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ACOUSTIC AIR



Horncastle Care Centre, Plawhatch Lane, Sharpthorne
Air Quality Assessment
April 2025

Report Ref: 29528-ENV-0401

Horncastle Care Centre, Plawhatch Lane, Sharpthorne

Air Quality Assessment

April 2025

REPORT REF: 29528-ENV-0401

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REGISTRATION OF AMENDMENTS

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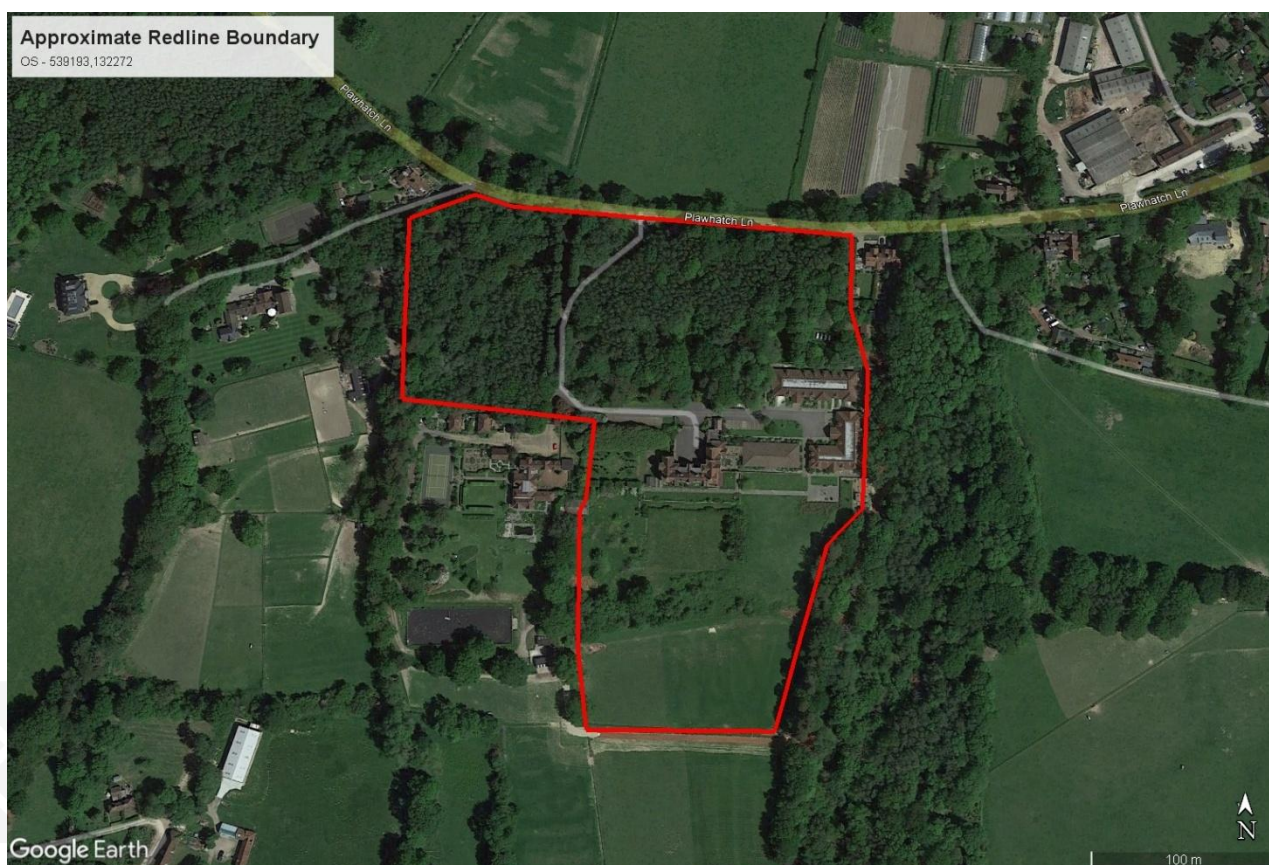
1.0 INTRODUCTION

- 1.1 MEC Consulting Group Ltd (MEC) has been commissioned by Splendid Projects Limited, to undertake an Air Quality Assessment for the proposed Horncastle Care Centre, at Plawhatch Lane, Sharpthorne (hereafter referred to as ‘the Site’).

Existing Site

- 1.2 The Site, historically occupied by a school and currently comprising a derelict 63-bed care home facility, is bound by Plawhatch Lane to the north; woodland and green field to the east and south; and existing residential to the west.
- 1.3 An approximate redline boundary is presented in Figure 1.1.

Figure 1.1: Approximate Redline Boundary



Development Proposals

- 1.4 Development proposals comprise the demolition of existing buildings, and the construction of new 80-bed care centre, with associated infrastructure and access via Plawhatch Lane.
- 1.5 A site layout is provided in **Appendix A**.

Assessment Scope

- 1.6 The assessment has been undertaken with reference to the advice provided within the Land-Use Planning and Development Control: Planning for Air Quality, and 'Guidance from Environmental Protection UK, May 2017, the Institute of Air Quality Management for the consideration of air quality within the land-use planning and development control processes', the 'Guidance on the assessment of dust from demolition and construction' 2024, and Sussex Air's '*Air Quality and emissions mitigation guidance for Sussex*'.

Disclaimer

- 1.7 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.
- 1.8 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.

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)		
All authorities	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, with respect to noise, 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: 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: - 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.

Construction Dust Nuisance

- 2.16 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 2.4.

Table 2.4: 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 PM ₁₀ from a Construction Site: A Case Study, prepared by BRE Environment for National Society for Clean Air).				

- 2.17 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 2.5. These values reflect qualitative estimates derived from historical data presented within environmental assessment reports and expert evidence.

Table 2.5: 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/m ³ in a year, as defined in The Air Quality (England) Regulations. Source: Adapted from Thames Gateway Bridge – Environmental Statement (Laxen, 2004)			

Dust Risk Assessment

- 2.18 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.
- 2.19 The guidance divides activities on construction sites into four types to reflect their different potential impacts. These are:
- Demolition;
 - Earthworks;
 - Construction; and
 - Trackout.
- 2.20 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.
- 2.21 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**.
- 2.22 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

Wealden District Council

3.1 Air Quality within the Wealden District Council (WDC) area is generally good and, to date, no Air Quality Management Areas (AQMA) have been declared.

3.2 WDC's most recently published 2024 Annual Status Report (ASR) states that *"In previous years, local monitoring has identified high concentrations of NO₂ at three roadside locations (A267 East of Cross in Hand (W7), West of Boship Roundabout (W8) and Forest Row High Street (W10)). In March 2017 the A267 East of Cross in Hand (W7) monitoring location was changed, due to difficult access and as it was not a representative site, with the monitor moved further down the road nearer to residential properties. In more recent years (2018-2021), concentrations at all these locations achieved the UK air quality objective for annual mean NO₂, with concentrations lower than 40µg/m³.*

Two new locations for monitoring NO₂ were introduced in 2022. High Street Wadhurst (W15) and Styles Lane Wadhurst (W16). In 2022, the annual mean NO₂ concentration observed at W15 was 15.1 µg/m³ and at W16 was 6.8 µg/m³, both well below the annual mean AQS NO₂ objective.

The ASR confirms that concentrations within Wealden continue to be well within the NO₂ annual mean AQS objective at relevant locations. No significant changes in emissions sources within the Council's area have been identified in the last year."

3.3 In conclusion, air quality within the WDC area is generally good and, to date, no Air Quality Management Areas (AQMA) have been designated, with air quality objective levels met throughout the District. 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 WDC'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.

3.4 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, and it can be concluded that the air quality over the Site is acceptable for residential development.

4.0 CONSTRUCTION DUST RISK ASSESSMENT

- 4.1 Nuisance dust impacts are likely to be temporary and episodic (most noticeable during dry windy conditions) and would not persist beyond completion of construction.
- 4.2 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.
- 4.3 In addition, the qualitative dust assessment criteria in Table 2.5 indicates that existing premises adjacent to the Site will lie within the zone for potentially significant effects for soiling and ambient concentrations of PM₁₀.
- 4.4 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.
- 4.5 The stages considered by the dust risk assessment are presented in Table 4.1. The assessments and conclusions are based upon the classifications for a 'Medium' construction site for demolition, and 'Small' construction site for earthworks, construction, and track-out, because the total working area is predicted to lie within the relevant threshold.

Table 4.1: Dust Risk Assessment

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

- 4.6 The assessments in Table 4.1 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 4.2.

Table 4.2: Summary Dust Risk Table to define Site-Specific Mitigation

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

- 4.7 With regard to dust soiling, the risk assessment indicates that on the basis of no mitigation being present, the demolition phase would present a 'Low Risk', whereas all other phases would present a 'Negligible Risk'.
- 4.8 Similarly, with regard to PM₁₀ effects, the risk assessment indicates that on the basis of no mitigation being present, the demolition phase would present a 'Low Risk', whereas all other phases would present a 'Negligible Risk' to health.
- 4.9 With regard to ecological impacts, the risk assessment indicates that on the basis of no mitigation being present, the demolition phase would present a 'Low Risk', whereas all other phases would present a 'Negligible Risk' to ecological receptors.
- 4.10 The IAQM guidance on the mitigation measures needed to deal with low, medium or high risk effects is set out in **Appendix E**.

5.0 EMISSIONS MITIGATION STATEMENT

General

- 5.1 A review of WDC's local air quality review and assessments indicate that the annual mean air quality objectives will be met across the Site and subsequently, the Site is acceptable for residential development. It is therefore considered that development-specific mitigation will not be required.
- 5.2 However, the Site is classified as a 'Major' development in accordance with Sussex Air Guidance and subsequently, requires an Emissions Mitigation Statement and damage cost analysis to quantify pollutant contributions from the Site, and identify off-setting measures to prevent incremental creep in pollutant concentrations.
- 5.3 Such measures would be in addition to those required by national policy outlined below:
- Electric vehicle charging – in accordance with Approved Document S 'Infrastructure for charging electric vehicles';
 - Site-wide Travel Plan; and
 - Low NO_x heating and boilers.

Damage Cost Analysis

- 5.4 To identify the pollutant damage costs associated with the Site, calculation has undertaken to estimate the additional pollutant emissions from proposed development traffic, using the methodology provided by Defra ([Air quality appraisal: damage cost guidance - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/air-quality-appraisal-damage-cost-guidance)).
- 5.5 The calculation process is summarised below:
- Identify additional trips generated by the development;
 - Calculation of the additional emissions (kg/annum) for the pollutants of concern (NO_x and PM_{2.5}) using the latest Defra Emissions Factor Toolkit (v12.0.1), and assuming an average distance of 10km per trip and an average speed of 50kph. The year of 2024 has been used; and
 - Estimate damage cost using DEFRA's Damage Cost Appraisal Toolkit, 2023.
- 5.6 Trip rates associated with the Site have been provided by the project's Transport Consultant; Transport Planning & Highways Ltd. The Transport Consultant has advised that these rates can be multiplied by the number of bedrooms, to provide a total Annual Average Daily Traffic (AADT) contribution for the Site, and this information is presented in Table 5.1.

Table 5.1: Derived Total Annual Average Daily Traffic Contribution

Scenario	Arrivals	Departures
Trip rate	1.221	1.242
No. of Bedrooms	80	80
AADT	98	99

5.7 There are predicted to be 197 light vehicle movements, with no HGV contributions, associated with the Site per day.

5.8 The estimated damage cost to offset vehicle emissions associated with the Site are presented in **Appendix F**, and summarised below in Table 5.2.

Table 5.2: Estimated Damage Cost

Central Present Total 5-year Value (2024 – 2028)		
NO _x	PM _{2.5}	Total
£7,897	£5,807	£13,704

5.9 The total cost associated with development generated road traffic from the Site is £13,704, and this value can be used as a measure against any proposed sustainable mitigation measures that do not constitute national requirements, which are being considered as part of the Transport Assessment work for the Site.

Construction Dust

5.10 It is recommended that the relevant mitigation presented in **Appendix E**, 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 5.3.

Table 5.3: 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 Splendid Projects Limited, to undertake an Air Quality Assessment for a proposed new care home at Horncastle Care Centre, Plawhatch Lane, Sharpthorne.
- 6.2 Air quality within the WDC area is generally good and, to date, no Air Quality Management Areas (AQMA) have been designated, with air quality objective levels met throughout the District. 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 WDC'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 Nevertheless, mitigation measures have been proposed to minimise the potential effects associated with increased air pollutant concentrations.
- 6.4 With regard to dust soiling, the risk assessment indicates that on the basis of no mitigation being present, the demolition phase would present a 'Low Risk', whereas all other phases would present a 'Negligible Risk'.
- 6.5 Similarly, with regard to PM₁₀ effects, the risk assessment indicates that on the basis of no mitigation being present, the demolition phase would present a 'Low Risk', whereas all other phases would present a 'Negligible Risk' to health.
- 6.6 With regard to ecological impacts, the risk assessment indicates that on the basis of no mitigation being present, the demolition phase would present a 'Low Risk', whereas all other phases would present a 'Negligible Risk' to ecological receptors.
- 6.7 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.
- 6.8 In conclusion, 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, and it can be concluded that the air quality over the Site is acceptable for residential development.

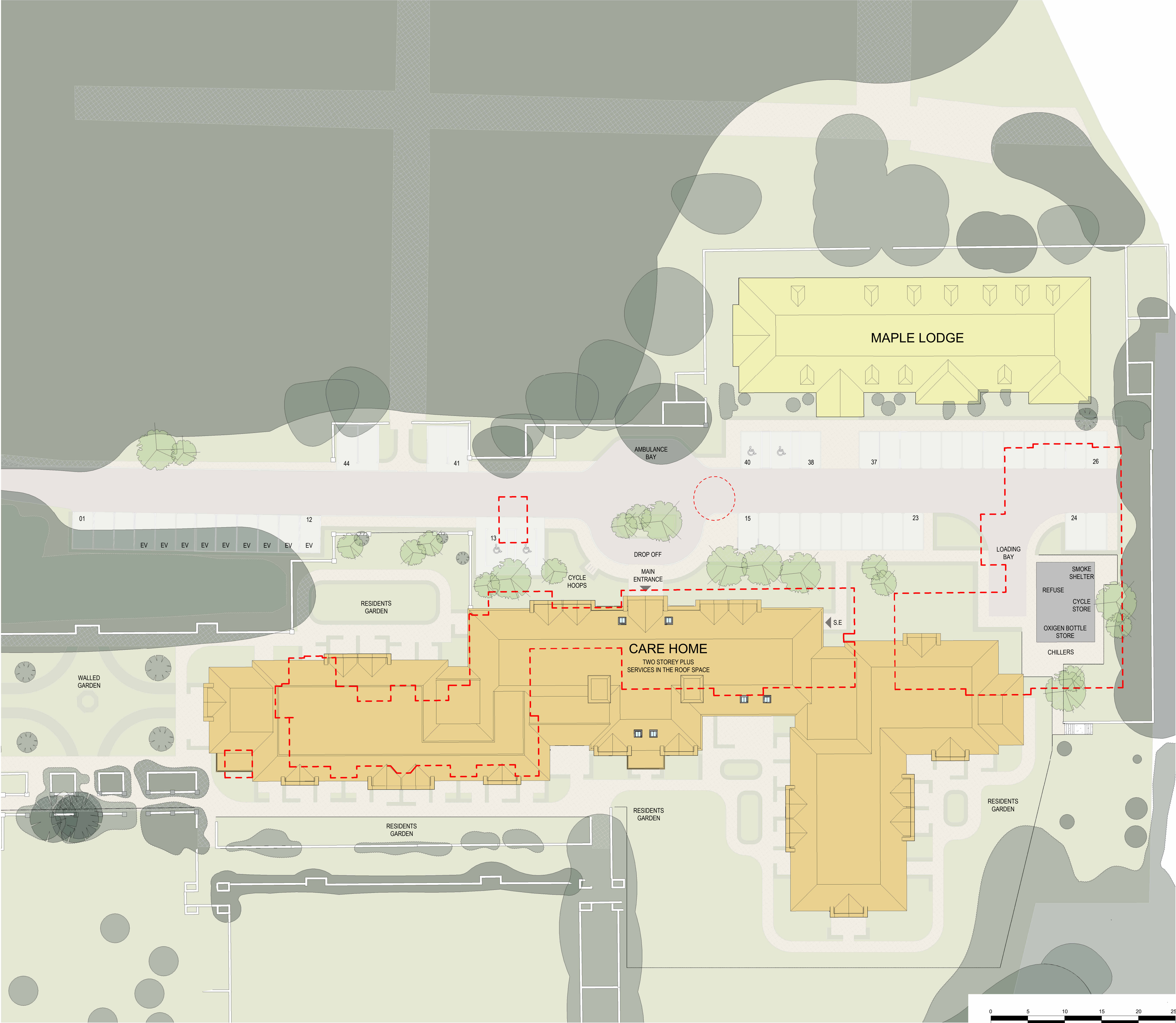


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APPENDICES



APPENDIX A

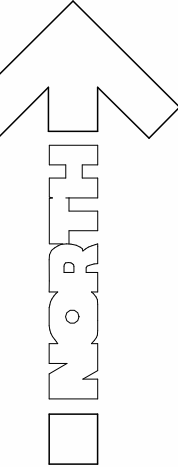


SCHEDULE OF ACCOMMODATION	
SITE AREA BOUNDARY	
5.61 Ha / 13.86 acres	
CARE HOME	
GROUND FLOOR	40 BEDROOMS
FIRST FLOOR	40 BEDROOMS
TOTAL	80
GROSS INTERNAL FLOOR AREA	
GROUND	2,050 m ²
FIRST	2,035 m ²
SECOND	405 m ²
TOTAL	4,495 m ²
SPACE PER RESIDENT	56.2 m ²
PARKING (INCL. 4 DISABLED BAYS)	44

--- OUTLINE OF EXISTING BUILDINGS TO BE DEMOLISHED

KEY:

- PROPOSED TREES
- EXISTING TREES
- REMOVED TREES



P8	ISSUED FOR COORDINATION	MD	PK	20/02/2025
P7	DESIGN REVIEW PANEL	MD	PK	12/12/2024
P6	ISSUED FOR COMMENTS	MD	PK	28/06/2024
P5	ISSUED FOR COMMENTS	MD	PK	30/05/2024
P4	ISSUED FOR COMMENTS	SR	MD	21/02/2024

Rev.	Description	Author	Checked	Date
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Design the best,
to live the best

Client	SPLENDID HEALTHCARE
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Project	HORNCastle EAST GRINSTEAD
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Title	SITE LAYOUT	CAP no.	A
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For construction purposes dimensions shall not be scaled & figured dimensions must be verified on site before work commences.
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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.

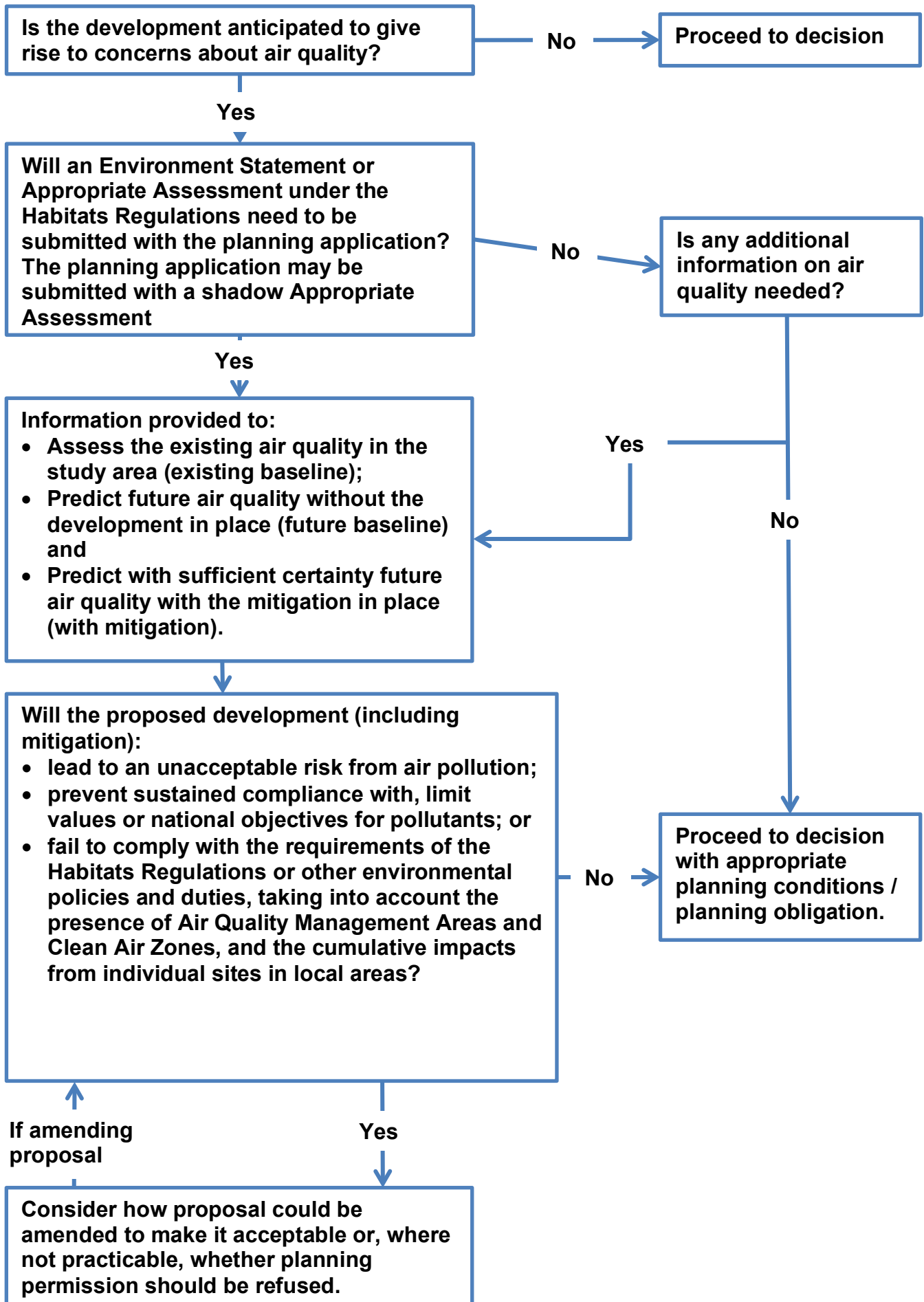


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APPENDIX C





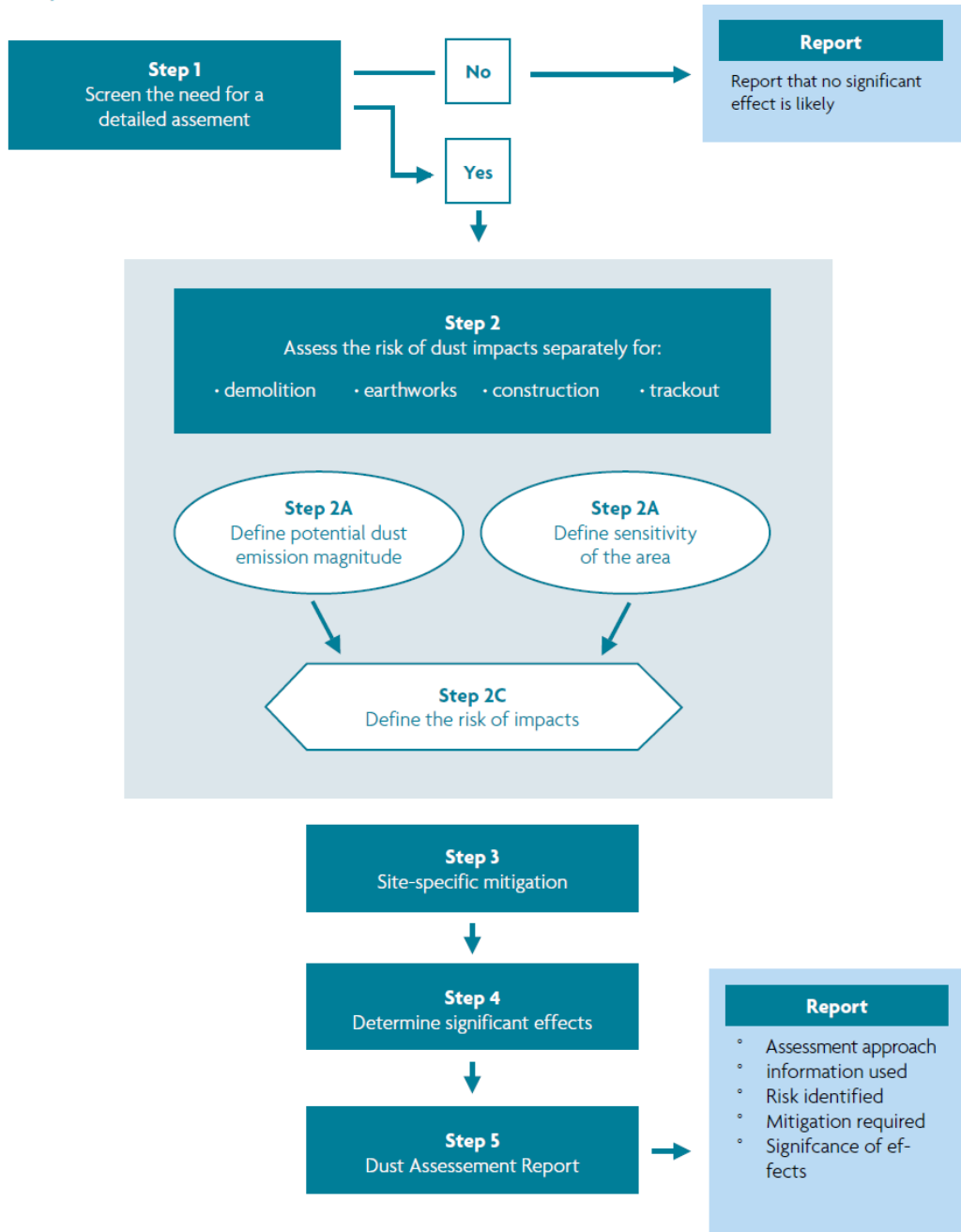
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APPENDIX D

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 activities $>12\text{m}$ 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 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 $>110,00\text{ m}^2$, 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 3m – 6m 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 50m-100m;
- **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

^a The 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**.

^b Estimate 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.

^c For 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	Low	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

^a The 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**.

^b Estimate 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.

^c Most 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 18µg/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

^a The 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**.

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

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



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APPENDICES



APPENDIX E

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 PM10 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 bowzers 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



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APPENDICES



APPENDIX F

NOx Road Transport

Year	2025	2026	2027	2028	2029
Reduction in emissions (tonnes)	0.126124937	0.12869892	0.13132542	0.13400553	0.13674034
Central Damage Costs (£)	12390	12390	12390	12390	12390
Central Benefit (£)	1563	1595	1627	1660	1694
Discounted Central Benefit (£)	1563	1571	1579	1588	1596
Central Present Value	£7,897				
Low Sensitivity Damage Costs (£)	2063	2063	2063	2063	2063
Low Sensitivity Benefit (£)	260	265	271	276	282
Discounted Low Sensitivity Benefit (£)	260	262	263	264	266
Low Sensitivity Present Value	£1,315				
High Sensitivity Damage Costs (£)	47648	47648	47648	47648	47648
High Sensitivity Benefit (£)	6010	6132	6257	6385	6515
Discounted High Sensitivity Benefit (£)	6010	6042	6074	6106	6139
High Sensitivity Present Value	£30,370				

PM2.5 Road Transport

Year	2025	2026	2027	2028	2029
Reduction in emissions (tonnes)	0.0128158	0.0130773	0.0133442	0.0136165	0.0138944
Central Damage Costs (£)	89667	89667	89667	89667	89667
Central Benefit (£)	1149	1173	1197	1221	1246
Discounted Central Benefit (£)	1149	1155	1161	1168	1174
Central Present Value	£5,807				
Low Sensitivity Damage Costs (£)	35563	35563	35563	35563	35563
Low Sensitivity Benefit (£)	456	465	475	484	494
Discounted Low Sensitivity Benefit (£)	456	458	461	463	466
Low Sensitivity Present Value	£2,303				
High Sensitivity Damage Costs (£)	257460	257460	257460	257460	257460
High Sensitivity Benefit (£)	3300	3367	3436	3506	3577
Discounted High Sensitivity Benefit (£)	3300	3317	3335	3353	3370
High Sensitivity Present Value	£16,674				



CIVIL ENGINEERING



TRANSPORT



FLOOD RISK & DRAINAGE



STRUCTURES



GEO-ENVIRONMENTAL



ACOUSTIC AIR



UTILITIES



GEOMATICS



LIGHTING



EXPERT WITNESS



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