AIR QUALITY EXPERTS

M SCOTT PROPERTIES LTD

LAND WEST OF SCHOOL LANE

HIGHAM

AIR QUALITY ASSESSMENT

FEBRUARY 2026

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M Scott Properties Ltd

Land West of School Lane, Higham

Air Quality Assessment

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APPENDIX A: Construction Dust Risk Assessment

1 Introduction

1.1 Air Quality Experts Limited has been instructed by M Scott Properties Ltd to undertake an Air Quality Assessment (AQA) in relation to the proposed development on Land West of School Lane, Higham.

1.2 The application site is approximately 2.80 hectares, located at the north of Higham, within the authoritative boundary of Gravesham Borough Council (GBC). The site location in relation to the Local Highway Network is illustrated in **Figure 1.1** below.

Figure 1.1: Site Location in Relation to the Local Highway Network

1.3 To the east, the Site is bordered by School Lane. To the immediate south lie the back gardens of the residential properties along High View. To the west, the Site is bounded by Taylors Lane, beyond which lies further residential development to the south-west and open countryside to the north-west. To the north, the Site is enclosed by a dense belt of vegetation and residential properties to the north-east, beyond which is the Knowle Country House wedding venue.

1.4 The existing red line boundary is illustrated in **Figure 1.2** overleaf.

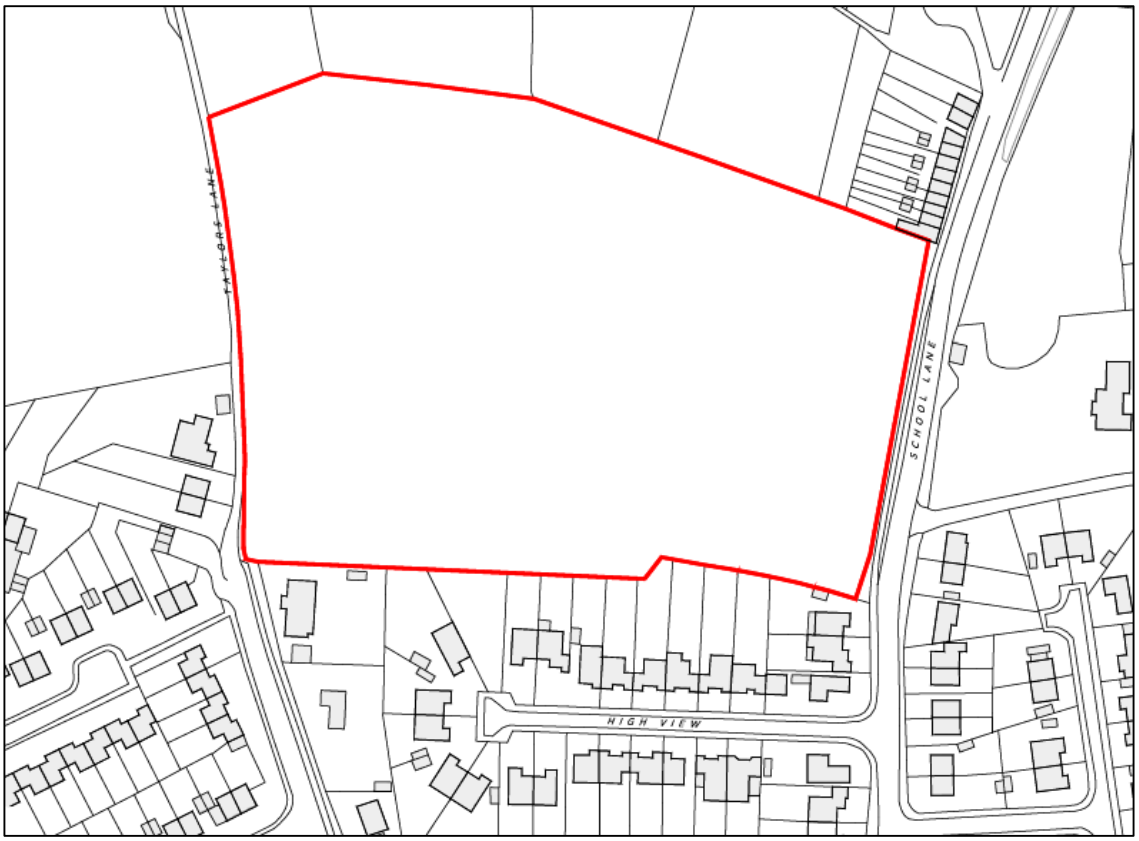

Figure 1.2: Existing Red Line Boundary

1.5 The application to which this AQA relates to a Planning Application consisting of:

"Outline planning application for the development of up to 50 residential dwellings (including affordable housing), vehicular access road from School Lane, internal roads, car parking, landscaping, public open space, and other associated works and infrastructure. All matters to be reserved with the exception of the main site access."

1.6 The illustrative outline masterplan is represented in **Figure 1.3** overleaf.

Figure 1.3: Illustrative Outline Masterplan

1.7 This AQA has been undertaken in order to establish whether the site's location is considered suitable for the proposed residential use and to quantify any likely pollution impacts upon the surrounding area or local sensitive receptors as a result of the construction and/or operation of the proposed development.

1.8 In the event where potential impacts are identified, specific mitigation measures will be recommended to minimise significant pollution effects and help safeguard the health and well-being of existing and proposed sensitive receptors within the local area.

1.9 The AQA is divided up into the following sections:

- **Section 2 -** Legislation and Policy Context;
- **Section 3 -** Assessment Methodology and Significance Criteria;
- **Section 4 -** Baseline Site Conditions;
- **Section 5 -** Evaluation of Potential Effects;
- **Section 6 -** Mitigation Measures;
- **Section 7 -** Residual Effects and Conclusions;
- **Appendix A -** Construction Dust Risk Assessment;

2 Legislation and Policy Context

National Planning Policy

The Air Quality Strategy[1]

2.1 The Air Quality Strategy (AQS) fulfils the statutory requirement of the Environment Act 1995 as amended by the Environment Act 2021 to publish an Air Quality Strategy setting out air quality standards, objectives, and measures for improving ambient air quality every 5 years.

2.2 The revised strategy (2023) supersedes Volume 1 of the 2007 air quality strategy in England only. In Northern Ireland and Scotland, the strategy (Volume 1) remains in force.

2.3 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 ambitious new targets for fine particulate matter ($PM_{2.5}$).

2.4 The AQS sets standards and objectives for pollutants to protect human health, vegetation and ecosystems. The pollutant objectives are the dates by which each standard is to be achieved, taking into account economic considerations, practical and technical feasibility.

2.5 Under the Environment Act 2021, 2 new legally-binding long-term targets have been set each with an interim target, in order to reduce concentrations of fine particulate matter, $PM_{2.5}$. The two new targets are:

- 10 µg/m^3 annual mean concentration $PM_{2.5}$ nationwide by 2040, with an interim target of 12 µg/m^3 by January 2028.
- 35% reduction in average population exposure by 2040, with an interim target of a 22% reduction by January 2028, both compared to a 2018 baseline.

2.6 The new targets should help drive reductions in the worst $PM_{2.5}$ hotspots across the country, whilst ensuring nationwide action to improve air quality.

2.7 The main air quality pollutants of concern with regards to new developments such as the one proposed at this Application Site are the traffic related pollutants of Nitrogen Dioxide (NO_2) and Particulate Matter of size 10 and 2.5 microns (PM_{10} and $PM_{2.5}$).

[1] Department for Environment, Food & Rural Affairs (DEFRA), (2023), 'Air Quality Strategy: framework for local authority delivery. Available on: Air quality strategy: framework for local authority delivery - GOV.UK (www.gov.uk)

2.8 The relevant air quality objectives, as they currently apply in the United Kingdom are presented in **Table 2.1** below.

Pollutant	Air Quality Objectives		Date to be achieved by (and maintained thereafter)
	Concentration	Measured As	
Nitrogen Dioxide (NO_2)	200 µg/m^3	1-hour mean not to be exceeded more than 18 times per year	31/12/2005
	40 µg/m^3	Annual mean	31/12/2005
Particles (PM_{10})	50 µg/m^3	24-hour mean not to be exceeded more than 35 times per year	31/12/2004
	40 µg/m^3	Annual mean	31/12/2004
Particles ($PM_{2.5}$) (UK – Except Scotland)	20 µg/m^3	Annual mean	2020
Particles ($PM_{2.5}$) (UK – Urban Areas)	Target of 15% reduction in concentrations at urban background		Between 2010 and 2020
Particles ($PM_{2.5}$) (England)	12 µg/m^3	Interim annual mean target to be achieved by 2028	2028*
	Target of 22% reduction in average population exposure		
	10 µg/m^3	Legally binding nationwide annual mean target to be achieved by 2040	2040**
	Target of 35% reduction in average population exposure		

*Note: Interim $PM_{2.5}$ targets are to be achieved by 2028

**Note: Legally binding $PM_{2.5}$ targets are to be achieved by 2040

Table 2.1: Air Quality Objectives in the UK

Air Quality Standards Regulations, 2019[2]

2.9 The air quality limit values set out in EU Directive (2008/50/EC) are transposed into English Law by the Air Quality Standards Regulations (2010) and amended in 2019. This imposes duties on the Secretary of State in relation to achieving the limit values.

[2] UK Parliament, (2019). 'The Air Quality (Amendment of Domestic Regulations) (EU Exit) Regulations 2019', HMSO, London.

2.10 With regards to dust, it is recognised that major construction works may give rise to dust emissions within the PM_{10} and $PM_{2.5}$ size fraction and it is noted within section 79 of the Environmental Protection Act 1990 that a statutory nuisance is defined as:

"…b - smoke emitted from premises so as to be prejudicial to health or a nuisance;

c - fumes or gases emitted from premises so as to be prejudicial to health or a nuisance;

d - any dust, steam, smell or other effluvia arising on industrial, trade or business premises and being prejudicial to health or a nuisance…".

2.11 In January 2019, 'The Air Quality (Amendment of Domestic Regulations) (EU Exit) Regulations 2019' amends the Air Quality Standards Regulations 2010 to transpose provisions of the EU Ambient Air Quality Directive (2008/50/EC) concerning the contribution made by natural sources and winter sanding or salting of roads. This amendment states:

"(1) The Air Quality Standards Regulations 2010(4) are amended as follows.

(2) After regulation 17(2) insert—

(3) Where, in accordance with Article 20 of Directive 2008/50/EC, the Commission has been informed that a limit value has been exceeded for a reason attributable to natural sources, that limit value will not be considered to be exceeded for the purposes of these Regulations.

(3) After regulation 26(1), insert—

(1A) Where, in accordance with Article 21 of Directive 2008/50/EC, the Secretary of State has designated zones within which limit values for PM_{10} are exceeded due to the re-suspension of particulates following winter sanding or salting of roads, the Secretary of State's duty under paragraph (1) applies to those zones only in so far as the excess is attributable to other sources of PM_{10}.".

National Planning Policy Framework (NPPF) 2024[3]

2.12 The NPPF was updated in December 2024 and supersedes all the previous versions. The NPPF was slightly amended on 7 February 2025, only to correct cross-references from

[3] Ministry of Housing, Communities and Local Government, (2024), 'National Planning Policy Framework', London.

footnotes 7 and 8, and amend the end of the first sentence of paragraph 155 to make its intent clear.

2.13 The purpose of the NPPF is to set out the Government's policies in relation to planning for England and how these should be applied.

2.14 Paragraph 8 within Section 2. Achieving Sustainable Development states:

"Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives): ...

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."

2.15 In relation to the planning conditions and obligations, paragraphs 56 and 57 within Section 4 'Decision-making', states the following:

"Local planning authorities should consider whether otherwise unacceptable development could be made acceptable through the use of conditions or planning obligations. Planning obligations should only be used where it is not possible to address unacceptable impacts through a planning condition.

Planning conditions should be kept to a minimum and only imposed where they are necessary, relevant to planning and to the development to be permitted, enforceable, precise and reasonable in all other respects. Agreeing conditions early is beneficial to all parties involved in the process and can speed up decision- making. Conditions that are required to be discharged before development commences should be avoided, unless there is a clear justification.".

2.16 Section 9 of the NPPF refers to promoting sustainable transport. In relation to air quality, paragraph 109 states that:

"Transport issues should be considered from the earliest stages of plan-making and development proposals, using a vision-led approach to identify transport solutions that deliver well-designed, sustainable and popular places. This should involve:

... c) understanding and addressing the potential impacts of development on transport networks; ...

e) identifying and pursuing opportunities to promote walking, cycling and public transport use; and

f) identifying, assessing and taking into account the environmental impacts of traffic and transport infrastructure – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains.

2.17 Additionally, paragraph 110 states:

"The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health.…".

2.18 Section 15 'Conserving and enhancing the natural environment' addresses air quality within a number of paragraphs, this is detailed below.

2.19 Paragraph 187 states;

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

…e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans;…".

2.20 Paragraph 198;

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

2.21 Paragraph 199 adds;

"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.".

Planning Practice Guidance – Air Quality[4]

2.22 The Planning Practice Guidance (PPG) is used to support the National Planning Policy Framework and is published online. The guidance on air quality was originally published in 2014 and updated in November 2019. The PPG provides various principles on how planning can take account of the impact of new development on air quality.

2.23 The guidance refers to the specific issues that may need to be considered when assessing air quality impacts. It states:

"Considerations that may be relevant to determining a planning application include whether the development would:

Lead to changes (including any potential reductions) in vehicle-related emissions in the immediate vicinity of the proposed development or further afield…

Introduce new point sources of air pollution…

[4]Ministry of Housing, Communities and Local Government, (2019), 'Planning Practice Guidance-Air Quality', Ministry of Housing, Communities and Local Government, London. Available on: https://www.gov.uk/guidance/air-quality--3#history.

Expose people to harmful concentrations of air pollutants…

Give rise to potentially unacceptable impacts (such as dust) during construction for nearby sensitive locations;

Have a potential adverse effect on biodiversity…".

2.24 Guidance on how detailed an air quality assessment need to be is provided and states:

"Assessments need to be proportionate to the nature and scale of development proposed and the potential impacts (taking into account existing air quality conditions", and because of this are likely to be locationally specific…".

2.25 Reference to how air quality can be mitigated states that:

"Mitigation option will need to be locationally specific, will depend on the proposed development and need to be proportionate to the likely impact. It is important that local planning authorities work with the applicants to consider appropriate mitigation so as to ensure new development is appropriate for its location and unacceptable risks are prevented…".

Local Planning Policy

2.26 The Development Plan for Gravesham currently consists of:

- Gravesham Local Plan Core Strategy and Local Plan Policies Map (2014)
- Gravesham Local Plan First Review (1994) – saved Policies
- Kent County Council Minerals and Waste Local Plan 2024-30 (adopted March 2025)

2.27 Planning law sets out that planning applications are determined in accordance with the Councils Development Plan unless material considerations indicate otherwise.

Gravesham Local Plan Core Strategy (September 2014) [5]

2.28 There are no policies specific to Air quality. However, under Appendix 3: Policy Delivery and Monitoring states the following:

"…The Council's Air Quality Progress Report 2012 highlights that reducing emissions from HGV and car traffic remains the key challenge to improve air quality for the Borough. The Council will consider the expansion air quality monitoring in the Borough to facilitate the

[5] Gravesham Borough Council (GBC). 2014. Gravesham Local Plan Core Strategy. GBC

assessment of baseline conditions, in particular the monitoring of nitrogen dioxide as well as for implementing measures to improve air quality."

Additionally, under 'strategic objectives (SO) in section 3, SO17 states :

"Increase accessibility, reduce the need to travel, minimise congestion and • improve air quality through the improved provision of local public transport and the provision of local jobs and services."

3 Assessment Methodology and Significant Criteria

3.1 This section outlines the assessment methodology and the criteria that have been used to assess the magnitude and significance of risk associated with the proposed development.

3.2 **Table 3.1** below summarises the key information sources used in this assessment.

Source	Details
Department for Environment, Food and Rural Affairs (Defra)	**COVID-19 Supplementary Guidance – Local Air Quality Reporting in 2021**[6] Prepared by DEFRA and the GLA in order to inform local authorities in England of the key changes and points of reference with respect to LAQM duties, as described in Part IV of the Environment Act 1995, for the 2021 reporting year.
	Local Air Quality Management (LAQM) – Technical Guidance (TG22)[7] The LAQM (TG22) supersedes all previous versions, the most recent being the April 2021 release of LAQM (TG16). It is designed to support local authorities in carrying out their duties under the Environment Act 1995 as amended by the Environment Act 2021, the Environment (Northern Ireland) Order 2002, and subsequent regulations.
	LAQM.TG(22) Supplementary Guidance England excl. London -Determining the impact of air quality improvement measures[8] This supplementary guidance offers a structured methodology for determining the future impacts of air quality improvement measures.
	The Local Air Quality Management (LAQM)Tools.[9] Contain information pertaining to monitoring networks across the UK and provides tools, which aid in the data processing and the estimation of pollutant concentrations with reference to the specific year of study.
	LAQM Background Maps (2021 Reference Year)[10] These provide mapped estimates of background concentrations for specific pollutants (NO_X, NO_2, PM_{10} and $PM_{2.5}$) using a 1x1 km grid. The maps also provide information on how pollutant concentrations change over time or across a wide area, while allowing for the assessment of new pollutant sources that are introduced into an area and the impact they may have upon local air quality.

[6] Department of Environment, Food and Rural Affairs (DEFRA) and Greater London Authority (GLA). (2021). 'Local Air Quality Management Reporting in 2021 COVID-19 Supplementary Guidance'. DEFRA and GLA, London.
[7] Department of Environment, Food and Rural Affairs (DEFRA). (2022). 'Local Air Quality Management Technical Guidance (TG22)'. DEFRA, London
[8] Department of Environment, Food and Rural Affairs (DEFRA). (2024). 'LAQM.TG(22) Supplementary Guidance England excl. London - Determining the impact of air quality improvement measures'. DEFRA, London
[9] https://laqm.defra.gov.uk/air-quality/air-quality-assessment/list-of-available-tools/
[10] Department of Environment, Food and Rural Affairs (DEFRA). (2021), 'Background Mapping data for local authorities – 2021', DEFRA, London. https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2021

Environmental Protection UK (EPUK) & Institute of Air Quality Management (IAQM)	**Land-Use Planning & Development Control: Planning for Air Quality (2017)**[11] This document provides advice and guidance to ensure that air quality is adequately considered in the land-use planning and development control processes. This is particularly applicable to assessing the effect of changes in exposure of members of the public resulting from residential and mixed-use developments, especially those within urban areas where air quality is poorer.
	Guidance on the assessment of dust from demolition and construction (2024 v.2.2)[12] The document provides guidance on how to undertake a construction dust impact assessment (including demolition and earthworks). The emphasis in the document is on providing the means for classifying the risk of dust impacts from a construction site, which then allows appropriate mitigation measures to be identified.
The National Atmospheric Emissions Inventory (NAEI)	**The UK NAEI**[13] estimates annual pollutant emissions from 1970 to the most current publication year for the majority of pollutants. The NAEI is compiled on an annual cycle, each year the latest set of data are added to the inventory and the full time series is updated to take account of improved data and any advances in the methodology used to estimate the emissions.
London Councils	**Air Quality and Planning Guidance**[14] This guidance is aimed at local authorities, developers and their consultants, and provides technical advice on how to deal with planning applications that could have an impact on air quality. Originally developed for London but consistently adopted across the UK with a view of reducing exposure to air pollution.
Local Authority	**Gravesham Borough Council ASR**[15] This Annual Status Report (ASR) highlights the status of the air quality within the borough, discussing AQMAs, the monitoring strategy and concentrations of pollutants in the air.

Table 3.1: Key Information Sources

Scope of Air Quality Assessment

3.3 This Air Quality Assessment considers the suitability of the site for the proposed use and assesses whether any significant air quality impacts are anticipated as a result of the construction and/or the operation of the proposed development.

[11] Environmental Protection UK & Institute of Air Quality Management (EPUK & IAQM) (2017) Land-Use Planning & Development Control: Planning for Air Quality, EPUK & IAQM, London
[12] IAQM, (2024). 'Assessment of dust from demolition and construction 2024 v2.2', IAQM, London.
[13] National Atmospheric Emissions Inventory (NAEI). Available from: https://naei.beis.gov.uk/
[14] London Councils. (2007), Air Quality and Planning Guidance, The London Air Pollution Planning and the Local Environment (APPLE) working group, London.
[15] Gravesham Borough Council (GBC), (2025). '2025 Air Quality Annual Status Report (ASR) Draft'. GBC

3.4 A staged assessment approach has been adopted. This ensures that the approach taken for the assessment of risk is proportional to the risk of an unacceptable impact being caused.

3.5 Where a simple review of the likely impacts associated with the proposed development clearly demonstrates that the risk of a health/annoyance impact is negligible, this will be sufficient to conclude that no further or detailed assessment is necessary.

3.6 In cases where the risk involved cannot be regarded as negligible, a more detailed and quantitative assessment will be undertaken.

3.7 The specific methodology and impact criteria used in this assessment is detailed below.

Construction Dust Impacts[16]

3.8 In January 2024, the Institute of Air Quality Management (IAQM) published a revised version (V2.2) of their updated guidance for the *'Assessment of dust from demolition and construction'*.

3.9 This 2024 version is essentially a rewrite of the previously published guidance in 2014, whilst adopting the lessons learnt since.

3.10 The updated guidance supersedes all previously published versions and continues to offer developers, their consultants and environmental health practitioners, a structured approach for carrying out a construction dust impact assessment, determine their significance and identify suitable mitigation measures to remove or minimise impacts.

3.11 The potential dust impacts associated with construction activities have been assessed in accordance with guidance from the IAQM best practice document.

3.12 The IAQM provides guidance on a five-step process to assess the potential impacts of construction dust pre-mitigation, provide mitigation measures specific to the risk and assess the post-mitigation impacts.

3.13 The assessment procedure follows the following framework:

- **Step 1** - Screen the requirement for a more detailed assessment;

[16] IAQM, (2024). 'Assessment of dust from demolition and construction 2024 v2.2', IAQM, London.

- **Step 2** - Assess the risk of dust impacts of the four phases of construction (demolition, earthworks, construction and trackout), taking into account:
  - the scale and nature of the works, which determines the potential Dust Emission Magnitude (**Step 2A**);
  - the sensitivity of the area (**Step 2B**); and
  - These factors are combined to give the risk of dust impacts (**Step 2C**).
- **Step 3** - Determine the site-specific mitigation for the potential activities;
- **Step 4** - Examine the residual effects and determine whether or not these are significant; and
- **Step 5** - Prepare the Construction Dust Risk Assessment.

3.14 In the process of screening the need for a detailed assessment, the following criteria has been used:

"An assessment will normally be required where there is:

- a 'human receptor' within:
  - *250m of the boundary of the site; or*
  - *50m of the route(s) used by construction vehicles on the public highway, up to 250m from the site entrance(s).*
- an 'ecological receptor' within:
  - *50m of the boundary of the site; or*
  - *50m of the route(s) used by construction vehicles on the public highway, up to 250m from the site entrance(s)."*

3.15 When defining the sensitivity of an area/receptor, the factors within **Table 3.2** overleaf are used.

Area Sensitivity	Human Receptors	Ecological Receptors
High	People would be present continuously, >10 dwellings within 20m of the site, exposed over a time period relevant to the air quality objective for PM_{10}, very sensitive receptors (e.g. residential properties, hospitals, schools, residential care homes).	International or national designation, locations where there is a community of a particularly dust sensitive species (e.g. Special Area of Conservation SAC).
Medium	People would not be expected to be present here continuously for extended periods, locations where people exposed are workers and exposure is over a time period relevant to the air quality objective for PM_{10}, 1-10 dwellings within 20m of the site, medium sensitive receptors (e.g. office, shop workers).	Locations where there is particularly important plant species, national designation where the features may be affected by dust deposition (e.g. Sites of Special Scientific Interest SSSI).
Low	People would be expected to be present only for limited periods, human exposure is transient. 1 dwelling within 20m of site. Low sensitivity receptors (e.g. public footpaths, playing fields, parks, shopping streets).	Locations with a local designation where the features may be affected by dust deposition (e.g. Local Nature Reserve).

Table 3.2: IAQM Factors for Defining the Sensitivity of an Area/Receptor.

Building Emissions

3.16 The emissions benchmarks set out within the EPUK & IAQM Guidance – 'Planning For Air Quality' has been used to assess any potential building emissions impacts associated with the proposed development.

3.17 The suggested emissions benchmarks are as follows:

- All gas-fired boilers to meet a minimum standard of <40mg/NO_x/kWh
- All gas-fired CHP plant to meet a minimum emissions standard of:
  - *Spark ignition engine: 250 mgNO_x /Nm^3;*
  - Compression ignition engine: 400 mgNO_x /Nm^3;
  - *Gas turbine: 50 mgNO_x /Nm^3.*
- A presumption should be to use natural gas-fired installations. Where biomass is proposed within an urban area it is to meet minimum emissions standards of:
  - *Solid biomass boiler: 275 mgNO_x /Nm^3 and 25 mgPM/Nm^3.*

Transport Emissions

3.18 The EPUK & IAQM Guidance – 'Planning For Air Quality' has been used to assess potential traffic impacts associated with the development.

3.19 **Table 3.3** below provides the criteria used for screening the need for an Air Quality Assessment.

The Development will:	Indicative Criteria to Proceed to an Air Quality Assessment
Cause a significant change in Light Duty Vehicle (LDV) traffic flows on local roads with relevant receptors. (LDV = cars and small vans <3.5t gross vehicle weight).	A change of LDV flows of: - more than 100 AADT within or adjacent to an AQMA - more than 500 AADT elsewhere.
Cause a significant change in Heavy Duty Vehicle (HDV) flows on local roads with relevant receptors. (HDV = goods vehicles + buses >3.5t gross vehicle weight).	A change of HDV flows of: - more than 25 AADT within or adjacent to an AQMA - more than 100 AADT elsewhere.
Realign roads, i.e. changing the proximity of receptors to traffic lanes.	Where the change is 5m or more and the road is within an AQMA.
Introduce a new junction or remove an existing junction near to relevant receptors.	Applies to junctions that cause traffic to significantly change vehicle accelerate/decelerate, e.g. traffic lights, or roundabouts.
Introduce or change a bus station.	Where bus flows will change by: - more than 25 AADT within or adjacent to an AQMA - more than 100 AADT elsewhere.
Have an underground car park with extraction system.	The ventilation extract for the car park will be within 20m of a relevant receptor. Coupled with the car park having more than 100 movements per day (total in and out).

Table 3.3: Indicative Criteria for Requiring an Air Quality Assessment

3.20 If any of the above criteria are met, then the significance of air pollution impacts must be assessed. This may either be a Simple or a Detailed Assessment.

3.21 In accordance with the EPUK & IAQM Guidance, a Simple Assessment is one relying on already published information and without quantification of impacts, in contrast to a Detailed Assessment that must be completed with the aid of a dispersion model.

Impact Criteria

3.22 In the event that the initial screening indicates that there is a potential risk of impact, guidance is provided also by EPUK & IAQM on how to determine the magnitude and the significance of any changes in air pollutant concentrations and/or exposure as a result of a proposed development.

3.23 This process takes the following into account:

- the magnitude of the change (% change of annual mean concentration);
- the concentration relative to the Air Quality Strategy (AQS) objective (above or below the objective); and
- the direction of change (adverse or beneficial).

3.24 The magnitude of an impact should be described by using the criteria set out in **Table 3.4** below. The criteria are based upon the change in pollutant concentration resulting from the proposed development as a percentage of the Air Quality Action Level (AQAL) which in this case is NO_2 and PM_{10} annual mean objective levels of 40 µg/m^3.

Change Magnitude	NO_2/PM_{10} Annual Mean	No Days PM_{10} >40 µg/m^3
Large	Increase/decrease >10% (>4 µg/m^3)	Increase/decrease >4 days
Medium	Increase/decrease 6-10% (2.4-4 µg/m^3)	Increase/decrease 2-4 days
Small	Increase/decrease 2-5% (0.8-2 µg/m^3)	Increase/decrease 1-2 days
Imperceptible	Increase/decrease <1% (<0.4 µg/m^3)	Increase/decrease <1 day

Table 3.4: Impact Magnitude for Changes in NO_2 and PM_{10} Concentrations

3.25 The significance of the impact will be dependent upon the magnitude of change in relation to the relevant AQAL. This is set out in **Table 3.5** overleaf.

Long term average Concentration at receptor in assessment year.	% Change in concentration relative to Air Quality Action Level (AQAL)*			
	1	2-5	6-10	>10
75% of less of AQAL (<30 µg/m^3)	Negligible	Negligible	Slight	Moderate
76 – 94% of AQAL (30-38 µg/m^3)	Negligible	Slight	Moderate	Moderate
95 – 102% of AQAL (38-41 µg/m^3)	Slight	Moderate	Moderate	Substantial
103 – 109% of AQAL (41 – 44 µg/m^3)	Moderate	Moderate	Substantial	Substantial
110% or more of AQAL (>44 µg/m^3)	Moderate	Substantial	Substantial	Substantial

*Air Quality Action Level – in this case the objective levels.

Table 3.5: Impact Descriptors for Individual Receptors

3.26 Therefore, once the magnitude and the significance of the change has been established, the impact at each relevant receptor can be described. The impact magnitude at each receptor location can be described using the changes stated above as being of Imperceptible, Small, Medium or Large magnitude, or Negligible, Slight Moderate or Substantial significance and also as being either Temporary or Permanent.

3.27 The overall significance should be described separately for both the impact of emissions related to the proposed development on existing receptors, and for the impacts of emissions from existing source(s) on new exposure being introduced from the proposed development. This is discussed below.

Exposure Criteria

3.28 The London Councils Air Quality and Planning Guidance takes into account the now superseded Planning Policy Statement 23: Planning and Pollution Control and is aimed at developers, their consultants and local authorities in order to ensure consistency in the approach to dealing with Air Quality and planning in London.

3.29 Whilst this guidance has been developed for London it is consistently adopted across the UK with a view of reducing exposure to air pollution.

3.30 When determining both the significance of exposure to air pollution and the levels of mitigation required, consideration should be given to the Air Pollution Exposure Criteria (APEC). The APEC criteria is set out in **Table 3.6** below.

	Applicable Range Nitrogen Dioxide Annual Mean	Applicable Range PM_{10}	Recommendation
APEC – A	> 5% below national objective	**Annual Mean:** > 5% below national objective **24 hr:** > 1-day less than national objective	No air quality grounds for refusal; however, mitigation of any emissions should be considered.
APEC – B	Between 5% below or above national objective	**Annual Mean:** Between 5% above or below national objective **24 hr:** Between 1-day above or below national objective.	May not be sufficient air quality grounds for refusal, however appropriate mitigation must be considered e.g., Maximise distance from pollutant source, proven ventilation systems, parking considerations, winter gardens, internal layout considered, and internal pollutant emissions minimised.
APEC – C	> 5% above national objective	**Annual Mean:** > 5% above national objective **24 hr:** > 1-day more than national objective.	Refusal on air quality grounds should be anticipated, unless the Local Authority has a specific policy enabling such land use and ensure best endeavours to reduce exposure are incorporated. Worker exposure in commercial/industrial land uses should be considered further. Mitigation measures must be presented with air quality assessment, detailing anticipated outcomes of mitigation measures.

Table 3.6: Air Pollution Exposure Criteria

3.31 It should be noted that air quality is not well suited to the rigid application of a generic significance matrix to determine the overall significance of a development and individual receptor sensitivity should also be taken into account.

3.32 Therefore, professional judgement should be employed throughout, and the assessment should take into account any site-specific considerations.

3.33 Both the impact and exposure criteria will be applied to the findings of this assessment, where required.

4 Baseline Conditions

Local Air Quality Management

4.1 The proposed development site falls within the jurisdiction of Gravesham Borough Council (GBC).

4.2 Under the Air Quality Strategy, there is a duty on all Local Authorities to consider the air quality within their boundaries and prepare an annual update report.

4.3 A review of the Air Quality Assessments undertaken by GBC has indicated that whilst air quality has improved significantly in recent decades, there are some areas where local action is needed to protect people and the environment from the effects of air pollution.

4.4 There are currently still three Air Quality Management Areas (AQMA's still designated within Gravesham. All three AQMA's have been designated as a result of exceedances of the annual mean objective level for Nitrogen Dioxide (NO_2) There were another four AQMA's which were revoked in 2018 and 2024 following consistent improvements in Air Quality.

4.5 The proposed development site is not located within or close to any of the declared AQMA's. This is illustrated in **Figure 4.1** below.

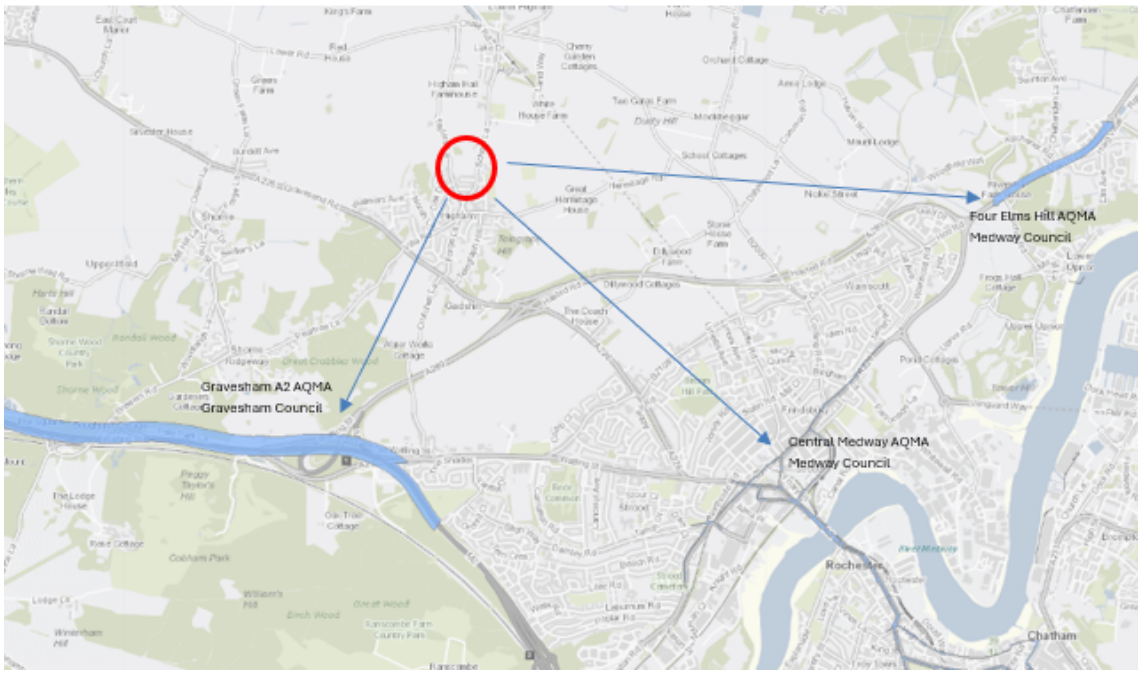

Figure 4.1: Site Location in Relation to Designated AQMA's

4.6 There are no high sensitivity ecological sites within 50m of the Site boundary or within 50m from possible routes used by construction vehicles on the public highway (up to 250m from the Site entrance). Therefore, impacts upon local ecological receptors will be assessed as low within the Construction Dust Assessment (CDA) presented in **Appendix A**.

Background

4.7 The Defra mapping tool (reference year 2021) has been used to establish the annual mean pollutant background concentrations for the 1x1km grid square the site is located in (X:571500, Y:171500).

4.8 The NO_X, NO_2, PM_{10} and $PM_{2.5}$ annual mean background concentrations for 2024 'Baseline' are provided in **Table 4.1** below.

Pollutant	2024 (µg/m^3)
NO_X	14.11
NO_2	10.72
PM_{10}	11.30
$PM_{2.5}$	6.53

Table 4.1: Defra Annual Mean Background Concentrations for 2024

Local Monitoring

4.9 In June 2025 GBC published their latest Air Quality Annual Status Report (ASR) which provides an overview of air quality in Gravesham Borough Council during 2024.

4.10 Monitored results from 2020 and 2021 are likely to have been impacted by the COVID-19 pandemic and are likely to be less representative of the 'true' baseline concentrations. Therefore, in line with the Covid-19 Supplementary Guidance produced by DEFRA and the GLA in 2021, the data from 2020 and 2021 has not been used as reference years within this baseline. Subsequently, this assessment has used 2024 data as the latest and best representative reference year of post-COVID baseline concentrations.

Automatic Monitoring

4.11 GBC currently operates one automatic (continuous) monitoring location within the district. The site location in relation to GBC's automatic monitoring location is illustrated in **Figure 4.2** overleaf.

Figure 4.2: Site Location in Relation to GBC's Automatic Monitoring Location

4.12 The automatic monitoring location 'ZG2' monitors for NO_2 and PM_{10}. The latest annual mean concentrations are summarised within **Table 4.2** below.

ID	Site Name	Co-ordinates (X,Y)	Site Type	Pollutant	Annual Mean NO_2 Concentration (µg/m³)				
					2020	2021	2022	2023	2024
ZG2	Gravesham A2 Roadside	562589, 172076	Roadside	NO_2	23.7	22.8	22.2	19.5	18.6
				PM_{10}	16.3	16.0	15.3	11.7	10.3

Table 4.2: NO_2 and PM_{10} Annual Mean Concentration for GBC's Automatic Monitoring Location

4.13 **Table 4.2** demonstrates that the annual mean concentrations for the automatic monitoring locations for NO_2 and PM_{10} are considerably below their respective annual mean objective.

Non-Automatic Monitoring

4.14 GBC currently undertakes non-automatic monitoring of Nitrogen Dioxide (NO_2) at various locations across the borough.

4.15 The closest non-automatic monitoring locations in relation to the proposed development are illustrated in **Figure 4.3** overleaf.

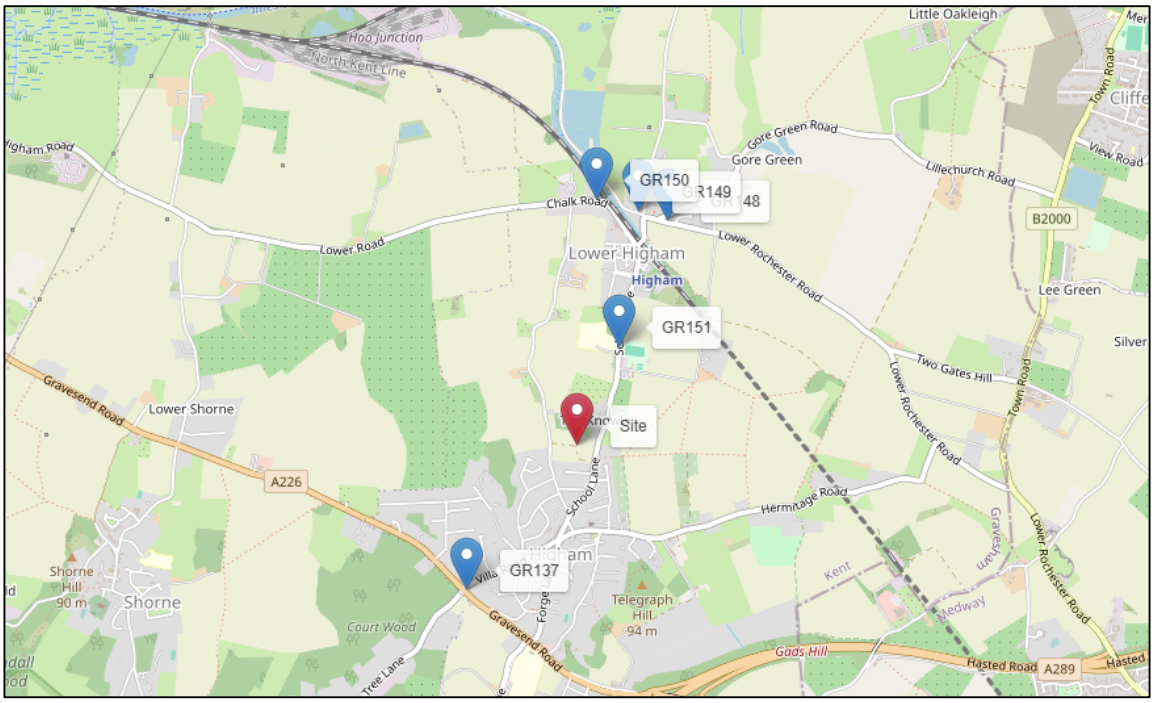

Figure 4.3: Site Location in Relation to the Closest Non-Automatic Monitoring

4.16 The latest NO_2 annual mean concentrations for the closest non-automatic monitoring locations are provided within **Table 4.3** below.

ID	Location	Coordinates (X,Y)	Site Type	Annual Mean Concentration (µg/m³) NO_2				
				2020	2021	2022	2023	2024
GR137	"Lamp post Opposite 2 Peartree Place, Gravesend Road"	570719, 171143	Roadside	26.9	26.7	27.0	21.5	18.9
GR148	Byeways, Lower Rochester Road, Higham (Façade) ME3 7HD	571572, 172847	Roadside	-	14.3	13.4	10.8	11.3
GR149	Telegraph Post, adjacent Chequers Court, Canal Road, Higham ME3 7HD	571445, 172881	Roadside	-	14.7	13.0	11.6	12.1
GR150	"Telegraph Post, adjacent 10 Michele Cottages, Chalk Road, Higham ME3 7JZ"	571250, 172933	Roadside	-	16.1	15.1	12.6	12.4
GR151	"Telegraph Post, Higham Primary School, School Lane, Higham ME3 7JL"	571371, 172270	Roadside	-	18.8	18.4	15.8	14.8

Table 4.3: Annual Mean NO_2 Concentrations for the Closest Non-Automatic Locations

4.17 **Table 4.3** above demonstrates that there were no exceedances of the national annual mean objective for NO_2 in 2024 for the closest non-automatic monitoring locations. In fact, there were no exceedances recorded at any of the monitoring locations within the borough in 2024.

4.18 Therefore, all the automatic and non-automatic monitoring locations are >5% below the national annual mean objective for NO_2, PM_{10}, and $PM_{2.5}$ in 2024. Consequently, in accordance with the exposure criteria set out in **Table 3.6,** the proposed development site is likely to fall within APEC – A for site suitability, which states the following:

"No air quality grounds for refusal; however, mitigation of any emissions should be considered."

4.19 Suitable mitigation measures have been considered, where required, within **Section 6** of this AQA.

5 Evaluation of Potential Effects

Construction

Construction Dust

5.1 During the construction phases, there is the potential for emissions of dust to cause annoyance, nuisance and health effects to sensitive receptors, both human and ecological located close to the site.

5.2 The site is a greenfield site with no built structures. Therefore, the construction activities associated with the proposed development have been separated into three stages:

- Earthworks;
- Construction; and
- Trackout.

5.3 There are a number of human receptors within 250m of the site boundary. Therefore, a dust assessment has been undertaken in order to evaluate and minimise potential dust effects during the aforementioned three stages.

5.4 The construction dust risk assessment is included in **Appendix A.**

Construction Traffic and Plant

5.5 Throughout the construction period, there will be a number of construction vehicles, stationary plant and vehicles used by the construction workforce. These may potentially present an additional source of air pollutants in the vicinity of the proposed development site.

5.6 Any likely pollutant impacts should be addressed through Best Available Techniques (BAT) mitigation measures. Likely BAT are provided in **Section 6**.

Completed Development

Development Traffic

5.7 The predicted net traffic associated with the operation of the proposed development has been provided to us by David Hicken Associates as follows:

- Overall daily trips – 241
- Overall HGV – 3

5.8 This level of traffic impact does not meet the EPUK & IAQM criteria in **Table 3.3** for requiring further or detailed assessment.

5.9 Therefore, it has not been considered necessary to further quantify traffic related impacts as a result of the operation of the proposed development.

5.10 Further details in relation to the traffic generation, associated calculations and methodology used are included within the Transport Statement (TS) prepared by David Hicken Associates.

Building Emissions

5.11 At this stage the proposed energy strategy has not yet been confirmed.

5.12 Any operational plant effects associated with the proposed energy strategy should be reviewed and assessed, if required, at the appropriate stage, when all the required detailed plant technical information is confirmed.

5.13 Compliance with relevant regulations and standards, at this stage, should be secured through planning conditions, where necessary.

6 Mitigation Measures

Construction

Construction Dust

6.1 A construction dust risk assessment has been completed for the proposed development in accordance with IAQM guidance and is presented in **Appendix A**. Within the assessment, site specific mitigation measures have been identified which ensure compliance with relevant standards.

6.2 The role of air quality monitoring within the package of mitigation measures that is proposed has also been considered since monitoring proposals are frequently incorporated into planning conditions.

6.3 The mitigation measures outlined in **Appendix A** should make up part of a Construction Environmental Management Plan (CEMP) that should be implemented to minimise the potential adverse construction dust impacts throughout all the relevant construction stages.

6.4 It is important that attention is paid to any construction activity that takes place in close proximity to the site boundary, potentially at the closest location to sensitive receptors.

Dust Monitoring:

6.5 The dust monitoring requirements are usually split in three categories as follows:

- **Negligible/Low risk** category sites - should not normally be necessary to undertake any quantitative air quality monitoring, although in some circumstances it may be applicable to undertake occasional surveys in the vicinity of the site boundary at least once on each working day.
- **Medium risk** category sites - should normally be adequate to undertake surveys of dust flux over the site boundary, and/or dust deposition/soiling rates around the site at nearby receptors, although this may have resource implications, and an approach based on continuous particulate matter monitoring may be preferred.
- **High risk** category sites - normally be necessary to supplement the monitoring for medium risk sites with monitoring of ambient PM concentrations. It is recommended

that priority be assigned to the measurement of PM_{10}, as emissions of dust from construction sites are predominantly in the coarser fractions.

6.6 The proposed development site has been classified as having a **medium/low** risk of dust soiling during earthworks and construction and a **low/negligible** risk during trackout.

6.7 Therefore, dust monitoring, as specified above, should be undertaken during the relevant stages of construction to ensure that:

- The construction activities do not give rise to any exceedances of the air quality objectives for PM_{10} or $PM_{2.5}$.
- The agreed mitigation measures to control dust emissions are being applied and are effective.
- Any high levels of dust are attributed to specific activities on site to ensure that appropriate corrective measures take place.

6.8 The implementation of the specific mitigation measures given above within the CEMP will ensure that any potential adverse impacts from construction dust during all relevant construction stages are avoided. It is noted by the IAQM that, through the use of effective mitigation, the effects of dust from construction activity will normally not be considered significant.

Construction Traffic and Plant

6.9 As previously stated, there is potential for air pollutant impacts to arise from construction plant and vehicles associated with the scheme. The following BAT should still be implemented during the construction phase.

- All vehicles should switch off engines when stationary, no idling vehicles;
- Minimise the movement of construction traffic around the site;
- Maximising efficiency (this may include alternative modes of transport, maximising vehicle utilisation by ensuring full loading and efficient routing);
- Vehicles should be well maintained and kept in a high standard of working order;
- Avoid the use of diesel or petrol powered generators by using mains electricity or battery powered equipment where possible; and
- Locate plant away from boundaries close to residential areas.

Operational

Traffic Emissions

6.10 The AQA has demonstrated that the predicted net traffic associated with the proposed development is unlikely to result in a detrimental pollution impact upon the local highway network and the local pollution levels.

6.11 Therefore, it is not anticipated that mitigation measures will be required.

Building Emissions

6.12 As previously stated, at this stage the proposed energy strategy has not yet been confirmed. Any operational plant effects should be reviewed and assessed, if required, at the appropriate stage, when all the required detailed plant technical information is available.

6.13 However, it is recommended that, any boilers being used on site should be highly efficient low NOx boilers, ideally with emissions <40mgNOx/kWh and any CHP plant should ideally meet the following minimum emissions standards:

- Spark ignition engine: less than 250mgNOx/Nm^3;
- Compression ignition engine: less than 400mgNOx/Nm^3;
- Gas turbine: less than 50mgNOx/Nm^3.

6.14 This will ensure that any additional NOx contributions associated with proposed heating strategy are kept as low as possible.

6.15 Compliance with relevant regulations and standards should be secured through planning conditions, where necessary.

Site Suitability

6.16 The monitored annual mean concentrations for all the closest non-automatic monitoring locations are >5% below the national annual mean objectives for NO_2 in 2024, meaning that the proposed development site is likely to fall within APEC-A for site suitability.

6.17 In accordance with the exposure criteria in **Table 3.6**, APEC-A means that there should be no air quality grounds for refusal and the local air quality should be suitable to safeguard the health and amenity of new residents without mitigation.

7 Residual Effects and Conclusions

7.1 The proposed development site falls within the jurisdiction of Gravesham Borough Council (GBC).

7.2 A review of the Air Quality Assessments undertaken by GBC has indicated that whilst air quality has improved significantly in recent decades, there are some areas where local action is needed to protect people and the environment from the effects of air pollution.

7.3 There are currently still three Air Quality Management Areas (AQMA's) still designated within Gravesham. All three AQMA's have been designated as a result of exceedances of the annual mean objective level for Nitrogen Dioxide (NO_2) There were another four AQMA's which were revoked in 2018 and 2024 following consistent improvements in Air Quality.

7.4 The latest monitored annual mean concentrations for all the automatic and non-automatic monitoring locations confirm a general downward trend across the borough. The annual mean concentrations are >5% below the national annual mean objective for NO_2 and PM_{10} in 2024.

7.5 Consequently, in accordance with the exposure criteria set out in **Table 3.6,** the proposed development site is likely to fall within APEC – A for site suitability, which states:

"No air quality grounds for refusal; however, mitigation of any emissions should be considered."

7.6 A construction dust risk assessment has been undertaken for the three stages of construction activities associated with the proposed development in accordance with IAQM guidance on the assessment of dust from construction activities (**Appendix A**).

7.7 Mitigation measures have been proposed for construction traffic and stationary plant associated with the proposed development.

7.8 Following the successful implementation of the specific mitigation measures, the residual effects of construction dust and emissions from construction plant/vehicles upon the local area and sensitive receptors although adverse, will be temporary and considered to be 'not significant'.

7.9 The predicted net traffic associated with the proposed development is unlikely to result in a detrimental pollution impact upon the local highway network and the local pollution levels.

7.10 At this stage the proposed energy strategy has not yet been confirmed. Any operational plant effects should be reviewed and assessed, if required, at the appropriate stage, when all the required detailed plant technical information is available.

7.11 However, it is recommended that, any boilers being used on site should be highly efficient low NOx boilers, ideally with emissions <40mgNOx/kWh and any CHP plant should ideally meet the following minimum emissions standards:

- Spark ignition engine: less than 250mgNOx/Nm^3;
- Compression ignition engine: less than 400mgNOx/Nm^3;
- Gas turbine: less than 50mgNOx/Nm^3.

7.12 Compliance to relevant regulations and standards should be secured through planning conditions, where necessary.

Conclusion

7.13 Based on the information available at the time of writing , the proposed development does not raise any significant adverse impacts on the health and/or quality of life for any existing or proposed receptors, as a result of any anticipated changes to air quality.

7.14 It is therefore concluded that the proposed development complies fully with air quality related national and local planning policy and any mitigation can, if considered necessary, be enforced by means of appropriate planning conditions, consistent with paragraphs 55 and 56 of the National Planning Policy Framework.

APPENDIX A: Construction Dust Risk Assessment

CONSTRUCTION DUST RISK ASSESSMENT

A.1 This construction dust risk assessment has been completed in accordance with 2024 IAQM guidance and follows the procedures as outlined in **Section 3** of this report.

Screen the Need for a Detailed Assessment

A.2 The following screening criterion has been applied to the assessment:

"An assessment will normally be required where there is:

- *a 'human receptor' within:*
  - *250m of the boundary of the site; or*
  - *50m of the route(s) used by construction vehicles on the public highway, up to 250m from the site entrance(s).*
- *an 'ecological receptor' within:*
  - *50m of the boundary of the site; or*
  - *50m of the route(s) used by construction vehicles on the public highway, up to 250m from the site entrance(s)."*

A.3 There are a number of human receptors within 250m of the site boundary. Therefore, a dust assessment is required due to the proposed development location meeting some of the above criteria.

Assess the Risk of Dust Impacts

A.4 The site is a greenfield site and as such does not require any demolition. Subsequently, the construction activities associated with the proposed development have been separated into three stages:

- Earthworks;
- Construction; and
- Trackout.

A.5 The assessment of the risk of dust impacts has been completed in two stages:

- Determine the potential dust emission magnitude; and
- Determine the sensitivity of the area to dust impacts.

A.6 The potential dust emission magnitude for all three of the construction stages have been determined to be either Small, Medium or Large according to the criteria presented in **Table A.1** below.

Construction Activity	Dust Emission Magnitude Scale		
	Small	Medium	Large
Earthworks	Total site area 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 active at any one time, formation of bunds 3m - 6m in height.	Total site area >110,000m^2 , potentially dusty soil type, >10 heavy earth moving vehicles active at any one time, formation of bunds >6m in height.
Construction	Total building volume <12,000m^3, construction material with low potential for dust release.	Total building volume 12,000m^3 – 75,000m^3, potentially dusty construction material, on site concrete batching.	Total building volume >75,000m^3, on site concrete batching, sandblasting.
Trackout	<20 HDV* outward movements in any one day, surface material with low potential for dust release, unpaved road length <50m.	20-50 HDV outward movements in any one day, moderately dusty surface material, unpaved road length 50m – 100m	>50 HDV outward movements in any one day, potentially dusty surface material, unpaved road length >100m.
* HDV – Heavy Duty Vehicle (>3.5t), Note – In each case, not all the criteria need to be met, and that other criteria may be used if justified.			

Table A.1: Dust Emission Magnitude Criteria

A.7 The completed assessment of Dust Emission Magnitude is shown in **Table A.2** below.

Construction Activity	Dust Emission Magnitude	Justification
Earthworks	Medium	Total site area in 28,000m^2 (between 18,000m^2 – 110,000m^2)
Construction	Medium	Estimated Total building volume 12,000m^3 – 75,000m^3
Trackout	Small	Estimated <20 HDV (>3.5t) trips in any one day

Table A.2: Dust Emission Magnitude Assessment

A.8 Due to the scale of the proposed development the magnitude of dust emissions has been assessed as **Medium** for earthworks and construction and **Small** for trackout.

A.9 The sensitivity of the area has been assessed in relation to a number of factors such as; the specific sensitivities of receptors in the area, the proximity and number of those receptors and in the case of PM_{10}, the local background concentration and by following the significance criteria in **Tables A.3, A.4** and **A.5** below.

Receptor Sensitivity	Number 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 A.3: Sensitivity of the Area to Dust Soiling Effects of People and Property

Receptor Sensitivity	Annual Mean PM_{10} Concentration	Number of Receptors	Distance from the source (m)			
			<20	<50	<100	<250
High	>32 µg/m³	>100	High	High	High	Medium
		10-100	High	High	Medium	Low
		1-10	High	Medium	Low	Low
	28-32 µg/m³	>100	High	High	Medium	Low
		10-100	High	Medium	Low	Low
		1-10	High	Medium	Low	Low
	24-28 µg/m³	>100	High	Medium	Low	Low
		10-100	High	Medium	Low	Low
		1-10	Medium	Low	Low	Low
	<24 µg/m³	>100	Medium	Low	Low	Low
		10-100	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Medium	>32 µg/m³	>10	High	Medium	Low	Low
		1-10	Medium	Low	Low	Low
	28-32 µg/m³	>10	Medium	Low	Low	Low
		1-10	Low	Low	Low	Low
	24-28 µg/m³	>10	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
	<24 µg/m³	>10	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Low	-	≥1	Low	Low	Low	Low

Table A.4: Sensitivity of the Area to Human Health Impacts

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

Table A.5: Sensitivity of the Area to Ecological Impacts

A.10 In addition to **Tables A.3, A.4** and **A.5** any site-specific factors have been taken into account when defining the sensitivity of the area:

- any history of dust generating activities in the area;
- the likelihood of concurrent dust generating activity on nearby sites;
- any pre-existing screening between the source and the receptors; and
- the duration of the potential impact, as a receptor may become more sensitive over time.

A.11 The completed assessment of Sensitivity of the Area in **Table A.6** below.

Receptor Sensitivity	Sensitivity of the Surrounding Area		
	Earthworks	Construction	Trackout
Dust Soiling	Medium	Medium	Medium
Human Health	Low	Low	Low
Ecological	Low	Low	Low

Table A.6: Sensitivity of the Surrounding Area Assessment

A.12 The completed pre-mitigation impact risk assessment incorporating the sensitivity of the area and the dust emissions magnitude for the three construction activities is shown in **Table A.7** below.

Potential Impact	Risk		
	Earthworks	Construction	Trackout
Dust Soiling	Medium Risk	Medium Risk	Low Risk
Human Health	Low Risk	Low Risk	Negligible Risk
Ecological	Negligible Risk	Negligible Risk	Negligible Risk

Table A.7: Summary of Dust Risk (pre-mitigation)

A.13 The risk of dust soiling has been considered **medium** risk based on the number of receptors (human and property) and their location in relation to the proposed site. The human health risk was considered **low/negligible** due to the low PM_{10} background concentrations in the local area for 2024 (11.3µg/m^3). There are no high sensitivity ecological sites within 50m of the proposed site, therefore ecological sensitivity has also been assessed as **negligible**.

A.14 Additionally, the dust emissions magnitude, pre-mitigation, based on the scale of the development, is considered to be **medium** for earthworks and construction and **small** for trackout.

Site-specific Mitigation

A.15 From the identification of the risk of impacts with no mitigation applied in **Table A.7** it is possible to determine the specific mitigation measures that can be applied in relation to the level of risk associated with the construction activity. The mitigation measures described below are suggested as measures that should be included in a site-specific Construction Environmental Management Plan (CEMP). Due to the site being considered **low-medium** risk for earthworks and construction and **low** risk trackout, the following mitigation measures are either D=Desirable, H=Highly Recommended or N=Not Required in **Tables A.8**, **A.9**, **A.10** and **A.11** below.

Earthworks:

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

Table A.8: Site Specific Mitigation Measures for Earthwork Activities

Construction:

Mitigation Measures	Low Risk	Medium Risk	High Risk
Avoid scabbling (roughening of concrete surfaces) if possible.	D	D	H
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.	D	H	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.	N	D	H
For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust.	N	D	D

Table A.9: Site Specific Mitigation Measures for Construction Activities

Trackout:

Mitigation Measures	Low Risk	Medium Risk	High Risk
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.	D	H	H
Avoid dry sweeping of large areas.	D	H	H
Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.	D	H	H
Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.	N	H	H
Record all inspections of haul routes and any subsequent action in a site log book.	D	H	H
Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.	N	H	H
Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).	D	H	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.	N	H	H
Access gates to be located at least 10m from receptors where possible.	N	H	H

Table A.10: Site Specific Mitigation Measures for Trackout Activities

General Mitigation Measures:

Mitigation Measures	Low Risk	Medium Risk	High Risk
Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.	N	H	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	H	H
Display the head or regional office contact information.	H	H	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 highly recommended measures in this document. The desirable measures should be included as appropriate for the site. In London additional measures may be required to ensure compliance with the Mayor of London's guidance. The DMP may include	D	H	H

Mitigation Measures	Low Risk	Medium Risk	High Risk
monitoring of dust deposition, dust flux, realtime PM_{10} 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.	H	H	H
Make the complaints log available to the local authority when asked.	H	H	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 log book.	H	H	H
Hold regular liaison meetings with other high risk construction sites within 250 m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/ deliveries which might be using the same strategic road network routes.	N	N	H
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 window sills within 100 m of site boundary, with cleaning to be provided if necessary.	D	D	H
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.	H	H	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	H	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 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.	H	H	H
Preparing and Maintaining the Site			

Mitigation Measures	Low Risk	Medium Risk	High Risk
Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.	H	H	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	H	H
Fully enclose site or specific operations where there is a high potential for dust production and the site is actives for an extensive period.	D	H	H
Avoid site runoff of water or mud.	H	H	H
Keep site fencing, barriers and scaffolding clean using wet methods.	D	H	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.	D	H	H
Cover, seed or fence stockpiles to prevent wind whipping.	D	H	H
Operating Vehicle/Machinery and Sustainable Travel			
Ensure all vehicles switch off engines when stationary - no idling vehicles.	H	H	H
Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.	H	H	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, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate).	D	D	H
Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.	N	N	H
Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing)	N	D	H
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	H	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	H	H
Use enclosed chutes and conveyors and covered skips.	H	H	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	H	H

Mitigation Measures	Low Risk	Medium Risk	High Risk
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.	D	H	H
Waste Management			
Avoid bonfires and burning of waste materials.	H	H	H

Table A.11: Site Specific Mitigation Measures for General Activities

A.16 It is important that attention is paid to any construction activity that takes place in close proximity to the site boundary, potentially at the closest location to sensitive receptors.

Determine Significant Effects

A.17 Prior to the implementation of any mitigation measures the highest significance of adverse effects was **medium** risk for dust soiling during earthworks and construction and **low** risk during trackout, **low/negligible** risk for human health and **negligible** risk for ecology, with dust emissions magnitude considered to be **medium** for earthworks and construction and **small** for trackout.

A.18 The mitigation measures listed above are chosen based on their suitability to the site and to reduce the risk of adverse effects from the three relevant stages of construction.

A.19 Through the implementation of site-specific mitigation measures (secured by planning condition), which are designed to mitigate potential dust impact, will ensure that potential significant adverse dust effects will not occur, and the residual effect will normally be 'not significant'.

Dust Monitoring:

A.20 The dust monitoring requirements are usually split in three categories as follows:

- **Negligible/Low risk** category sites - should not normally be necessary to undertake any quantitative air quality monitoring, although in some circumstances it may be applicable to undertake occasional surveys in the vicinity of the site boundary at least once on each working day.
- **Medium risk** category sites - should normally be adequate to undertake surveys of dust flux over the site boundary, and/or dust deposition/soiling rates around the site at nearby receptors, although this may have resource

implications, and an approach based on continuous particulate matter monitoring may be preferred.

- **High risk** category sites - normally be necessary to supplement the monitoring for medium risk sites with monitoring of ambient PM concentrations. It is recommended that priority be assigned to the measurement of PM_{10}, as emissions of dust from construction sites are predominantly in the coarser fractions.

A.21 The proposed development site has been classified as having a **medium/low** risk of dust soiling during earthworks and construction and **low/negligible** risk during trackout.

A.22 Therefore, dust monitoring, as specified above, should be undertaken during the relevant stages of construction to ensure that:

- The construction activities do not give rise to any exceedances of the air quality objectives for PM_{10} or $PM_{2.5}$.
- The agreed mitigation measures to control dust emissions are being applied and are effective.
- Any high levels of dust are attributed to specific activities on site to ensure that appropriate corrective measures take place.

A.23 The implementation of the specific mitigation measures given above within the CEMP will ensure that any potential adverse impacts from construction dust during all construction stages are avoided. It is noted by the IAQM that, through the use of effective mitigation, the effects of dust from construction activity will normally not be considered significant.

A.24 Compliance should be secured through planning conditions, where necessary.

Conclusions of Construction Dust Risk Assessment

A.25 The completion of the construction dust risk assessment has shown that the residual effect of the proposed development in the context of construction dust emissions will be 'not significant' after mitigation. This conclusion has been made based on the **medium** dust emissions magnitude for earthworks and construction and **small** for trackout related to the scale of development and the assumption that the suggested mitigation measures will be implemented (secured by planning condition) and is relevant for all sensitive receptors within 250m of the site.

A.26 It should be noted that even with a rigorous CEMP in place, it is not possible to guarantee that all mitigation measures will be effective at all times. If there is an interruption in the water supply used for dust suppression or adverse weather conditions are experienced that exacerbate dust emissions, the receptors may experience occasional, short term dust annoyance.

A.27 However, the likely scale of this would not normally be considered sufficient to change the conclusion of this assessment. It is therefore important to consider all mitigation measures and provide a frequent review and assessment procedure at each stage, to ensure that mitigation measures continue to provide the maximum attenuation level possible.

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