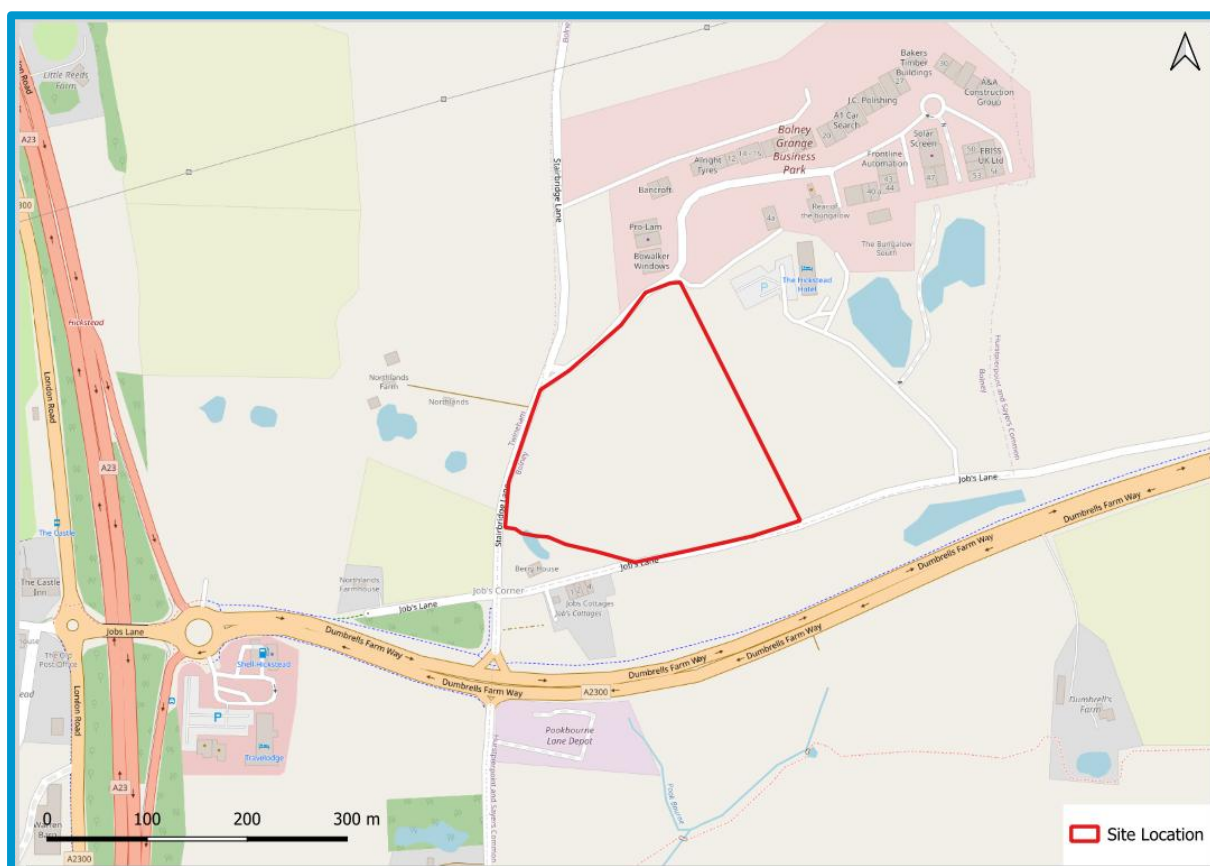


Figure 1.1: Proposed site location

1.4 Key Pollutants

The key pollutants associated with the construction phase of the project will be 'disamenity' or 'nuisance' dust. These pollutants are therefore considered as part of this assessment. Further details of the key pollutants are presented in Appendix A.

2 Legislation and Policy

This section summarises all legislation, policy, statutory and non-statutory guidelines relevant to the proposed development. Furthermore, the latest regional and local planning policy guidance specifically applicable to the proposed development has been reviewed.

2.1 European Union

The EU sets legally binding limit values for outdoor air pollutants to be met by EU countries by a given date. These limit values are based on the World Health Organisation (WHO) guidelines on outdoor air pollutants. These are legally binding and set out to protect human health and the environment by avoiding, preventing or reducing harmful air pollution effects.

The current air quality directive is the Directive 2008/50/EC³ on ambient air quality and cleaner air for Europe entered into force in June 2008. This merged most of the existing 'Daughter' Directives⁴ (apart from the fourth Daughter Directive); maintaining existing air quality objectives set out by 'Daughter' Directives for sulphur dioxide (SO₂), nitrogen dioxide (NO₂), and oxides of Nitrogen (NO_x), particulate matter (PM₁₀ and PM_{2.5}), lead (Pb), benzene (C₆ H₆), carbon monoxide (CO), ozone (O₃). It also includes related objectives, exposure concentration obligation and exposure reduction targets for PM_{2.5} (fine particles). The 'Daughter' Directives were based upon requirements set out in the first EU Ambient Air Quality Framework Directive 96/92/EEC⁵.

2.2 National Level - England

The UK government has a legal responsibility to meet the EU limit values. Part IV of the 1995 Environment Act⁶ sets guidelines for protecting air quality in the UK and forms the basis of the local air quality management. The Environment Act requires local authorities in the UK to review air quality in their area periodically and designate 'Air Quality Management Area' (AQMA) if improvements are necessary. Where an AQMA is designated, local authorities are also required to produce an 'Air Quality Action Plan' (AQAP) detailing the pollution reduction measures that need to be adopted to achieve the relevant air quality objectives within an AQMA.

As part of the Environment Act, the UK Government was required to publish a National Air Quality Strategy (NAQS) to establish the system of 'local air quality management' (LAQM) for the designation of AQMAs. This led to the introduction of the first Air Quality Strategy (AQS) in 1997⁷ which since has progressed through several revisions until it was replaced by the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007⁸. Each revision introduced strategies and regulations that considered measures for different pollutants by

³ European Union (2008): 'Ambient air quality assessment management', Framework Directive 2008/50/EC.

⁴ European Union. (1999), 'Ambient air quality assessment management', Framework Directive 1999/30/EC;

European Union. (2000), 'Ambient air quality assessment management', Framework Directive 2000/3/EC;

European Union. (2002), 'Ambient air quality assessment management', Framework Directive 2002/3/EC;

European Union. (2004), 'Ambient air quality assessment management', Framework Directive 2004/107/EC.

⁵ European Union. (1996), 'Ambient air quality assessment management', Framework Directive 96/62/EC.

⁶ Parliament of the United Kingdom. (1990), 'Environmental Protection Act', Chapter 43. Queen's Printer of Acts of Parliament.

⁷ Department for Environment Food and Rural Affairs. (1997), 'The United Kingdom National Air Quality Strategy', Cm 3587, Department for Environment Food and Rural Affairs.

⁸ Department for Environment Food and Rural Affairs. (2007), 'The Air Quality Strategy for England, Scotland, Wales and Northern Ireland', Cm 7169, Department for Environment Food and Rural Affairs.

tightening existing objectives and by introducing new ones to establish a common framework to protect human health and the environment by achieving ambient air quality improvements. The latest version of the AQS sets out a framework to enable local authorities to deliver for their communities and contribute to the long-term air quality goals, including the ambitious target for fine particulate matter (PM_{2.5})⁹.

The 2008 EU ambient air quality directive 2008/50/EC was transposed to England law through the introduction of the Air Quality (Standards) Regulations in 2010¹⁰ which also incorporated the fourth EU Daughter Directive (2004/107/EC) that set target values for certain toxic heavy metals and polycyclic aromatic hydrocarbons, (PAH).

2.2.1 National Planning Policy Framework

The principal national planning policy guidance in respect of the proposed development is the National Planning Policy Framework (NPPF)¹¹. The most recent update of the NPPF was published on 7th February 2025 by the Department for Communities and Local Government (DCLG).

The NPPF Section 110 states that:

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.

Section 187 states:

"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, taking into account relevant information such as river basin management plans..."

Section 198 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

⁹ Department for Environment Food and Rural Affairs. (2007), 'The Air Quality Strategy Framework for local authority delivery'.

¹⁰ Statutory Instrument. (2010), 'The Air Quality Standards Regulations', No. 1001. Queen's Printer of Acts of Parliament.

¹¹ National Planning Policy Framework. Accessible at:

https://assets.publishing.service.gov.uk/media/67aafe8f3b41f783cca46251/NPPF_December_2024.pdf

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 impact 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.

Section 199 states that:

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

2.2.2 Relevant National Planning Practice Guidance

The DCLG published a number of supporting web-based resources of Planning Practice Guidance (PPG)¹² to supplement the NPPF. With respect to air quality PPG provide guidance on when air quality is relevant to a planning application. It states that:

"Concerns could arise if the development is likely to generate air quality impact in an area where air quality is known to be poor. They could also arise where the development is likely to adversely impact upon the implementation of air quality strategies and action plans and/or, in particular, lead to a breach of EU legislation (including that applicable to wildlife)."

The PPG also states that, when deciding whether air quality is relevant to a planning application, the applicant should consider whether the proposal will:

"Significantly affect traffic in the immediate vicinity of the proposed development site or further afield. Introduce new point sources of air pollution,

Expose people to existing sources of air pollutants, Give rise to potentially unacceptable impact (such as dust) during construction for nearby sensitive locations.....,

¹² National Planning Practice Guidance web-based resource. Accessible at: <http://planningguidance.planningportal.gov.uk/>

- Affect biodiversity"

2.2.3 Statutory Nuisance

It is recognised that the planning system presents a way of protecting amenity. However, in cases where planning conditions are not applicable to a development/installation, the requirements of the Environmental Protection Act 1990 still apply. Under Part III of the Environmental Protection Act 1990, local authorities have a statutory duty to investigate any complaints of:

- "Any premises in such a state as to be prejudicial to health or a nuisance
- smoke emitted from premises so as to be prejudicial to health or a nuisance
- fumes or gases emitted from premises so as to be prejudicial to health or a nuisance
- any dust, steam, smell or other effluvia arising on industrial, trade or business premises and being prejudicial to health or a nuisance
- any accumulation or deposit which is prejudicial to health or a nuisance"

Where the local authority establishes any one of these issues constitutes a statutory nuisance and believes it to be unreasonably interfering with the use or enjoyment of someone's premises and/or is prejudicial to health, an abatement notice will be served on the person responsible for the offence or the owner/occupier. Failure to comply with the notice could lead to a prosecution. However, it is considered as a defence if the best practicable means to prevent or to counteract the effects of the nuisance are employed.

2.2.4 Relevant National Air Quality Standards

A summary of the relevant Air Quality Standards/Objectives (henceforth referred to as 'AQO') and the types of receptors that are relevant to this assessment are presented in Table 2.1 and Table 2.2. The AQO listed in Table 2.1 applies only at locations with relevant exposure where a member of the public could be exposed to a level of pollution concentration for the specific averaging periods for that pollutant as stated in Table 2.2.

Table 2.1: AQO Relevant to the Proposed Development

Pollutant	Air Quality Objectives		Concentration measured as:	Applicable to:	
	Concentration	Allowance			
Nitrogen Dioxide (NO ₂)	200 µg/m ³	18 per calendar year	1-hour mean	All authorities	local
	40 µg/m ³		Annual mean	All authorities	local
Nitrogen Oxide (NO _x)	30 µg/m ³		Annual mean	All authorities	local
Particulate Matter (PM ₁₀)	50 µg/m ³	35 per calendar year	24-hour mean	All authorities	local
	40 µg/m ³		Annual mean	All authorities	local

Pollutant	Air Quality Objectives		Concentration measured as:	Applicable to:
	Concentration	Allowance		
Particulate Matter (PM _{2.5}) Exposure reduction(a)	10 µg/m ³ (a)		Annual	All local authorities

Notes: (a) This is a target value set by the Interim Planning Guidance on the consideration of the Environment Act PM2.5 targets in planning decisions - published 4 October 2024

Source: Department for Environment Food and Rural Affairs (2022): 'Local Air Quality Management Technical Guidance' (TG.22).

Table 2.2: Examples of Where the AQO Should Apply

Averaging period	Objectives should apply at	Objectives should not apply at
Annual	<i>All locations where members of the public might be regularly exposed. Building façades of residential properties, schools, hospitals, care homes etc.</i>	<i>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 exposure is expected to be short-term.</i>
24 Hour	<i>All locations where the annual mean objective would apply, together with hotels. Gardens of residential properties.^(a)</i>	<i>Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short-term.</i>
1 Hour	<i>Kerbside sites where the public would not be expected to have regular access.</i>	

Notes: (a) "Such locations should represent parts of the garden where relevant public exposure to pollutants is likely, for example where there are seating or play areas. It is unlikely that relevant public exposure to pollutants would occur at the extremities of the garden boundary, or in front gardens, although local judgement should always be applied."

Source: Department for Environment Food and Rural Affairs (2022): 'Local Air Quality Management Technical Guidance' (TG.22).

2.3 Local Level – Mid Sussex District

2.3.1 Mid Sussex District Plan 2014 – 2031 (Adopted 28th March 2018)

The Mid Sussex District Plan 2014 – 2031 forms part of the development plan and is the statutory planning framework for the district. The role of the District Plan is to guide decision-making on planning applications and inform investment in social and physical infrastructure. The document highlights two policies regarding air quality.

DP29: Noise, Air and Light Pollution states:

“Strategic Objectives: 3) To protect valued landscapes for their visual, historical and biodiversity qualities; and 12) To support sustainable communities which are safe, healthy and inclusive.

Evidence Base: Data held by Environmental Health, Air Quality Action Plan – Stonepound Crossroads, Hassocks.

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

Air Pollution:

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

2.3.2 Air Quality and Emissions Mitigation Guidance for Sussex (Adopted 2021)

MSDC are members of the Sussex Air Quality Partnership (Sussex Air) which monitors pollutant concentrations across the region and have published guidance for developers on emissions mitigation¹³. The guidance includes the requirement for an emissions mitigation damage cost calculation to be carried out for all developments, to quantify the monetised health damage value associated with transport emissions from the Proposed Development to offset the impact.

¹³ Sussex Air Quality Partnership. 2020. Available at: <https://www.midsussex.gov.uk/media/4637/sussex-aq-guidance-v1-2020.pdf>

3 Methodology

3.1 Overview

This section provides the details of the methodological approach taken to assess the impacts on air quality from the construction and operation of the proposed development.

3.2 Scope of the Assessment

3.2.1 Construction Phase

A construction dust assessment was carried out to consider impacts from 'disamenity' (or 'nuisance') dust, as discussed in Appendix A3, associated with annoyance. The development has the potential to generate dust during the construction phase of the project. Although there are no standards (such as AQO) for dust disamenity or annoyance, various 'custom and practice' criteria have become established.

The construction phase of the proposed development will involve a number of activities that could potentially produce polluting emissions to air. These will be emissions of dust. However, they could also include releases of odours and/or more harmful gases and particles.

The IAQM's guidance and Air quality and emissions mitigation guidance for Sussex¹⁴ to assess the impacts of construction on human and ecological receptors has been followed in carrying out this air quality assessment. The guidance suggests that where a receptor is located within 250m (50m for statutory ecological receptors) of a site boundary and/or 50m of a route used by construction vehicles, up to 500m from the site entrance, a dust assessment should be undertaken. High sensitivity receptors are considered particularly sensitive when located within 20m of a works area. Figure 5.1 shows receptors that could be sensitive to dust that are located within 250m of the boundaries of the site.

Review of the Multi Agency Geographic Information for the Countryside (MAGIC) website¹⁵, which incorporates Natural England's interactive maps, has identified no statutory ecological sensitive receptor within 50m of the application site. The assessment of construction impacts on ecological receptors has not therefore been included within this assessment.

The annual mean concentrations of PM₁₀ and PM_{2.5} are well below their respective AQS, according to the UK-AIR background maps. This provides a good indication that PM₁₀ and PM_{2.5} concentrations for annual mean concentrations are likely to be below the respective AQSs at the application site and adjacent uses.

The IAQM guidance suggests that Demolition, Earthworks, Construction and Trackout should all be assessed individually to determine the overall significance of the construction phase.

¹⁴ Sussex Air Quality Partnership (2021): Air quality and emissions mitigation guidance for Sussex

¹⁵ Natural England and MAGIC partnership organisations. Multi Agency Geographic Information for the Countryside.
<http://www.magic.gov.uk/>

Construction Significance

For the purposes of this assessment, IAQM's 2024 construction dust guidance has been used. The IAQM guidance (Appendix B) suggests that demolition, earthworks, construction and trackout should all be assessed individually to determine the overall significance of the construction phase. In the IAQM dust guidance, the first step in assessing the risk of impacts is to define the potential dust emission magnitude. This can be considered 'Negligible', 'Small', 'Medium' or 'Large' for each of the construction stages. Whilst the IAQM provides examples of criteria that may be used to assess these magnitudes, the number of potential variables means that every site is different, and professional judgement must be applied by what the IAQM refers to as a "technically competent assessor". The construction phase assessment therefore relies on the experience of the appraiser.

As such, attempts to define precisely what constitutes a negligible, small, medium or large dust emission magnitude should be treated with caution. Factors such as the scale of the work, both in terms of size and time, the construction materials and the plant to be used must be considered.

The next step is to define the sensitivity of the area around the construction site. As stated in the IAQM guidance:

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

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

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

After defining the dust emission magnitudes for each stage and the sensitivity of the area, the risk of dust impacts can be determined. The IAQM provides a risk of impacts matrix for each construction stage. The overall significance for the construction phase can then be judged from the stages assessed, subject to professional judgement.

Combustion exhaust gases from diesel-powered plant and construction vehicles accessing the application site will also be released. However, the volumes and periods over which these releases will occur are unlikely to result in any significant peaks in local air pollution concentrations and therefore this has been scoped out of the assessment.

4 Baseline

The following section sets out the baseline conditions in relation to air quality for the proposed development. Baseline air quality information is available from a number of sources, including local and national monitoring data reports and websites. For the purposes of this assessment, data has been obtained from the Defra air quality resource website¹⁶ and from the Mid Sussex District Council ASR.¹⁷

4.1 UK-AIR Background Pollution

Defra provides estimated background concentrations of the UKAQS pollutants at the UK Air Information Resource (UK-AIR) website. These estimates are from detailed modelling tools and are presented as concentrations at central 1km² National Grid square locations across the UK. At the time of writing, the most recent background maps were from 2023 to 2025 and based on monitoring data from 2021.

The UK-AIR data are projected to represent a uniform combination of all emissions sources within the general area of a particular grid square location. Concentrations of pollutants at various sensitive receptor locations can be calculated by modelling the emissions from nearby pollution sources, such as a busy road, and then, adding it to the appropriate UK-AIR background datum.

The predicted background pollution concentrations for NO₂, PM₁₀, and PM_{2.5} for 2023 to 2025 are presented in Table 4.1. These data were taken from the central grid square location closest to the application site (i.e. grid reference: 527500, 120500).

Table 4.1: 2023 to 2025 Background Concentrations of Pollutants at the Application Site

Pollutant	Predicted background concentration (µg/m ³)			Averaging period	Air quality standard concentration (µg/m ³)
	2023	2024	2025		
NO ₂	8.81	8.49	8.18	annual mean	40
NO _x	11.4	10.9	10.5	annual mean	30
PM ₁₀	11.0	10.9	10.8	(gravimetric) annual mean	40
PM _{2.5}	6.34	6.26	6.19	(gravimetric) annual mean	10

The data in Table 4.1 show that annual mean background concentrations of NO₂, PM₁₀ and PM_{2.5} in the vicinity of the application site between 2023 and 2025 were predicted to be below their respective AQs. The data show that in 2024, NO₂, PM₁₀ and PM_{2.5} concentrations were predicted to be below the AQS by 80%, 73% and 38%, respectively.

Concentrations of all pollutants were predicted to decline each year, which is principally due to the forecast effect of cleaner vehicles being rolled out. It is noted that such improvements have not been universally realised.

¹⁶ Department for Environmental Food and Rural Affairs. Accessible at: <https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2015>

¹⁷ Mid Sussex District Council (2025). '2025 Air Quality Annual Status Report'

4.2 Local Sources of Monitoring Data

Monitoring at background locations is considered an appropriate source of data for the purposes of describing baseline air quality.

Automatic Monitoring

The MSDC currently undertakes automatic (continuous) monitoring at one site. The MSDC did not monitor for PM_{2.5} during 2024. In accordance with TG22 guidance, the PM_{2.5} levels were estimated using the nationally derived correction factor. The 2024 National Factor for Roadside sites has been used.

The PM_{2.5} concentration at this site can be estimated by subtracting the annual mean PM₁₀ concentration by the nationally derived correction factor.

This estimated PM_{2.5} level is lower than last year's concentration and, importantly, does not exceed the air quality standard concentration prior to the Interim Planning Guidance on the consideration of the Environment Act for PM_{2.5} target value for planning decisions. Next year's report will include a measured level for PM_{2.5} (rather than estimated).

The most recent data available from the site are included in Table 4.2 and Table 4.3.

Table 4.2: NO₂ Data from Automatic Monitor

Monitor	Type	In AQMA?	Distance to kerb of nearest road (m)	Distance from the application site (km)	NO ₂ annual mean concentration (µg/m ³)		
					2022	2023	2024
MSAQ43	R	N	1	10.6	24.3	21.1	18.7

Note: Exceedances of the NO₂ annual mean AQO of 40µg/m³ are shown in **bold**.

Table 4.3: PM₁₀ and PM_{2.5} Data from Automatic Monitor

Monitor	Type	In AQMA?	Distance from the application site (km)	PM ₁₀ annual mean concentration (µg/m ³)		
				2022	2023	2024
MSAQ43	R	N	10.5	18.8	17.0	16.3
Monitor	Type	In AQMA?	Distance from the application site (km)	PM _{2.5} annual mean concentration (µg/m ³)		
				2022	2023	2024
MSAQ43	R	N	10.5	-	11.1	10.3

Note: Exceedances of the annual mean AQO are shown in **bold**.

The data in Table 4.2 and Table 4.3 show that annual mean concentrations of NO₂, PM₁₀ and PM_{2.5} have been consistently below the respective AQS at all monitoring locations in recent years. However, as the monitors are located over 10km away from the application site, the concentrations are not considered to be representative of background conditions in the vicinity of the site.

Non-Automatic Monitoring

The MSDC operates an extensive non-automatic, NO₂ diffusion tube monitoring network across the area. The most recently available monitoring data for diffusion tubes located near the application site are included in Table 4.4: The closest monitoring site to the application site.

Table 4.4: Monitoring Data from MSDC's NO₂ Diffusion Tubes Nearest the Application Site

Monitor	Type	Distance to kerb of nearest road (m)	Distance from the application site (km)	In AQMA?	NO ₂ annual mean concentration (µg/m ³)		
					2022	2023	2024
MSAQ42	R	0.7	4.0	N	20.6	18.6	18.0

Note: Exceedances of the NO₂ annual mean AQO of 40µg/m³ are shown in **bold**.

The data in Table 4.4 show that the annual mean concentration of NO₂ has been well below the 40µg/m³ objective at the monitoring site since 2022. The closest monitoring station to the application site, MSAQ42 20 High Street, Ardingly, is approximately 4km to the northwest and recorded an annual mean NO₂ concentration of 18.0µg/m³ in 2024, which is well below the AQS.

The diffusion tube has recorded annual mean concentration below 60µg/m³; the indicative threshold above which exceedances of the short-term (hourly) AQS for NO₂ may be observed.

As the monitored NO₂ concentration measured at the closest diffusion tube represents a roadside location and is at a significant distance from the development site, the concentration is not considered representative of background concentrations across the development site.

Summary of Data used in Assessment

To ensure conservative predictions of pollutant concentrations, no reduction has been applied to the annual mean background NO₂, PM₁₀ and PM_{2.5} concentrations used in this assessment for future years. The NO₂, PM₁₀ and PM_{2.5} background concentrations have been taken from UK-AIR (2021) in the absence of any other suitable local monitoring data. The background concentrations used in the assessment are included in Table 4.5.

Table 4.5: Background Annual Mean Concentrations Used in This Assessment

Pollutant	Concentration (µg/m ³)	Data Source
NO ₂	8.18	UK-AIR (2021)
PM ₁₀	10.8	UK-AIR (2021)
PM _{2.5}	6.19	UK-AIR (2021)

5 Potential Impacts

5.1 Construction Impacts

The construction phase of the proposed development will involve a number of activities such as demolition, excavation, groundworks, cutting, construction, concrete batching and storage of materials, which have the potential to result in fugitive dust emissions throughout the construction phase. Vehicle movements both on-site and on the local road network also have the potential to result in the re-suspension of dust from haul roads and highway surfaces.

The construction phase of the proposed development is yet to be decided. For the purpose of this assessment, the earliest construction year is assumed to be from the spring to summer of 2026. The impacts from demolition, earthworks, construction and track-out have been considered. In order to assess the worst-case scenario, it has been assumed that all activities will be carried out for the duration of the construction period. Figure 5.1 shows the construction dust assessment study area based on the recommended distances by IAQM.

The estimates for the dust emission magnitude for demolition, earthworks, construction and trackout below are based on the professional experience of Aval Group's consultants, information provided by the client and Google Earth imagery.

Demolition

Demolition will involve clearance of the existing vegetation from the site at the start of the construction phase; therefore, no demolition of structures will take place. In accordance with the criteria outlined in the IAQM guidance, the overall dust emission magnitude for demolition is considered to be Small.

Earthworks

Earthworks will primarily involve excavating material, haulage, tipping and stockpiling, as well as site levelling and landscaping. The total site area is greater than 10,000m². The amount of earth proposed to be moved during the earthworks will be between 20,000 and 100,000 tonnes, with a bund height of less than 4m, and is expected to involve more than 10 heavy earth-moving vehicles.

To ensure a worst-case assessment, the overall dust emission magnitude for the earthworks stage is considered to be Large.

Construction

Localised use of cement powder and general handling of construction materials also have the potential to generate dust emissions, as does the effect of wind-blow from stockpiles of friable materials.

The total building volume across the whole site will be between 25,000m³ – 100,000m³ with no concrete piling, batching or sandblasting; therefore, with reference to the IAQM guidance, the overall dust emission magnitude for the construction phase is considered to be Medium.

Trackout

Construction traffic, when travelling over soiled road surfaces, has the potential to generate dust emissions and to also add soil to the local road network. During dry weather, soiled roads can lead to dust being emitted due to physical and turbulent effects of vehicles. When accessing the site using Stairbridge Lane and Job's Lane during construction, it is anticipated that the unpaved road length will be less than 50m.

Conservatively, it is anticipated that between 10 to 50 HDVs would access the application site each day throughout its development; therefore, considering the above, and with reference to the IAQM guidance, the dust emission magnitude for the trackout phase is considered to be Medium.

Emission Magnitude Summary

A summary of the dust emission magnitude as a result of the activities of Demolition, Earthworks, Construction and Trackout as specified in the IAQM guidance, and discussed above, are listed in Table 5.1: Dust Emission Magnitude for Construction Activities, Based on the IAQM Guidance

below. Overall, the dust emission magnitude is considered to be Medium.

Table 5.1: Dust Emission Magnitude for Construction Activities, Based on the IAQM Guidance

Activity	Dust Emission Magnitude
Demolition	Small
Earthworks	Large
Construction	Medium
Trackout	Medium

Table 5.1: Dust Emission Magnitude for Construction Activities, Based on the IAQM Guidance

presents the potential dust emission magnitude based on project-specific construction activities and is based on the criteria presented in Table C1 within Appendix C.

5.1.1 Sensitivity of the Area

Having established the emission magnitudes for each phase above, the sensitivity of the area must be considered to establish the significance of effects. The effect of dust emissions depends on the sensitivity of each receptor.

High sensitivity human receptors include residential dwellings, schools, and hospitals, but can also include locations such as car showrooms when considering the impacts of dust soiling.

The impacts of dust emissions from the sources discussed above have the potential to cause an annoyance to human receptors living in the local area. Within distances of 20m of the site boundary there is a high risk of dust impacts, regardless of the prevailing wind direction. Up to 100m from the construction site, there may still be a high risk, particularly if the receptor is downwind of the dust source and conditions are dry.

With the exponential decline in dust concentrations with distance from dust generating activities, it is considered that for receptors more than 250m from the site boundary, the risk is negligible. Furthermore, the risks at over 100m only have the potential to be significant in certain weather conditions (e.g. downwind of the source during dry periods).

The approximate number of high sensitivity human receptors in the vicinity of the application site is detailed in Table 5.1 below and shown in Figure 5.1.

Table 5.1: Approximate number of High Sensitivity Human Receptors close to the application site

Distance to site (m)	Approximate number of receptors	Receptor Details
<20	0	None identified
<50	<10	Bowalker Windows Ltd., Residential dwellings, Austin & White Automotives, Chia Laguna Holidays
<100	<50	Bowalker Windows Ltd., Residential dwellings, Austin & White Automotives, O'Kane Commercials Scrap metal dealer, Chia Laguna Holidays, The Hickstead Hotel
<250	<100	Bowalker Windows Ltd., Residential dwellings, Austin & White Automotives, O'Kane Commercials Scrap metal dealer, Chia Laguna Holidays, The Hickstead Hotel, Allright Tyres, Cutting Fitness, UKHelix

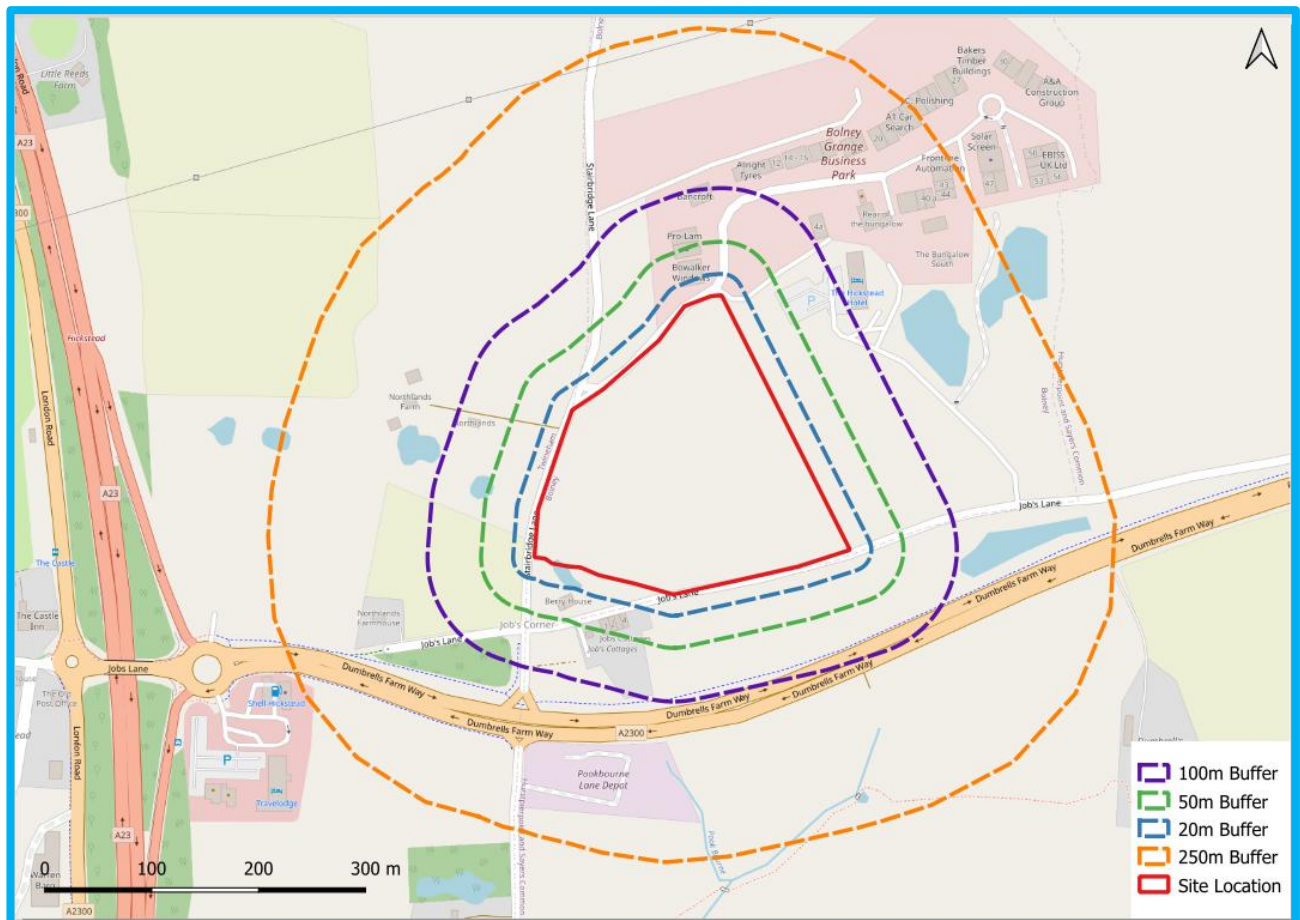


Figure 5.1: Construction assessment buffers

There are no high sensitivity receptors within 20m of the site boundary. Given the rural location and the limited number of high sensitivity receptors in close proximity to the site, the sensitivity of the area to dust soiling impacts can be defined as Low with reference to the IAQM guidance.

The UK-AIR data presented in Table 4.1 indicate that annual mean concentrations of PM₁₀ are likely to be well below 24µg/m³ within the vicinity of the site. Noting that there are no high sensitivity receptors within 20m of the site boundary, the sensitivity of the area to human health impacts is defined as Low with reference to IAQM guidance.

Review of the MAGIC website, which incorporates Natural England's interactive maps, has identified that the closest ecological receptor, Bedelands Farm LNR, is located approximately 4.0km to the east of the application site boundary. Therefore, based on distance alone, the proposed development can be considered to have a Negligible impact on local ecological receptors, with reference to the IAQM guidance.

5.1.2 Risk of Impacts

Having established the potential dust emission magnitudes and sensitivity of the area, the risk of impacts can be determined in accordance with the IAQM guidance. These are summarised in Table 5.2, below.

Table 5.2: Summary of Impact Risk by Construction Stage Based on the IAQM's Dust Guidance

Stage	Impact Risk		
	Nuisance Dust	PM ₁₀ Health Effects	Ecology
Demolition	Medium Risk	Low Risk	Negligible Risk
Earthworks	Medium Risk	Low Risk	Negligible Risk
Construction	Medium Risk	Low Risk	Negligible Risk
Trackout	Medium Risk	Low Risk	Negligible Risk

Overall, and for conservative purposes, the proposed development is considered to be of Medium Risk for nuisance dust soiling effects, Low Risk for PM₁₀ health effects and of Negligible Risk for impacts on nearby ecological receptors, in the absence of mitigation as presented in Table 5.2. Risk is based on the criteria presented in Table C 3 to Table C 6 within Appendix C.

5.1.3 Site Specific Mitigation

The IAQM lists recommended mitigation measures for Low, Medium and High Dust Impact Risks. The highly recommended mitigation measures for Medium-Risk sites are included in Appendix C of this report.

Where dust generation cannot be avoided in areas close to neighbouring properties, additional mitigation measures should be put in place, such as HGV tyre washing, windbreaks, sprinklers, and/or time or weather-condition limits on the operation of some items of plant or the carrying out of activities that are likely to generate a particularly significant amount of dust.

5.1.4 Residual Effects

After the implementation of the mitigation measures listed in Appendix C, the significance of each phase of the construction programme will be reduced and the residual significance of impact for the construction project is expected to be Negligible.

5.2 Emissions Mitigation Assessment

As outlined above, as the Proposed Development is a major development, it is required to carry out a damage cost calculation to quantify the health impact of transport emissions, in line with Sussex Air's Emissions Mitigation Guidance. The purpose of this assessment is to calculate a monetary value that will offset air quality impacts of a development once spent on mitigation. This assessment uses the latest version of Defra's Emissions Factor Toolkit (EFT v14.1) to work out the annual impact, with the 2% uplift to adjust the values to the price base year for the project appraisal, of additional transport in terms of NO_x and PM_{2.5} emissions (tonnes per year). This is then multiplied by a damage cost assigned to pollutants by Defra. The 2025 average cost per tonne of NO_x is £480 and for PM_{2.5} the average cost per tonne is £15,089 due to the low receptor sensitivity. Table 5.3 shows the damage cost calculation.

Table 5.3: Damage Cost Calculation

Pollutant	Development Emissions (tonnes/year)	Damage Cost (£)	5-year cost (£)	Total Damage Cost (£)
NOx	5.21	480	13,599	46,099
PM _{2.5}	0.40	15,089	32,500	

The damage cost calculation for the Proposed Development results in a total 5-year damage cost of £46,099. This gives an indication of the level of mitigation that will be required to offset transport emissions associated with the development.

Section 0 shows some examples of mitigation measures to offset the damage costs of the Proposed Development.

6 Discussion

6.1 Construction Phase Impacts and Mitigation Measures

The construction phase of the proposed development could potentially give rise to emissions which could cause dust soiling effects on adjacent uses. Following IAQM guidance, the construction phase of the proposed development can be considered to be Medium Risk with regard to dust soiling effects, Low Risk with regard to PM₁₀ health effects, and of Negligible Risk with regard to potential impacts on ecological receptors.

Following the implementation of the mitigation measures provided in Appendix C, emissions from the construction programme will be reduced and the residual significance of impact for the construction phase is expected to be Negligible, thus complying with the requirements of the NPPF¹¹.

Mitigation measures have been set out in accordance with the IAQM guidance for construction dust to reduce the potential impacts presented in Section 5.1.3.

The risks of construction activities in relation to dust soiling were deemed 'Medium Risk', while risks to human health were deemed 'Low Risk'. Therefore, it is recommended that the mitigation measures appropriate to mitigate 'Medium Risk' effects, as proposed in Appendix C, are applied during the construction phase.

6.2 Sussex Air Emissions Mitigation Assessment

As outlined in Section 5.2 above, the Proposed Development is required to spend approximately £46,099 on mitigation measures to offset the 5-year impact of the site, in line with Sussex Air Quality Partnership Technical Guidance. The possible mitigation measures should include investment in EV charging infrastructure (minimum 7kW fast charger) within the development, in accordance with Part S of the UK Building Regulations, and the preparation of a Travel Plan.

Assuming the Proposed Development follows the requirements of the Sussex Technical Guidance and invests in mitigation to the level outlined in Table 5.3, the proposed development will comply with local guidance and the Site's impact on air quality will be considered to be not significant.

7 Conclusion

This report provides an assessment of the following potential key impacts associated with the construction and operational phases of the proposed erection of 10 business units with a combined floor area of 19,927sqm under a flexible use comprising B8, B2 and Class E(g), and a car parking allocation for 204 spaces at land in Bolney Grange Industrial Park, Jobs Lane, RH17 5PB.

- Nuisance, loss of amenity and health impacts associated with the construction phase of the development of sensitive receptors;
- The suitability of the proposed development location in terms of existing air quality; and
- To demonstrate how the development has considered ways to minimise exposure to sources of air pollution.

A qualitative assessment of construction dust effects has been undertaken for the proposed scheme. The construction phase is predicted to have a 'Medium Risk' of nuisance and/or loss of amenity impacts due to dust nuisance. However, the risk of dust nuisance can be mitigated by implementing the appropriate mitigation measures listed in Appendix C.

An emissions mitigation assessment has been carried out in line with Sussex Air and MSDC guidance, including a damage cost calculation, and this found that approximately £46,099 is required to be spent on mitigation to offset the transport impact of the development. The specific mitigation to be employed on site should be communicated to MSDC before implementation.

It can be concluded that, following the mitigation measures and good practices mentioned above, the proposed development is not considered to conflict with national, regional or local planning policies in relation to construction and operational phase dust and air quality nuisance and, therefore, the development site can be considered suitable for the proposed commercial development.

Appendices

Appendix A:

Appendix B:

Appendix C:

Appendix D:

Key Pollutants

Construction Dust Assessment Criteria

Mitigation Measures for Construction

Impacts

Site Drawings

Appendix A : Key Pollutants

A1. Particulate Matter

Particulate matter is a term which refers to a mixture of solid particles and liquid droplets found in the air. These particles come in many sizes and shapes and can be made up of hundreds of different chemicals. Some particles, such as dust, dirt, soot, or smoke, are large or dark enough to be seen with the naked eye. Others can be so small that they can only be detected using an electron microscope. Fine dust, essentially particles up to 10 microns (μm), is commonly referred to as PM_{10} .

PM_{10} is known to arise from a number of sources such as construction sites, road traffic movement, industrial and agricultural activities. Very fine particles ($\text{PM}_{2.5}$ – $\text{PM}_{0.1}$) are known to be associated with pollutants such as oxides of nitrogen (NO_x) and sulphur dioxide (SO_2) emitted from power plants, industrial installation and road transport sources.

$\text{PM}_{2.5}$ is generally associated with combustion and traffic sources and is more likely to be associated with the operational phase of the proposed development.

A3. 'Disamenity' Dust

'Dust' is generally regarded as particulate matter up to $75\mu\text{m}$ (micron) diameter and in an environmental context can be considered in two categories, according to size: coarser dust (essentially particles greater than $10\mu\text{m}$) and fine particulate matter (PM_{10} and $\text{PM}_{2.5}$) as set out above. Coarser dust (essentially particles greater than $10\mu\text{m}$) is generally regarded as 'disamenity dust' and can be associated with annoyance, although there are no official standards (such as AQO) for dust annoyance. Disamenity dust is more readily described than defined as it relates to the visual impact of short-lived dust clouds and the long-term soiling of surfaces.

Although it is a widespread environmental phenomenon, dust is also generated through many human activities including industrial and materials handling sites, construction and demolition sites and roads. Dust is generally produced by mechanical action on materials and is carried by moving air when there is sufficient energy in the airstream. More energy is required for dust to become airborne than for it to remain suspended.

Appendix B : Construction Dust Assessment Criteria

IAQM guidance framework on assessing the risk of dust proposes the construction phase should be split into phases dependent on their potential impacts, determining the risk for each individually. Therefore, this assessment has determined the risk of the four construction categories put forward by the IAQM guidance:

- Demolition;
- Earthworks;
- Construction; and
- Trackout (transport of dust and dirt onto the public road network).

The IAQM guidance framework states that the risk of dust impacts from the four categories can be defined as 'negligible', 'low risk', 'medium risk' or 'high risk' depending upon the scale and nature of the construction activity and the sensitivity and proximity of receptors to the construction site boundary. This categorisation is used to put forward appropriate mitigation measures, reducing the level of effects from the dust impacts so they are not significant.

The assessment of dust impacts using the IAQM guidance considers three separate effects from dust:

- Annoyance due to dust soiling;
- Harm to ecological receptors; and
- The risk of health effects due to significant increase in exposure to PM₁₀.

Step 1 of the assessment is set out to screen for the requirement for a more detailed assessment for the proposed development. The screening criteria states:

A 'human receptor' within:

- 250 m of the boundary of the application site; or
- 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance(s).

An 'ecological receptor' within:

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

Where there are no receptors and the level of risk is deemed 'negligible', there is no need for further assessment.

Step 2A of the assessment enables the overall dust emission magnitude (small, medium or large) from each dust source (demolition, earthworks, construction and trackout) to be identified in relation with the criteria outlined in Table B 1.

Table B 1: Dust emission magnitude

Source	Large	Medium	Small
Demolition	Total building volume >50,000 m ³ , potentially dusty construction material (e.g. concrete), on-site crushing and screening, demolition activities >20 m above ground level.	Total building volume 20,000 m ³ – 50,000 m ³ , potentially dusty construction material, demolition activities <10 – 20 m above ground level.	Total building volume <20,000 m ³ , construction material with low potential for dust release (e.g. metal cladding or timber), demolition activities <10 m above ground, demolition during wetter months.
Earthworks	Total site area >10,000 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 >8 m in height, total material moved >100,000 tonnes.	Total site area 2,500 m ² – 10,000 m ² , moderately dusty soil type (e.g. silt), 5-10 heavy earth moving vehicles active at any one time, formation of bunds 4 m – 8 m in height, total material moved 20,000 tonnes – 100,000 tonnes.	Total site area <2,500 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, total material moved <20,000 tonnes, earthworks during wetter months.
Construction	Total building volume >100,000 m ³ , on site concrete batching or sandblasting.	Total building volume 25,000 m ³ – 100,000 m ³ , potentially dusty construction material (e.g. concrete), on site concrete batching.	Total building volume <25,000 m ³ , construction material with low potential for dust release (e.g. metal cladding or timber).
Track out	>50 HDV (>3.5t) outward movements ^a in any one day ^b , potentially dusty surface	10-50 HDV (>3.5t) outward movements ^a in any one day ^b , moderately dusty	<10 HDV (>3.5t) outward movements ^a in any one day ^b , surface material with low

Source	Large	Medium	Small
	material (e.g. high clay content), unpaved road length >100 m.	surface material (e.g. high clay content), unpaved road length 50 m – 100 m.	potential for dust release, unpaved road length <50 m.

Notes: ^aVehicle movement is a one-way journey. i.e. from A to B, and excludes the return journey.

^b HDV movements during a construction project vary over its lifetime, and the number of movements is the maximum not the average.

Step 2B allows for the sensitivity of the area (high, medium or low) to be assessed and takes into account a number of factors:

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

Receptor sensitivity has been based on the highest of any criteria being met thus, the assessment is considered as robust. The sensitivity of the area is further determined for dust soiling, human health and ecosystem effects by considering the criteria presented in Table B 2.

Table B 2: Magnitude of Receptor Sensitivity

Source	High	Medium	Low
Sensitivities of people to dust soiling effects	• Users can reasonably expect enjoyment of a high level of amenity; or • The appearance, aesthetics or value of their property would be diminished by soiling; and • The people or property would reasonably be expected to be present continuously, or at least regularly for extended	• Users would expect^a to enjoy a reasonable level of amenity, but would not reasonably expect^a to enjoy the same level of amenity as in their home; or • The appearance, aesthetics or value of their property could be diminished by soiling; or • The people or property wouldn't reasonably be expected^a to be	• The enjoyment of amenity would not reasonably be expected^a; or • Property would not reasonably be expected^a to be diminished in appearance, aesthetics or value by soiling; or • There is transient exposure, where the people or property would reasonably be expected to be present only for limited periods of

Source	High	Medium	Low
	periods, as part of the normal pattern of use of the land. Indicative examples include dwellings, museums and other culturally important collections, medium and long term car parks^b and car showrooms.	present here continuously or regularly for extended periods as part of the normal pattern of use of the land. Indicative examples include parks and places of work.	time as part of the normal pattern of use of the land. Indicative examples include playing fields, farmland (unless commercially-sensitive horticultural), footpaths, short term car parks^b and roads.
Sensitivities of people to health effects of PM ₁₀	- Locations where members of the public are exposed over a time period relevant to the air quality objective for PM₁₀ (in the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed for eight hours or more in a day).^c - Indicative examples include residential properties. Hospitals, schools and residential care homes should also be considered as having equal sensitivity to residential areas for the purposes of this assessment.	- Locations where the people exposed are workers^d, and exposure is over a time period relevant to the air quality objective for PM₁₀ (in the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed for eight hours or more in a day). - Indicative examples include office and shop workers, but will generally not include workers occupationally exposed to PM₁₀, as protection is covered by Health and Safety at Work legislation.	- Locations where human exposure is transient.^e - Indicative examples include public footpaths, playing fields, parks and shopping streets.

Source	High	Medium	Low
Sensitivities of receptors to ecological effects	- Locations with an international or national designation and the designated features may be affected by dust soiling; or - Locations where there is a community of a particularly dust sensitive species such as vascular species included in the Red Data List For Great Britain. - Indicative examples include a Special Area of Conservation (SAC) designated for acid heathlands or a local site designated for lichens adjacent to the demolition of a large site containing concrete (alkali) buildings.	- Locations where there is a particularly important plant species, where its dust sensitivity is uncertain or unknown; or - Locations with a national designation where the features may be affected by dust deposition. - Indicative example is a Site of Special Scientific Interest (SSSI) with dust sensitive features.	- Locations with a local designation where the features may be affected by dust deposition. - Indicative example is a local Nature Reserve with dust sensitive features.

Notes: ^a People's expectations will vary depending on the existing dust deposition in the area, see Section 4.2.

^b Car parks can have a range of sensitivities depending on the duration and frequency that people would be expected to park their cars there, and the level of amenity they could reasonably expect whilst doing so. Car parks associated with work place or residential parking might have a high level of sensitivity compared to car parks used less frequently and for shorter durations, such as those associated with shopping. Cases should be examined on their own merits.

^c This follows Defra guidance as set out in LAQM.TG (09).

^d Notwithstanding the fact that the air quality objectives and limit values do not apply to people in the workplace, such people can be affected to exposure of PM10. However, they are considered to be less sensitive than the general public as a whole because those most sensitive to the effects of air pollution, such as young children are not normally workers. For this reason workers have been included in the medium sensitivity category.

^e There are no standards that apply to short-term exposure, e.g. one or two hours, but there is still a risk of health impacts, albeit less certain.

^f Cheffing C. M. & Farrell L. (Editors) (2005), The Vascular Plant. Red Data List for Great Britain, Joint Nature Conservation Committee.

The final step, step 2C allows for the risk of impacts to be defined. The dust emission magnitude derived in step 2A is combined with the sensitivity of the area defined in step 2B to determine the risk of effects on:

- Annoyance due to dust soiling;
- Harm to ecological receptors; and
- The risk of health effects due to an increase in exposure to PM₁₀.

The criteria for each of the dust sources are presented in Table B 3, Table B 4, Table B 5 and Table B 6.

Table B 3: Demolition

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Low	Medium Risk	Low Risk	Negligible

Table B 4: Earthworks

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Table B 5: Construction

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible

Table B 6: Track out

Sensitivity of Area	Dust Emission Magnitude		
	Large	Medium	Small
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Negligible
Low	Low Risk	Low Risk	Negligible

Appendix C : IAQM Highly Recommended Mitigation Measures for Sites with a Medium Risk of Dust Impacts

Please refer to the IAQM's Guidance on the Assessment of Dust from Demolition and Construction (2024) and Guidance on Air Quality Monitoring in the Vicinity of Demolition and Construction Sites (2018) for further, "desirable", mitigation measures:

Communications

- Develop and implement a stakeholder communications plan that includes community engagement before work commences on site
- Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.
- Display the head or regional office contact information.
- Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. The level of detail will depend on the risk and should include as a minimum the highly recommended measures in this document. The desirable measures should be included as appropriate for the site. The DMP may include monitoring of dust deposition, dust flux, real time PM₁₀ continuous monitoring and/or visual inspections.

Site Management

- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.
- Make the complaints log available to the local authority when asked.
- Record any exceptional incidents that cause dust and/or air emissions, either on- or off- site, and the action taken to resolve the situation in the logbook.

Monitoring

- Undertake daily on-site and off-site 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.
- 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 PM₁₀ continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three

months before work commences on site or, if it 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.
- Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period.
- Avoid site runoff of water or mud.
- Keep site fencing, barriers and scaffolding clean using wet methods.
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.
- Cover, seed or fence stockpiles to prevent wind whipping.

Operating Vehicle/Machinery and Sustainable Travel

- Ensure all on-road vehicles comply with the requirements of the Low Emission Zone 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.
- Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on un-surfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate).
- Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.
- Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).

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.
- Ensure equipment is readily available on site to clean and dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.

Waste Management

- Avoid bonfires and burning of waste materials.

Demolition

- Ensure effective water suppression is used during demolition operations. Handheld sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.
- Avoid explosive blasting, using appropriate manual or mechanical alternatives.
- Bag and remove any biological debris or damp down such material before demolition.

Earthworks

- Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.
- Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.
- Only remove the cover in small areas during work and not all at once.

Construction

- Avoid scabbling (roughening of concrete surfaces) if possible.
- 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.
- 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.
- For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust.

Trackout

- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.

- Avoid dry sweeping of large areas.
- Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.
- Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.
- Record all inspections of haul routes and any subsequent action in a site logbook.
- Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).
- Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.
- Access gates to be located at least 10 m from receptors where possible.

Appendix D : Site Drawings

Please see planning portal for the most recent drawings submitted as part of the planning application.