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ACOUSTIC AIR



Chalk Road, Higham
Air Quality Assessment
August 2025

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Chalk Road, Higham

Air Quality Assessment

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1.0 INTRODUCTION

1.1 MEC Consulting Group Ltd (MEC) has been commissioned by Richborough, to undertake an Air Quality Assessment for a proposed residential development at Chalk Road, Higham (hereafter referred to as 'the Site').

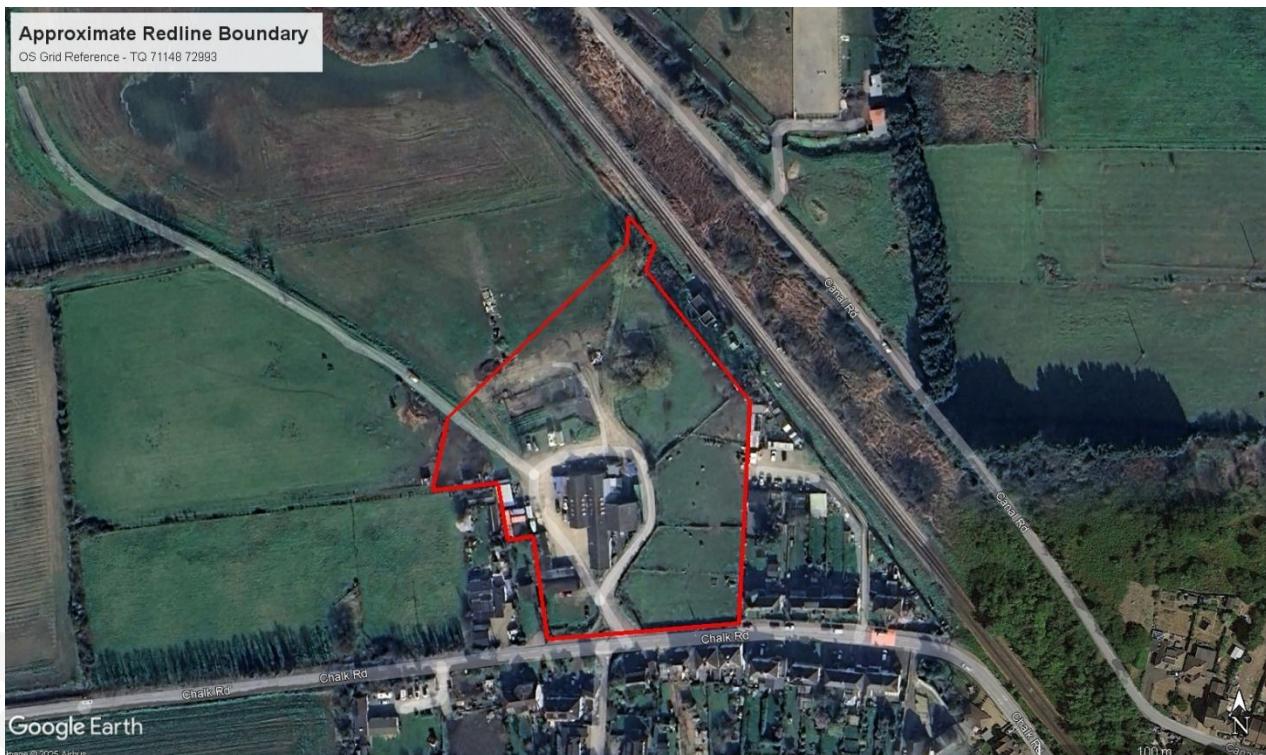
Existing Site

1.2 The Site is approximately 1.56 ha in size, comprising of arable land and farm buildings. The site is bound immediately by Chalk Road to the south arable fields to the west and north and a railway to the east.

1.3 The principal source of emissions affecting the Site will be from local road traffic using Chalk Road.

1.4 An approximate redline boundary is presented in Figure 1.1 and in **Appendix A**.

Figure 1.1: Approximate Redline Boundary



Development Proposals

1.5 The development proposals comprise:

Outline application for the demolition of existing buildings and erection up to 40 residential dwellings, public open space and associated works. Approval is sought for the principal means of vehicular access from Chalk Road and all other matters are reserved.

1.6 An illustrative development framework plan is provided in **Appendix A**.

Assessment Scope

1.7 The following scope of works has been undertaken:

- Assessment has been undertaken in accordance with Defra's LAQM¹ and the EPUK²;
- A review of the Local Authority's (LA) published air monitoring and modelling data for the area has been undertaken, so that air pollutant concentrations at the Site and its surroundings can be quantified relative to the relevant air quality objectives governed by the Air Quality (England) Regulations³;
- Relevant air pollutants; nitrogen dioxide (NO₂) and particulate matter (PM₁₀) concentrations from nearby local roads have been calculated in accordance with the DMRB⁴ air quality screening method, for comparison with the air quality objectives;
- A dust risk assessment has been undertaken in accordance with the IAQM⁵ construction guidance; and
- Best practice mitigation measures to offset development-related emissions, along with indicative dust control measures to protect existing sensitive development during the construction phase, have been recommended accordingly.

1.8 The conclusions of this report aim to demonstrate to the LA that air quality over the Site is acceptable for residential development, and that the development itself will not have any adverse impacts on ambient air quality for existing dwellings.

Disclaimer

1.9 MEC has completed this report for the benefit of the individuals referred to in Paragraph 1.1 and any relevant statutory authority which may require reference in relation to approvals for the proposed development. Other third parties should not use or rely upon the contents of this report unless explicit written approval has been gained from MEC.

1.10 MEC accepts no responsibility or liability for:

- The consequence of this documentation being used for any purpose or project other than that for which it was commissioned;
- The issue of this document to any third party with whom approval for use has not been agreed.

¹ Local Air Quality Management Technical Guidance 2022.

² Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM) – Land-Use Planning & Development Control: Planning for Air Quality 2017.

³ UK National Air Quality Strategy (AQS) under Section 80 of the Environment Act 1995.

⁴ Design Manual for Road and Bridges – LA 105, Air Quality, November 2019 (Formerly HA 207/07).

⁵ Institute of Air Quality Management (IAQM) 'Guidance on the Assessment of the Impacts of Construction on Air Quality and the Determination of their Significance' 2014.

2.0 AIR QUALITY STANDARDS

2.1 The principal air quality standards applied within the UK are the standards and objectives that were initially formulated within the Air Quality (England) Regulations 2000 (AQR) as amended in 2002. These were enacted as part of the UK National Air Quality Strategy (AQS) under Section 80 of the Environment Act 1995, and implement relevant directives of the European Union (EU). The latest version of the UK AQS was published in 2007.

2.2 It is important to note the distinction between air quality standards and objectives. Although the AQ Standards (AQS) define concentration levels that will avoid or minimise risks to health, they do not necessarily reflect levels that are presently technically feasible or economically efficient. In contrast, the AQ Objectives (AQO) have been set with regard to what is realistically achievable within a specified timetable. The approach adopted by the Strategy is to apply the objectives, where members of the public, in a non-occupational capacity and at locations close to ground level, are likely to be exposed over the averaging time of the objective, for example, over 1-hour, 24-hour or annual periods as appropriate.

2.3 Under the Environment Act 1995, Local Authorities must review and document local air quality within their areas by way of a staged appraisal and respond accordingly, with the aim of meeting the air quality objectives by the years defined in the Regulations. Where the objectives of the Regulations are not likely to be achieved by the objective year, an authority is required to designate an Air Quality Management Area (AQMA). For each AQMA the local authority is required to draw up an Air Quality Action Plan (AQAP) to secure improvements in air quality and show how it will try to meet air quality standards in future.

2.4 The Strategy's current air quality objectives, for NO₂, PM₁₀ and PM_{2.5}, for the protection of human health are summarised in Table 2.1 below. Definitions of units and terms used to quantify air pollutant concentrations are provided in **Appendix B**.

Table 2.1: UK Air Quality Objectives for Protection of Human Health

| Pollutant | Concentration | Measured as * |
|---|-------------------------------|--|
| Nitrogen dioxide | 200 µg/m ³ | 1 hour mean not to be exceeded more than 18 times per year |
| | 40 µg/m ³ | Annual mean |
| Particles (PM ₁₀ gravimetric) | 50 µg/m ³ | Daily mean not to be exceeded more than 35 times a year |
| | 40 µg/m ³ | Annual mean |
| Particles (PM _{2.5} gravimetric) | 20 µg/m ³ (target) | Annual mean |
| | 12 µg/m ³ | 2028 Interim target ^(a) |
| | 10 µg/m ³ | Legally binding target 2040 ^(a) |

^(a) The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023

2.5 The UK Government has also set NO₂ objectives for 2010 that must be met by all member states, although these 2010 EU NO₂ objectives are equal to the UK Air Quality Strategy NO₂ 2005 objectives.

2.6 The pollutants of most concern to planning authorities in urban areas, due to the high concentrations presently encountered (of which local road traffic makes a large contribution) are NO₂, PM₁₀ and PM_{2.5}.

National Planning Policy Framework

2.7 The latest National Planning Policy Framework (NPPF), issued by the Ministry of Housing, Communities and Local Government in 2024, sets out the Government's planning policies for England and how these are to be expected to be applied. The NPPF must be taken into account in the preparation of local and neighbourhood plans, and is to be a material consideration in planning decisions.

2.8 Paragraph 187 of the NPPF advises that, 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*”.

2.9 Further, paragraph 199 advises 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.*”.

Planning Practice Guidance

2.10 In 2019, the Department for Communities & Local Government updated its on-line planning guidance to assist with interpretation of the NPPF. The guidance covers general matters such as relevance of air quality issues, role of the Local Plan, information sources, assessment approaches and mitigation. How considerations about air quality fit into the development management process is summarised by the guidance in a flowchart, which is included here in **Appendix C**.

Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM) – Land-Use Planning & Development Control: Planning for Air Quality 2017

2.11 Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM) have produced this guidance to ensure that air quality is adequately considered in the land-use planning and development control processes.

2.12 The guidance clarifies when an air quality assessment is required and what it should contain. It sets out how impacts should be described and assessed. Importantly it sets out a recommended approach that can be used to assess the significance of the air quality impacts, taking account of the advice issued by IAQM. An

important focus of this guidance is on minimising the air quality impacts of all developments for which air quality assessments have been requested by the planning authority; this will be through good design and application of appropriate mitigation measures.

2.13 Stage 1 of the assessment in the local area seeks to screen out smaller development and/or developments where impacts can be considered to have insignificant effects. The Stage 1 criteria are set out in Table 2.2 and require any of the criteria in row A, coupled with any of the criteria in row B, to apply before an assessment proceeds to Stage 2. If none of the criteria are met then the impacts can be considered to be insignificant and there is no requirement to carry out an air quality assessment.

Table 2.2: Stage 1 Criteria

| Criteria to Proceed to Stage 2 |
|--|
| If any of the following apply: <ul style="list-style-type: none">• 10 or more residential units or a site of more than 0.5 ha• more than 1,000 m² of floor space for all other uses or a site area greater than 1 ha |
| Coupled with any of the following: <ul style="list-style-type: none">• the development has more than 10 parking spaces• the development will have a centralised energy facility or other centralised combustion process |
| Note: Consideration should still be given to the potential impacts of neighbouring sources on the site, even if an assessment of impacts of the development on the surrounding area is screened out. |

2.14 The criteria in Table 2.3 provide more specific guidance as to when an air quality assessment is likely to be required to assess the impacts of the proposed development on the local area.

Table 2.3: Indicative Criteria for Requiring 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) |
| Have one or more substantial combustion processes. | Where the combustion unit is: any centralised plant using bio fuel any combustion plant with single or combined thermal input >300kW |

| The development will: | Indicative Criteria to Proceed to an Air Quality Assessment |
|--|---|
| | a standby emergency generator associated with a centralised energy centre (if likely to be tested/used >18 hours a year) |
| Have a combustion process of any size. | Where the pollutants are exhausted from a vent or stack in a location and at a height that may give rise to impacts at receptors through insufficient dispersion. This criterion is intended to address those situations where a new development may be close to other buildings that could be residential and/or which could adversely affect the plume's dispersion by way of their size and/or height. |

2.15 Where an air quality assessment is identified as being required, this may be either a Simple or a Detailed Assessment. A Simple Assessment is one relying on already published information and without quantification of impacts, in contrast to a Detailed Assessment that is completed with the aid of a predictive technique, such as a dispersion model. Passing a criterion in Table 2.3 does not automatically lead to the requirement for a Detailed Assessment. Once again, where none of the criteria are met the impacts can be considered to be insignificant and there is no requirement to carry out an air quality assessment.

2.16 The purpose of the air quality assessment is to define the likely quantitative or qualitative changes in air quality or exposure to air pollution as a result of the proposed development.

2.17 The suggested framework for describing the impacts on the basis set out above is set out in Table 2.4. The term Air Quality Assessment Level (AQAL) is used to include air quality objectives or limit values, where these exist. The Table is only intended to be used with annual mean concentrations, and all % changes are rounded up or down to whole numbers. At exposures less than 75% of the AQAL, the degree of harm is described as likely to be small. As the exposure encroaches and exceeds the AQAL the degree of harm increases, and the change becomes more important when the result is an exposure that is approximately equal to or greater than the AQAL.

Table 2.4: Impact Descriptors for Individual Receptors

| Long term average Concentration at receptor in assessment year | % Change in concentration relative to Air Quality Assessment Level (AQAL) | | | |
|--|---|-------------|-------------|-------------|
| | 1 | 2-5 | 6-10 | >10 |
| 75% or less of AQAL | Negligible | Negligible | Slight | Moderate |
| 76-94% of AQAL | Negligible | Slight | Moderate | Moderate |
| 95-102% of AQAL | Slight | Moderate | Moderate | Substantial |
| 103-109% of AQAL | Moderate | Moderate | Substantial | Substantial |
| 110% or more of AQAL | Moderate | Substantial | Substantial | Substantial |

2.18 A judgement of the significance of the impacts is to be made by a competent professional who is suitably qualified, and the reasons for reaching the conclusions should be transparent and set out logically. Whilst the starting point for the assessment of significance is the degree of impact, as defined by Table 2.4, this should be seen as only one of the factors for consideration, not least because the outcome of this assessment procedure applies to a receptor and not the overall impact of the scheme on the locality.

2.19 The guidance also makes it clear that the presence of an AQMA should not halt all development, but where development is permitted, the planning system should ensure that any impacts are minimised as far as is practicable. Even where developments are proposed outside of AQMAs, and where pollutant concentrations are predicted to be below the objectives/limit values, it remains important that the proposed development incorporates good design principles and best practice measures and that emissions are fully minimised.

Construction Dust Nuisance

2.20 There is no specific guidance relating to the assessment of construction dust nuisance within Government documents such as the DMRB. Consequently, guidance from relevant national bodies provides the best advice for establishing the potential impacts from dust. Research carried out by the Buildings Research Establishment (BRE) indicates that the likelihood of complaints concerning dust nuisance is related to the distance of receptors from a construction site and the duration of dust raising activities. This relationship is shown in Table 2.5.

Table 2.5: Likelihood of Dust Complaints by Distance

| Duration of dust raising activity onsite | Distance from site | | | |
|--|--------------------|-------------|----------------------|----------------------|
| | < 20 m | 20 – 50 m | 50 – 100 m | 100 – 150 m |
| Likelihood of complaint | | | | |
| > 12 months | Very Likely | Very Likely | Likely | Potential Likelihood |
| 6 – 12 months | Very Likely | Likely | Likely | Potential Likelihood |
| < 6 months | Very Likely | Likely | Potential Likelihood | Not Likely |

Note: Beyond 150 m dust nuisance is considered largely unlikely (Upton & Kukadia, 2002, Measurements of PM₁₀ from a Construction Site: A Case Study, prepared by BRE Environment for National Society for Clean Air).

2.21 Further empirically derived measures of the maximum distance from a source of airborne dust within which significant adverse effects are likely to be observed, are presented in Table 2.6. These values reflect qualitative estimates derived from historical data presented within environmental assessment reports and expert evidence.

Table 2.6: Qualitative Construction Dust Assessment Criteria

| Source Descriptors | | Zone for Potentially Significant Effects (Distance from Source) | |
|-----------------------------------|----------------|---|--------------------|
| Source | Duration | Soiling | PM ₁₀ * |
| Large construction sites | 1 year or more | 100 m | 25-50 m |
| Moderate sized construction sites | Months | 50 m | 15-30 m |
| Minor construction sites | Weeks | 25 m | 10-20 m |

*Based on 35 permitted exceedances of 50 µg/m³ in a year, as defined in The Air Quality (England) Regulations.
Source: Adapted from Thames Gateway Bridge – Environmental Statement (Laxen, 2004)

Dust Risk Assessment

2.22 The Institute of Air Quality Management (IAQM) Guidance on the assessment of dust from demolition and construction, January 2024, provides a framework for the assessment of risk.

2.23 The guidance divides activities on construction sites into four types to reflect their different potential impacts. These are:

- Demolition;
- Earthworks;
- Construction; and
- Trackout.

2.24 The assessment methodology considers the following three separate dust effects, with account being taken of the distance of the receptors that may experience these effects.

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

2.25 The assessment procedures and risk categories for each of the four phases of construction where the potential for dust is high, i.e., those listed above, are summarised in **Appendix D**.

2.26 Step 1 establishes that an assessment will normally be required where there are dwellings within 250m of the site boundary.

3.0 LOCAL AUTHORITY AIR QUALITY REVIEW AND ASSESSMENT

Gravesham Borough Council

3.1 There are currently three Air Quality Management Areas (AQMA) within the Gravesham Borough Council (GBC) area. The AQMA were declared due to exceedances to the annual mean nitrogen dioxide (NO₂) objectives, and are located as follows:

- Gravesham A2 (AQMA No.1): located approximately 4km north of the Site;
- Gravesham A226 One-way System (AQMA No.3): located approximately 7km north of the Site; and
- Gravesham A227 Wrotham Road / B261 Old Road West (AQMA No.4): located approximately 6km north of the Site.

3.2 GBC's most recently published 2024 Annual Status Report (ASR) states:

“During 2023, 66 passive monitoring locations reported a decrease in NO₂ concentrations relative to 2022, with the remaining 1 reporting an increase from 2022. GR142 (36.9 µg/m³) reported the only concentration within 10% of the NO₂ AQS, however fall-off with distance calculations were required to predict the concentration to the nearest relevant receptor, the estimated concentration is 28.4 µg/m³...”

AQMA No.1 (A2 Trunk) has achieved 1 year of compliance, 4 out of 9 passive monitoring locations have 5 years compliance. The remaining 5 sites reported one and two years of compliance (excluding COVID years 2020/2021). Taking into account fall off with distance calculations, GR142 has now been compliant for 1 year, therefore the council will need to maintain monitoring at these locations until at earliest to the end of 2025 for revocation to be considered.

AQMA No.3 (A226 One-Way System Gravesend AQMA) has achieved 1 year of compliance, 5 out of 12 sites have 5 years of compliance, 6 sites with two years of compliance (excluding COVID years 2020/2021), and 1 site with 1 year compliance. Therefore, it is expected that revocation at earliest would need 3 more years of monitoring with GR13 currently reporting one year of compliance.

AQMA No.4 (A227/B261 Wrotham Road/Old Road West Junction AQMA) has achieved 2 years of compliance, both sites have 2 years of compliance (excluding COVID years 2020/2021). Therefore, it is expected that revocation at earliest would need 2 more years of monitoring.”

3.3 GBC operates a comprehensive network of 2 automatic (continuous) monitoring sites and 67 non-automatic (passive) diffusion tube locations throughout the district, including 4 diffusion tubes located between 70m and 650m of the Site in Higham, and the concentrations for these tubes are presented in Table 3.1.

Table 3.1: GBC Monitoring Data

| Site ID | OS Co-ordinates | Annual Mean Concentrations ($\mu\text{g}/\text{m}^3$) | | |
|----------------|------------------------|---|-------------|-------------|
| | | 2021 | 2022 | 2023 |
| GR148 | 571572,172847 | 14.3 | 13.4 | 10.8 |
| GR149 | 571445,172881 | 14.7 | 13 | 11.6 |
| GR150 | 571250,172933 | 16.1 | 15.1 | 12.6 |
| GR151 | 571371,172270 | 18.8 | 18.4 | 15.8 |

3.4 The information in Table 3.1 indicates that concentrations within Higham lie well below the annual mean objective level of $40 \mu\text{g}/\text{m}^3$.

3.5 In conclusion, air quality within the GBC area is generally good, with air quality objective levels met throughout the Council's administrative area. Since 'relevant exposure' is already present adjacent to the Site, i.e., existing residential dwellings are present adjacent to the Site and local roads, and these have already been considered within GBC's reviews and assessments, the same conclusions will apply for new dwellings on the Site. Namely, all air quality objectives will be satisfied on the Site and at dwellings adjacent to the routes to the Site.

3.6 Nevertheless, it will be important that the air quality assessment for the proposed development looks at the potential effects of traffic generated by development upon existing dwellings adjacent to local roads to establish that there will be no adverse effects upon their existing standards of air quality. This matter is covered in the following section.

4.0 AIR QUALITY ASSESSMENT

Traffic Data

4.1 Baseline and 'with development' Annual Average Daily Traffic (AADT) flows and % heavy goods vehicles for Chalk Road have been provided by the project's Transport Consultant; Hub Transport Planning Ltd. This information is provided for a baseline scenario in 2025, and a baseline plus committed development scenario, without and with proposed development in 2030. The relevant information is presented in Table 4.1.

Table 4.1: Annual Average Daily Traffic Flows

| Situation | Year | AADT | %HGV | kph | Distance (m) |
|---|------|------|------|-----|--------------|
| Higham Road Baseline (east of access) | 2025 | 1230 | 3 | 48 | 5 |
| Higham Road (east of access) Base+Com | 2030 | 1300 | | | |
| Higham Road (east of access) Base+Com+Dev | 2030 | 1452 | | | |
| Higham Road Baseline (west of access) | 2025 | 1230 | 3 | 48 | 10 |
| Higham Road (west of access) Base+Com | 2030 | 1300 | | | |
| Higham Road (west of access) Base+Com+Dev | 2030 | 1364 | | | |

Methodology

4.2 An air quality screening assessment has been undertaken using the methodology defined by the Government's Design Manual for Road and Bridge (DMRB), which is also an approved screening model (version 2007) under the LAQM guidance. The need for any detailed dispersion modelling is determined from the results of the DMRB screening.

4.3 The traffic flow data has been used to calculate ambient concentrations of air pollution at existing dwellings adjacent to Chalk Road, i.e., at the distances shown in Table 4.1 from the road centreline.

4.4 For determining compliance with air quality objectives, it is important that the contribution of emissions from baseline traffic is added to background concentrations already present in the area; as defined below.

Background Concentrations

4.5 Suitable estimates of background air quality have been derived in accordance with LAQM.TG(22) using the air pollution background concentration maps published by Defra. The maps are updated by Defra periodically to reflect changes to underlying data including emissions factors. In recent years there have been annual updates due to new information on NO_x emissions from diesel vehicles, and fleet and vehicle activity data have also been updated.

4.6 Average background pollutant concentrations for local 1 x 1 km grid squares are available for all future years, and Table 4.2 shows the background concentrations that were used in this assessment. Background values for NO_x are presented, as they are required in the conversion of modelled NO_x concentrations to total NO₂. Only those pollutants of real concern to the local authority, namely NO₂ and PM₁₀, are considered.

Table 4.2: Background Concentrations, Annual Mean (µg/m³)

| OS Co-ordinates | Year | NO _x | NO ₂ | PM ₁₀ |
|------------------------------|------|----------------------|----------------------|----------------------|
| 570500,172500 | 2025 | 15.71 ^(b) | 11.70 ^(b) | 15.15 ^(b) |
| 571500,172500 ^(a) | | 15.56 | 11.60 | 14.09 |
| 572500,172500 | | 15.05 | 11.26 | 14.37 |

(a) 1 x 1 km grid square encompassing the Site
 (b) Concentrations used within assessment

4.7 To provide a robust 2030 future year scenario, the assessment utilises future year traffic flow data, together with 2025 background data. Background concentrations and vehicle emission factors are projected to decrease year on year due to fleet composition and technological changes. Using 2025 data therefore provides a conservative case for the future year scenario.

Impact assessment

4.8 The information relating to traffic flows and background concentrations has been input to the DMRB screening model along with the distance representing the shortest distance between the road centreline, and existing dwellings adjacent to Chalk Road. The results of the DMRB assessment are presented in **Appendix E**.

4.9 The results indicate that for baseline scenarios in both 2025 and 2030, receptors adjacent to Chalk Road have values below the current annual mean air quality objectives for NO₂ and PM₁₀, which is consistent with GBC's air quality review and assessments.

4.10 With traffic generated by development in 2030, the absolute concentrations remain below the current air quality objectives, and the level of change due to traffic generated by development is small (less than 0.1 µg/m³ to annual mean concentrations of NO₂ and PM₁₀), which would not have a significant impact upon local air quality.

4.11 The ambient concentrations of local traffic emissions from proposed development are predicted to be less than 75% of the Air Quality Assessment Level (AQAL) (see Table 2.4), and the % change in concentration relative to the AQAL is calculated to be less than 1%. On this basis, the development's impact on local air quality will be negligible.

4.12 Using the significance flowchart in **Appendix C**, the Site would not contribute to air quality exceedances or lead to the designation of a new AQMA, nor would it significantly increase emissions or lead to new exposure to emissions considered to be significant. Therefore, the air quality issues for the Site are not deemed to be a significant consideration.

4.13 In addition, it should be noted that the future design scenario has been undertaken using future year traffic flow data, together with 2025 background data, to account for current uncertainty in future year projections. Background concentrations and vehicle emission factors are projected to decrease year on year due to fleet composition and technological changes. Using 2025 data therefore provides a conservative case for the future scenario, thereby representing a robust scenario.

4.14 Therefore, since the air quality assessment indicates that annual mean air quality objectives will be met at the most exposed receptor locations, and since the actual changes due to traffic generated by development are small and not significant, it can be concluded that the air quality over the Site is acceptable for residential development and that baseline plus committed and proposed development traffic will not have any adverse impacts on ambient air quality for existing dwellings. The results do not indicate a requirement for more detailed dispersion modelling.

Construction Dust Risk Assessment

4.15 Nuisance dust impacts are likely to be temporary and episodic (most noticeable during dry windy conditions) and would not persist beyond completion of construction.

4.16 Where dust raising activities are present for 12 months or more, dust complaints are considered to be very likely for those closest receptors to the Site that lie between 10-30m from the Site boundary. Therefore, appropriate dust mitigation measures will be required to minimise dust emissions from the Site.

4.17 In addition, the qualitative dust assessment criteria in Table 2.6 indicates that existing premises adjacent to the Site will lie within the zone for potentially significant effects for soiling and ambient concentrations of PM₁₀.

4.18 Applying IAQM risk assessment procedures as set out in **Appendix D** requires an assessment where there are sensitive receptors within 250m of the Site boundary of the works and/or within 50m of the routes used by construction vehicles on the public highway up to 500m from the Site entrance. Existing premises fall within 250m zone which triggers the initial screening criterion.

4.19 The stages considered by the dust risk assessment are presented in Table 4.3. The assessments and conclusions are based upon the classifications for a 'Small' construction site, as the total working area is predicted to lie within the relevant threshold. There are no known ecological areas within 50m of the works.

Table 4.3: Dust Risk Assessment

| Step | Consideration | Demolition | Earthworks | Construction | Track-out |
|------|------------------------------------|------------|------------|--------------|-----------|
| 2a | Scale/nature of works | Small | Small | Small | Small |
| 2b | Sensitivity of area: | | | | |
| | To dust soiling | Medium | Medium | Medium | Medium |
| | To PM ₁₀ health effects | Low | Low | Low | Low |
| | To ecological effects | - | - | - | - |
| 2c | Risk of impacts | Low Risk | Low Risk | Low Risk | Low Risk |

4.20 The assessments in Table 4.3 and the IAQM matrices have been used to define the Site-specific mitigation requirements for the construction phases and the overall risk assessment for dust from the construction works is summarised in Table 4.4.

Table 4.4: Summary Dust Risk Table to define Site-Specific Mitigation

| Source | Dust Soiling Effects | PM ₁₀ Effects | Ecological Effects |
|--------------|----------------------|--------------------------|--------------------|
| Demolition | Low Risk | Negligible Risk | - |
| Earthworks | Low Risk | Negligible Risk | - |
| Construction | Low Risk | Negligible Risk | - |
| Track-out | Low Risk | Negligible Risk | - |

4.21 With regard to dust soiling, the risk assessment indicates that on the basis of no mitigation being present, all phases would present a 'Low Risk'.

4.22 With regard to PM₁₀ effects, the risk assessment indicates that on the basis of no mitigation being present, all phases would present a 'Negligible Risk' to health.

4.23 The IAQM guidance on the mitigation measures needed to deal with low, medium or high risk effects is set out in **Appendix F**.

5.0 MITIGATION

5.1 Assessment has shown that the annual mean air quality objectives will be met at the most exposed receptor locations, and the Site is acceptable for residential development. It is therefore considered that development-specific mitigation will not be required.

5.2 Nevertheless, to assist in offsetting incremental creep in pollutant emissions, a number of sustainable measures have been considered as part of the transport assessment work, which include, but are not limited to:

- Measures to support public transport, cycling and walking infrastructure such as provision of new footways, crossing points and links to existing infrastructure.

5.3 In addition to any measures considered as part of the transport assessment work, the following measures should be included as standard:

- Electric vehicle charging – in accordance with Approved Document S; and
- Low NO_x heating and boilers.

Construction Dust

5.4 It is recommended that the relevant mitigation presented in **Appendix F**, appropriate for a ‘Low Risk’ site, should be routinely included in the Site’s dust management plan for the relevant phase of construction. Key measures known to minimize dust emissions and represent good practice guidance are summarised Table 5.1.

Table 5.1: Key Dust Mitigation Measures

| Aspect | Mitigation Measures |
|----------------------|---|
| Site Planning | No bonfires Plan site layout - machinery and dust causing activities should be located away from sensitive receptors |
| Construction Traffic | All vehicles should switch off engines when not in active use – no idling vehicles Wash or clean all vehicles effectively before leaving the site if close to sensitive receptors All loads entering and leaving site to be covered No site runoff of water or mud All non-road mobile machinery (NRMM) to use ultra low sulphur tax-exempt diesel (ULSD) where available |
| Demolition Works | Use water as dust suppressant Cutting equipment to use water as suppressant or suitable local exhaust ventilation systems Securely cover skips and minimize drop heights |
| Site Activities | To employ best practicable means in the control of dust Minimise dust generation activities Use water as dust suppressant where possible Keep stockpiles for the shortest possible times |
| Site Management | Appointment of a site agent whose contact details are provided to the LPA’s Environmental Health Department and local residents prior to construction works starting. Agent to provide immediate response to any complaints by logging details of complaint and investigating source of complaint to establish whether routine mitigation measures have been properly implemented. If necessary, appropriate steps to be taken to mitigate against any adverse effects, and details of actions to be logged. |

6.0 CONCLUSIONS

- 6.1 MEC has been commissioned by Richborough, to undertake an Air Quality Assessment for a proposed residential development at Chalk Road, Higham.
- 6.2 Air quality within the GBC area is generally good, with air quality objective levels met throughout the Council's administrative area. Since 'relevant exposure' is already present adjacent to the Site, i.e., existing residential dwellings are present adjacent to the Site and local roads, and these have already been considered within GBC's reviews and assessments, the same conclusions will apply for new dwellings on the Site. Namely, all air quality objectives will be satisfied on the Site and at dwellings adjacent to the routes to the Site.
- 6.3 Assessments in accordance with Local Air Quality Management guidance indicate that for baseline scenarios in both 2025 and 2030, receptors adjacent to Chalk Road have values below the current annual mean air quality objectives for NO₂ and PM₁₀, which is consistent with GBC's air quality review and assessments.
- 6.4 With traffic generated by proposed development in 2030, the absolute concentrations remain below the current air quality objectives and the level of change due to traffic generated by development is small (less than 0.1 µg/m³ to annual mean concentrations of NO₂ and PM₁₀), which would not have a significant impact upon local air quality.
- 6.5 The ambient concentrations of local traffic emissions from proposed development are predicted to be less than 75% of the Air Quality Assessment Level (AQAL), and the % change in concentration relative to the AQAL is calculated to be less than 1%. On this basis, the development's impact on local air quality will be negligible.
- 6.6 The future year scenario has been undertaken using future year traffic flow data, together with 2025 background data, to account for current uncertainty in future year predictions.
- 6.7 Since the air quality assessment indicates that annual mean air quality objectives will be met at the most exposed receptor locations, and since the actual changes due to traffic generated by development are small and not significant, it can be concluded that the air quality over the Site is acceptable for residential development and that baseline plus committed and proposed development traffic will not have any adverse impacts on ambient air quality for existing dwellings. The results do not indicate a requirement for more detailed dispersion modelling.
- 6.8 Mitigation measures have been proposed to minimise the potential effects associated with increased air pollutant concentrations.
- 6.9 With regard to dust soiling, the risk assessment indicates that on the basis of no mitigation being present, all phases would present a 'Low Risk'.
- 6.10 With regard to PM₁₀ effects, the risk assessment indicates that on the basis of no mitigation being present, all phases would present a 'Negligible Risk' to health.

6.11 The relevant mitigation measures presented in the IAQM guidance for a 'Low Risk' site should be routinely included in the Site's dust management plan for the relevant earthworks and construction phases.



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APPENDICES



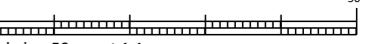
APPENDIX A



NOTES

No dimensions should be scaled during construction and any missing dimensions required should be requested and confirmed before proceeding. All dimensions must be checked on site and agreed with the client prior to construction.

The scale bar provided is for use so that the drawings can be scaled during the planning application process.



Scale bar 50mm at 1:1

SITE BOUNDARY

A 18.07.2025 RLB UPDATED TO INCL VIS SPLAYS.
Project
**LAND OFF CHALK ROAD
LOWER HIGHAM
GRAVESEND**

Title
LOCATION PLAN

Scale 1:1250 @ A3 Date APRIL 2025
Drawn JT Checked MB
Drawing Number 8990/P100 Revision A

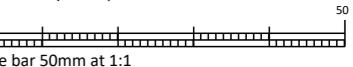
Saunders
Architecture + Urban Design

saundersarchitects.com | 01707 385300 | London | Welwyn Garden City



NOTES

This drawing to be read in accordance with the specification/Bills of Quantities and related drawings. No Dimensions to be scaled from this drawing. All stated dimensions to be verified on site and the Architect notified of any discrepancies.



KEY

- Site Boundary
- ■ ■ Railway line
- Proposed access/egress for all modes (subject to detailed design)
- ■ ■ Proposed location of SuDs/Attenuation features
- ■ ■ Proposed Green Amenity Space (including existing pond, children's play provision, footpaths, community orchard and drainage)
- ■ ■ Proposed Residential Development
- ■ ■ Proposed area for unallocated parking
- ■ ■ Focal space
- ■ ■ Recreational footpath
- ■ ■ Existing Trees
- ■ ■ Indicative proposed trees
- ■ ■ Proposed location for community orchard
- ■ ■ Proposed location for children's play

A 22.07.2025 MINOR AMENDMENTS FOLLOWING CLIENT COMMENTS. KB

Project

LAND OFF CHALK ROAD
LOWER HIGHAM
GRAVESEND

Title
ILLUSTRATIVE DEVELOPMENT
FRAMEWORK PLAN

Scale 1:1000 @ A3 Date JULY 2025
Drawn KB Checked MB
Drawing Number 8990/P103 Revision A

Saunders
Architecture + Urban Design

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APPENDICES



APPENDIX B

DEFINITION OF AIR QUALITY TERMS AND UNITS

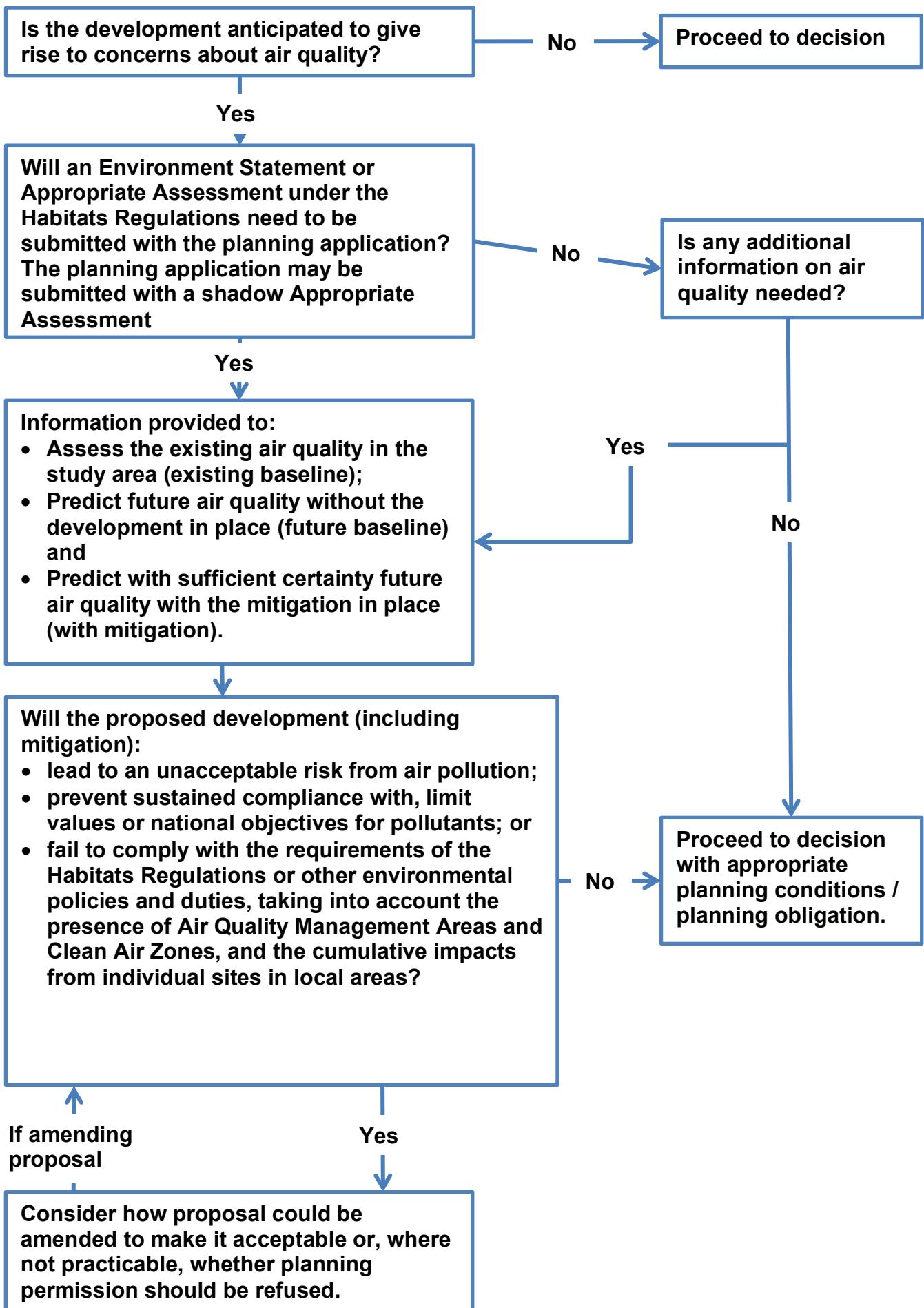
| | |
|--------------------------|--|
| ppm | parts per million - defines the units of pollution in every million (10^6) units of air. |
| ppb | parts per billion - defines the units of pollution in every billion (10^9) units of air. |
| $\mu\text{g}/\text{m}^3$ | microgrammes per cubic metre - one microgramme is one millionth of a gram. |
| ng/m^3 | nanogrammes per cubic metre – one nanogramme is one milliardth (i.e. one thousand millionth of a gram (10^{-9})) |
| Annual mean | the average of the concentrations measured for one year. |
| 1-hour mean | the average of the concentrations measured for one hour. |
| 24-hour mean | the average of the concentrations measured for twenty four hours. |
| Running mean | the mean or series of means calculated for overlapping time periods. For example, an 8-hour running mean is calculated every hour and averages the values for eight hours. The period of averaging is stepped forward by one hour for each subsequent value so that a degree of overlap exists between successive values. Non-running means are calculated for consecutive time periods so that there is no overlap. |
| Percentile | a value that establishes a particular threshold in a collection of data. For example, the 90 th percentile of yearly values is the value that 90% of all the data in the year fall below or equal. |
| Exceedance | a period of time when the concentration of a pollutant is greater than, or equal to, the relevant air quality standard. |



APPENDICES



APPENDIX C



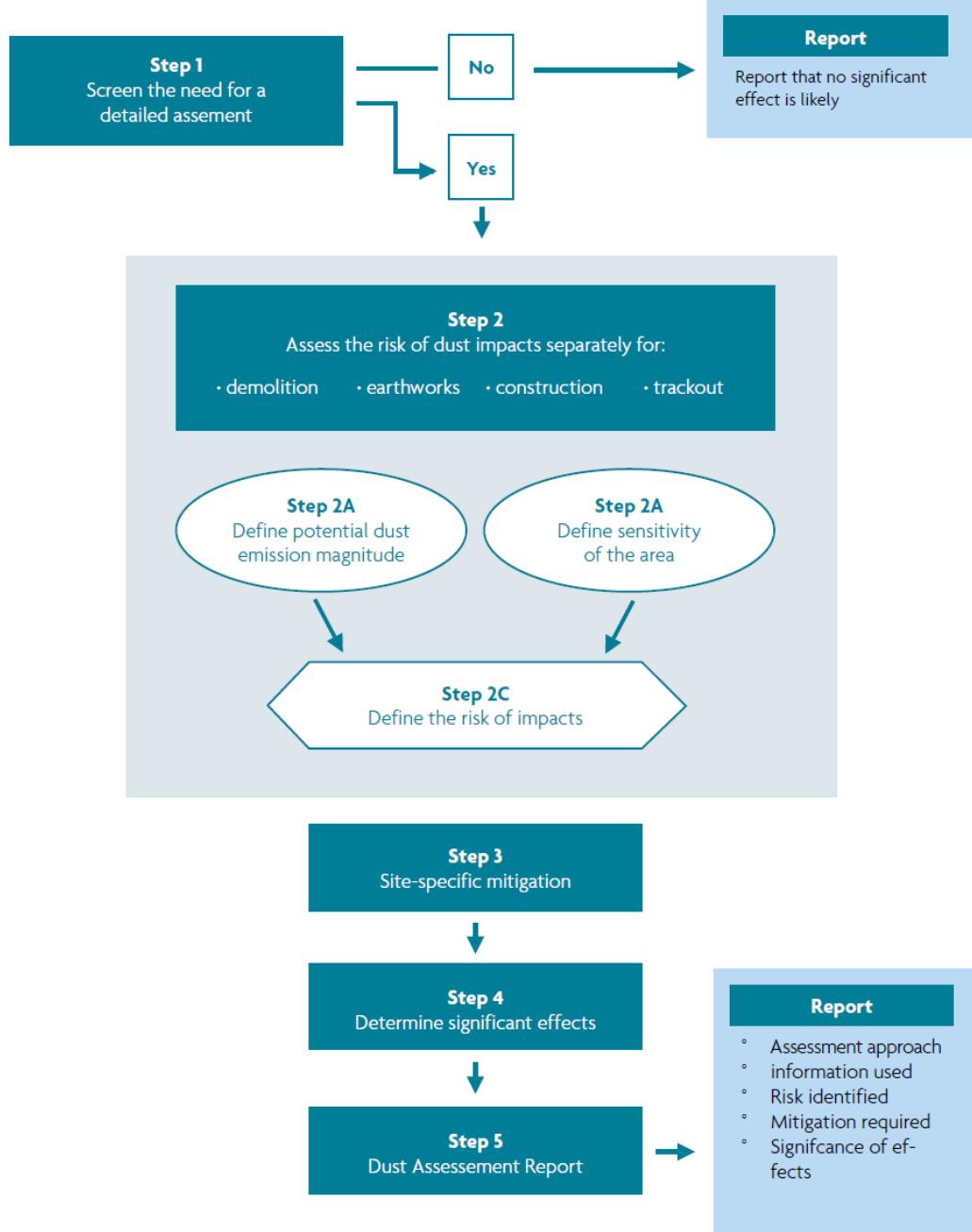


APPENDICES



APPENDIX D

Figure 1: Steps to Perform a Dust Assessment



Demolition

Examples:

- **Large:** Total building volume $>75,000\text{m}^3$, potentially dusty construction material (e.g. concrete), on-site crushing and screening, demolition activates $>12\text{m}$ above ground level;
- **Medium:** Total building volume $12,000\text{ m}^3 - 75,000\text{ m}^3$, potentially dusty construction material, demolition activities $6-12\text{ m}$ above ground level; and
- **Small:** Total building volume $<12,000\text{ m}^3$, construction material with low potential for dust release (e.g. metal cladding or timber), demolition activities $<6\text{m}$ above ground, demolition during wetter months.

Earthworks

Examples:

- **Large:** Total site area $>110,000\text{ m}^2$, potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size), >10 heavy earth moving vehicles active at any one time, formation of bunds $<6\text{m}$ in height;
- **Medium:** Total site area $18,000\text{ m}^2 - 110,000\text{ m}^2$, moderately dusty soil type (e.g. silt), 5-10 heavy earth moving vehicles active at any one time, formation of bunds $3\text{m} - 6\text{m}$ in height; and
- **Small:** Total site area $<18,000\text{ m}^2$, soil type with large grain size (e.g. sand), <5 heavy earth moving vehicles active at any one time, formation of bunds $<3\text{m}$ in height.

Construction

Examples:

- **Large:** Total building volume $>75,000\text{ m}^3$, on site concrete batching sandblasting;
- **Medium:** Total building volume $12,000\text{ m}^3 - 75,000\text{ m}^3$, potentially dusty construction material (e.g. concrete), on site concrete batching; and
- **Small:** Total building volume $<12,000\text{ m}^3$, construction material with low potential for dust release (e.g. metal cladding or timber)

Trackout

Examples:

- **Large:** >50 HDV ($>3.5\text{t}$) outward movements in any one day, potentially dusty surface material (e.g. high clay content), unpaved road length $>100\text{m}$;
- **Medium:** 20-50 HDV ($>3.5\text{t}$) outward movements in any one day, moderately dusty surface material (e.g. high clay content), unpaved road lengths $50\text{m}-100\text{m}$;
- **Small:** <20 HDV ($>3.5\text{t}$) outward movements in any one day, surface material with low potential for dust release, unpaved road length $<50\text{m}$.

These numbers are for vehicles that leave the site after moving over unpaved ground, where they will accumulate mud and dirt that can be tracked out onto the public highway.

Sensitivity of the Area to Dust Soiling Effects on People and Property^{ab}

| Receptor Sensitivity | Number of Receptors | Distance from the Source (m) ^c | | | |
|----------------------|---------------------|---|--------|--------|------|
| | | <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 |

^aThe sensitivity of the area should be derived for each of the four activities: demolition, construction, earthworks and trackout. See **STEP 2B, Box 6** and **Box 9**.

^bEstimate the total number of receptors within the stated distance. Only the highest level of area sensitivity from the table needs to be considered. For example, if there are 7 high sensitivity receptors <20m of the source and 95 high sensitivity receptors between 20 and 50 m, then the total of number of receptors <50 m is 102. The sensitivity of the area in this case would be high.

^cFor trackout, the distance should be measured from the side of the roads used by construction traffic. The impact declines with distance from the site, and it is only necessary to consider trackout impacts up to 50 m from the edge of the road.

Sensitivity of the Area to Human Health Impacts^{ab}

| Receptor Sensitivity | Annual Mean PM ₁₀ concentration ^c | Number of Receptors | Distance from the Source (m) ^c | | | |
|----------------------|---|---------------------|---|--------|--------|------|
| | | | <20 | <50 | <100 | <250 |
| High | >32 µg/m ³ (>18 µg/m ³ in Scotland) | >100 | High | High | High | Low |
| | | 10-100 | High | High | Medium | Low |
| | | 1-10 | High | Medium | Low | Low |
| | 28-32 µg/m ³ (16-18 µg/m ³ in Scotland) | >100 | High | High | Medium | Low |
| | | 10-100 | High | Medium | Low | Low |
| | | 1-10 | High | Medium | Low | Low |
| | 24-28 µg/m ³ (14-16 µg/m ³ in Scotland) | >100 | High | Medium | Low | Low |
| | | 10-100 | High | Medium | Low | Low |
| | | 1-10 | Medium | Low | Low | Low |
| | <24 µg/m ³ (<14 µg/m ³ in Scotland) | >100 | Medium | Low | Low | Low |
| | | 10-100 | Low | Low | Low | Low |
| | | 1-10 | Low | Low | Low | Low |
| Medium | >32 µg/m ³ (>18 µg/m ³ in Scotland) | >100 | High | Medium | Low | Low |
| | | 10-100 | Medium | Low | Low | Low |
| | | 1-10 | Medium | Low | Low | Low |
| | 28-32 µg/m ³ (16-18 µg/m ³ in Scotland) | >100 | Low | Low | Low | Low |
| | | 10-100 | Low | Low | Low | Low |
| | | 1-10 | Low | Low | Low | Low |
| | 24-28 µg/m ³ (14-16 µg/m ³ in Scotland) | >100 | Low | Low | Low | Low |
| | | 10-100 | Low | Low | Low | Low |
| | | 1-10 | Low | Low | Low | Low |
| | <24 µg/m ³ (<14 µg/m ³ in Scotland) | >100 | Low | Low | Low | Low |
| | | 10-100 | Low | Low | Low | Low |
| | | 1-10 | Low | Low | Low | Low |
| Low | - | >1 | Low | Low | Low | Low |

^aThe sensitivity of the area should be derived for each of the four activities: demolition, construction, earthworks and trackout. See **STEP 2B, Box 7** and **Box 9**.

^bEstimate the total within the stated distance (e.g. the total within 250m and not the number between 100 and 250 m), noting that only the highest level of area sensitivity from the table needs to be considered. For example, if there are 7 high sensitivity receptors <20m of the source and 95 high sensitivity receptors between 20 and 50 m, then the total of number of receptors <50 m is 102. If annual mean PM₁₀ concentrations is 29 µg/m³, the sensitivity of the area would be high.

^cMost straightforwardly taken from the national background maps, but should also take account of local sources. The values are based on 32 µg/m³ being the annual mean concentration at which an exceedance of the 14-hour objective is likely in England, Wales and Northern Ireland. In Scotland there is an annual mean objective of 18 µg/m³.

^dIn the case of high sensitivity receptors with high occupancy (such as schools or hospitals) approximate the number of people likely to be present. In the case of residential dwellings, just include the number of properties.

^eFor trackout, the distance should be measured from the side of the roads used by construction traffic. The impact declines with distance from the site, and it is only necessary to consider trackout impacts up to 50 m from the edge of the road.

Sensitivity of the Area to Ecological Impacts ^{ab}

| Receptor Sensitivity | Distance from the Source (m) ^c | |
|----------------------|---|--------|
| | <20 | <50 |
| High | High | Medium |
| Medium | Medium | Low |
| Low | Low | Low |

^aThe sensitivity of the area should be derived for each of the four activities: demolition, construction, earthworks and trackout and for each designated site. See **STEP 2B, Box 8** and **Box 9**.

^bOnly the highest level of area sensitivity from the table needs to be considered.

^cFor trackout, the distances should be measured from the side of the roads used by construction traffic. The impact declines with distance from the site.



APPENDICES



APPENDIX E

PREDICTED CONCENTRATIONS OF AIR POLLUTION

| Name | Year | NO _x | NO ₂ * | PM ₁₀ | |
|-------------------------------|------|-------------------------------|-------------------------------|-------------------------------|---------------------------|
| | | Annual mean µg/m ³ | Annual mean µg/m ³ | Annual mean µg/m ³ | Days >50µg/m ³ |
| Higham Rd (e of access) B | 2025 | 16.50 | 11.97 | 15.24 | 0.15 |
| Higham Rd (e of access) B+C | 2025 | 16.55 | 11.98 | 15.25 | 0.15 |
| Higham Rd (e of access) B+C+D | 2025 | 16.56 | 11.99 | 15.26 | 0.15 |
| Change | | 0.01 | 0.01 | 0.01 | 0.00 |
| Higham Rd (w of access) B | 2025 | 16.42 | 11.94 | 15.23 | 0.15 |
| Higham Rd (w of access) B+C | 2025 | 16.46 | 11.95 | 15.24 | 0.15 |
| Higham Rd (w of access) B+C+D | 2025 | 16.43 | 11.94 | 15.24 | 0.15 |
| Change | | -0.02 | -0.01 | 0.00 | 0.00 |

Note: The NO₂ criteria are defined in terms of both the annual mean of 40 µg/m³, and the number of exceedances of a 1-hour mean of 200 µg/m³. Whilst the annual mean NO₂ value is calculated, the number of exceedances of the hourly standard cannot be calculated from the annual mean with a high degree of confidence. Therefore, only the annual mean NO₂ value is reported.



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APPENDICES



APPENDIX F

Mitigation for all sites: Communications

| Mitigation measure | Low Risk | Medium Risk | High Risk |
|--|----------|-------------|-----------|
| 1. Develop and implement a stakeholder communications plan that includes community engagement before work commences on site. | N | H | H |
| 2. 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 |
| 3. Display the head or regional office contact information | H | H | H |

Mitigation for all sites: Dust Management

| Mitigation measure | Low Risk | Medium Risk | High Risk |
|--|----------|-------------|-----------|
| 4. 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 monitoring of dust deposition, dust flux, real-time PM ₁₀ continuous monitoring and/or visual inspections. | D | H | H |
| Site Management | | | |
| 5. 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 |
| 6. Make the complaints log available to the local authority when asked. | H | H | H |
| 7. 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 |
| 8. Hold regular liaison meetings with other high risk construction sites within 500m 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 | | | |
| 9. 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 100m of site boundary, with cleaning to be provided if necessary. | D | D | H |
| 10. 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 |
| 11. 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 |
| 12. 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. | N | H | H |
| Preparing and maintaining the site | | | |
| 13. Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible. | H | H | H |
| 14. 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 |
| 15. Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period | D | H | H |
| 16. Avoid site runoff of water or mud. | H | H | H |
| 17. Keep site fencing, barriers and scaffolding clean using wet methods. | D | H | H |

| Mitigation measure | Low Risk | Medium Risk | High Risk |
|---|----------|-------------|-----------|
| 18. 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 |
| 19. Cover, seed or fence stockpiles to prevent wind whipping. | D | H | H |
| Operating vehicle/machinery and sustainable travel | | | |
| 20. Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone and the London NRMM standards, where applicable | H | H | H |
| 21. Ensure all vehicles switch off engines when stationary - no idling vehicles. | H | H | H |
| 22. Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable. | H | H | H |
| 23. 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) | D | D | H |
| 24. Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials. | N | H | H |
| 25. Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing) | N | D | H |
| Operations | | | |
| 26. 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 |
| 27. 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 |
| 28. Use enclosed chutes and conveyors and covered skips. | H | H | H |
| 29. 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 |
| 30. 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 | | | |
| 31. Avoid bonfires and burning of waste materials. | H | H | H |

Measures specific to demolition

| Mitigation measure | Low Risk | Medium Risk | High Risk |
|--|----------|-------------|-----------|
| 32. Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust). | D | D | H |
| 33. Ensure effective water suppression is used during demolition operations. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground. | H | H | H |
| 34. Avoid explosive blasting, using appropriate manual or mechanical alternatives. | H | H | H |
| 35. Bag and remove any biological debris or damp down such material before demolition. | H | H | H |

Measures specific to earthworks

| Mitigation measure | Low Risk | Medium Risk | High Risk |
|---|----------|-------------|-----------|
| 36. Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable. | N | D | H |
| 37. Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable | N | D | H |
| 38. Only remove the cover in small areas during work and not all at once | N | D | H |

Measures specific to construction

| Mitigation measure | Low Risk | Medium Risk | High Risk |
|---|----------|-------------|-----------|
| 39. Avoid scabbling (roughening of concrete surfaces) if possible | D | D | H |
| 40. 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 |
| 41. 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 |
| 42. For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust. | N | D | D |

Measures specific to trackout

| Mitigation measure | Low Risk | Medium Risk | High Risk |
|--|----------|-------------|-----------|
| 43. 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 |
| 44. Avoid dry sweeping of large areas. | D | H | H |
| 45. Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport. | D | H | H |
| 46. Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable. | N | H | H |
| 47. Record all inspections of haul routes and any subsequent action in a site log book. | D | H | H |
| 48. 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 |
| 49. 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 |
| 50. 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 |
| 51. Access gates to be located at least 10m from receptors where possible. | N | H | H |

Key to Tables:

| | |
|---|--------------------|
| H | Highly recommended |
| D | Desirable |
| N | Not required |



CIVIL ENGINEERING



TRANSPORT



FLOOD RISK & DRAINAGE



STRUCTURES



GEO-ENVIRONMENTAL



ACOUSTIC AIR



UTILITIES



GEOMATICS



LIGHTING



EXPERT WITNESS



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