

Report

Land South of Coate Lane, Devizes

Air Quality Assessment

For Robert Hitchins Ltd

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1 Introduction

- 1.1 This report has been prepared by Air Quality Consultants Ltd | Part of Logika Group (AQC). It describes the potential air quality impacts associated with the proposed residential development of land south of Coate Lane, Devizes. The proposed development is for up to 175 residential dwellings, associated works, open space, infrastructure and landscaping with vehicular access from Coate Lane.
- 1.2 The proposed development is located within 70 m of the Devizes Shanes Castle Air Quality Management Area (AQMA), declared by Wiltshire Council (WC) for exceedances of the annual mean nitrogen dioxide (NO₂) objective.
- 1.3 The proposed development will introduce new residential exposure near to this area of potentially poor air quality; thus, an assessment is required to determine the air quality conditions that future residents will experience. It will also generate additional traffic on local roads, which may impact on air quality at existing residential properties along the affected road network. The main air pollutants of concern related to road traffic emissions are NO₂ and fine particulate matter (PM₁₀ and PM_{2.5}).
- 1.4 The location and setting of the proposed development are shown in Figure 1-1, along with the nearby AQMA.

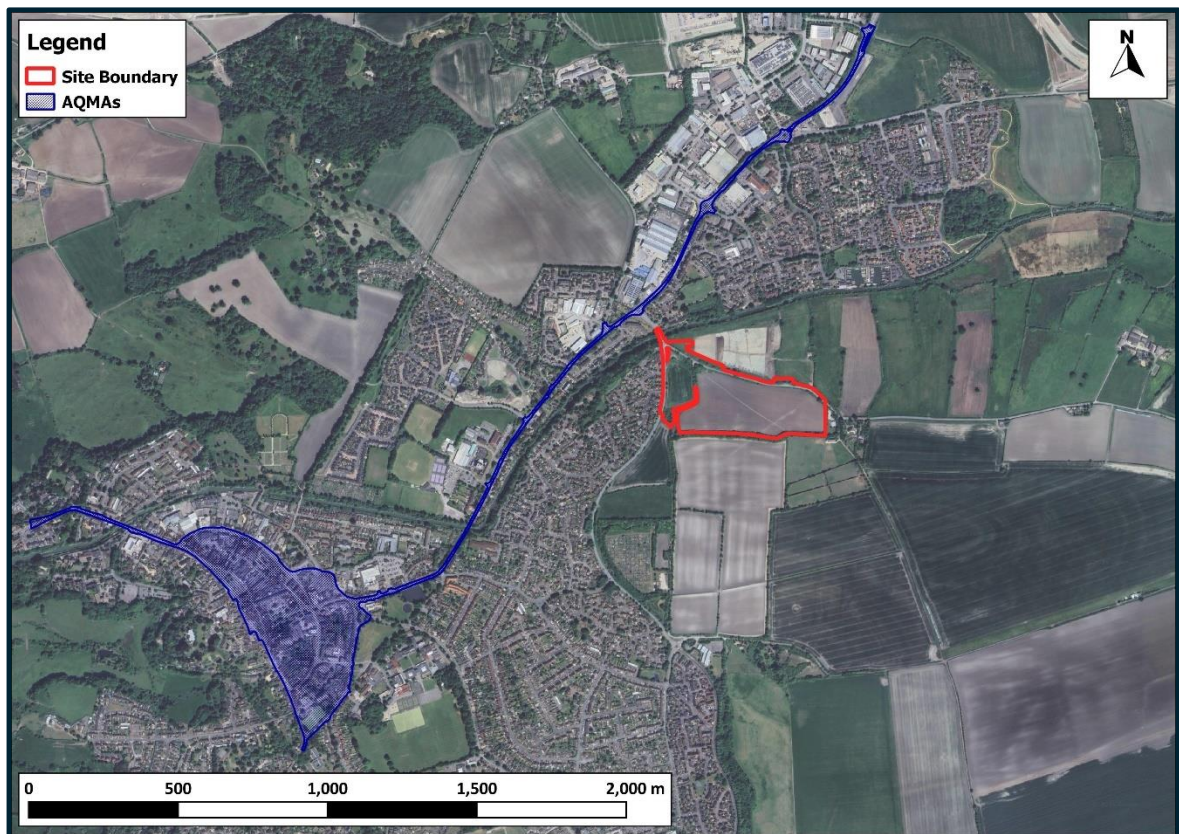


Figure 1-1: Proposed Development Setting in the Context of Air Quality

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- 1.5 The energy strategy for the proposed development will not include any centralised combustion plant and thus there will be no significant point sources of emissions within the proposed development.

- 1.6 The WC Air Quality Supplementary Planning Document (SPD) (Wiltshire Council, 2023a) requires the inclusion of a construction dust risk assessment. The main pollutants of concern related to construction activities are dust and PM₁₀.
- 1.7 This report describes existing local air quality conditions (base year 2023), and those in the earliest possible year of occupation (2028). The assessment of construction dust impacts focuses on the anticipated duration of the works.
- 1.8 This report has been prepared taking into account all relevant local and national guidance and regulations, and follows a methodology agreed with WC.

2 Policy Context

- 2.1 All European legislation referred to in this report is written into UK law and remains in place.

Air Quality Strategy 2007

- 2.2 The Air Quality Strategy (Defra, 2007) published by the Department for Environment, Food, and Rural Affairs (Defra) and Devolved Administrations, provides the policy framework for air quality management and assessment in the UK. It provides air quality standards and objectives for key air pollutants, which are designed to protect human health and the environment. It also sets out how the different sectors: industry, transport and local government, can contribute to achieving the air quality objectives. Local authorities are seen to play a particularly important role. The strategy describes the Local Air Quality Management (LAQM) regime that has been established, whereby every authority has to carry out regular reviews and assessments of air quality in its area to identify whether the objectives have been, or will be, achieved at relevant locations, by the applicable date. If this is not the case, the authority must declare an AQMA and prepare an action plan which identifies appropriate measures that will be introduced in pursuit of the objectives.

Air Quality Strategy 2023

- 2.3 The Air Quality Strategy: Framework for Local Authority Delivery 2023 (Defra, 2023a) sets out the strategic air quality framework for local authorities and other Air Quality Partners in England. It sets out their powers and responsibilities, and actions the government expects them to take. It does not replace other air quality guidance documents relevant to local authorities.

Clean Air Strategy 2019

- 2.4 The Clean Air Strategy (Defra, 2019) sets out a wide range of actions by which the UK Government will seek to reduce pollutant emissions and improve air quality. Actions are targeted at four main sources of emissions: Transport, Domestic, Farming and Industry. At this stage, there is no straightforward way to take account of the expected future benefits to air quality within this assessment.

Reducing Emissions from Road Transport: Road to Zero Strategy

- 2.5 The Office for Low Emission Vehicles (OLEV) and Department for Transport (DfT) published a Policy Paper (DfT, 2018) in July 2018 outlining how the government will support the transition to zero tailpipe emission road transport and reduce tailpipe emissions from conventional vehicles during the transition. This paper affirms the Government's pledge to end the sale of new conventional petrol and diesel cars and vans by 2040, and states that the Government expects the majority of new cars and vans sold to be 100% zero tailpipe emission and all new cars and vans to have significant zero tailpipe emission capability by this year, and that by 2050 almost every car and van should have zero tailpipe emissions. It states that the Government wants to see at least 50%, and as many as 70%, of new car sales, and up to 40% of new van sales, being ultra-low emission by 2030.
- 2.6 The paper sets out a number of measures by which Government will support this transition but is clear that Government expects this transition to be industry and consumer led. The Government's 'Zero Emission Vehicle' (ZEV) mandate requires that 80% of new cars and 70% of new vans sold in Great Britain must be zero exhaust emission by 2030, increasing to 100% by 2035. If these ambitions are realised, then road traffic-related NO_x emissions can be expected to reduce significantly over the

coming decades, likely beyond the scale of reductions forecast in the tools utilised in carrying out this air quality assessment.

Environment Act 2021

- 2.7 The UK's new legal framework for protection of the natural environment, the Environment Act (2021) passed into UK law in November 2021. The Act gives the Government the power to set long-term, legally binding environmental targets. It also establishes an Office for Environmental Protection (OEP), responsible for holding the Government to account and ensuring compliance with these targets.
- 2.8 The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 (SI 2023 No. 96) sets two new targets for future concentrations of PM_{2.5}. These targets are described in Paragraph 3.4.

Environmental Improvement Plan 2023

- 2.9 Defra published its 25 Year Environment Plan in 2018 (Defra, 2018a). The Environment Act (2021) requires Defra to review this Plan at least every five years. The Environmental Improvement Plan 2023 (Defra, 2023b) is the first revision. This outlines the progress made since 2018 and adds detail to the goals defined in the 2018 Plan, including that of achieving clean air.
- 2.10 The Environmental Improvement Plan 2023 sets out the new air quality targets which have been set for concentrations of PM_{2.5}. These targets, which are described in more detail in Paragraph 3.4, include the long-term targets in the Statutory Instrument described in Paragraph 2.8, and interim targets to be achieved by 2028.
- 2.11 The 2023 Plan outlines the role of local authorities in helping it meet both its targets and existing commitments. It also outlines the respective roles of industry, agricultural sectors, and the DfT in providing the coordinated action required to meet both its new, and pre-existing targets and commitments.

Planning Policy

National Policies

- 2.12 The National Planning Policy Framework (NPPF) (2024) sets out planning policy for England. It states that the purpose of the planning system is to contribute to the achievement of sustainable development, and that the planning system has three overarching objectives, one of which (Paragraph 8c) is an environmental objective:

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

- 2.13 To prevent unacceptable risks from air pollution, Paragraph 187 of the NPPF states 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".

- 2.14 Paragraph 198 states:

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

2.15 More specifically on air quality, Paragraph 199 makes clear that:

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

2.16 The NPPF is supported by Planning Practice Guidance (PPG) (Ministry of Housing, Communities & Local Government, 2019), which includes guiding principles on how planning can take account of the impacts of new development on air quality. The PPG states that:

"Defra carries out an annual national assessment of air quality using modelling and monitoring to determine compliance with Limit Values. It is important that the potential impact of new development on air quality is taken into account where the national assessment indicates that relevant limits have been exceeded or are near the limit, or where the need for emissions reductions has been identified".

2.17 Regarding plan-making, the PPG states:

"It is important to take into account air quality management areas, Clean Air Zones and other areas including sensitive habitats or designated sites of importance for biodiversity where there could be specific requirements or limitations on new development because of air quality".

2.18 The role of the local authorities through the LAQM regime is covered, with the PPG stating that a local authority Air Quality Action Plan *"identifies measures that will be introduced in pursuit of the objectives and can have implications for planning"*. In addition, the PPG makes clear that *"Odour and dust can also be a planning concern, for example, because of the effect on local amenity"*.

2.19 Regarding the need for an air quality assessment, the PPG states that:

"Whether air quality is relevant to a planning decision will depend on the proposed development and its location. Concerns could arise if the development is likely to have an adverse effect on air quality in areas where it is already known to be poor, particularly if it could affect the implementation of air quality strategies and action plans and/or breach legal obligations (including those relating to the conservation of habitats and species). Air quality may also be a material consideration if the proposed development would be particularly sensitive to poor air quality in its vicinity".

2.20 The PPG sets out the information that may be required in an air quality assessment, making clear that:

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

2.21 The PPG also provides guidance on options for mitigating air quality impacts, as well as examples of the types of measures to be considered. It makes clear that:

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

Local Transport Plan

- 2.22 The Wiltshire Local Transport Plan 4 (LTP4) was adopted in March 2025 and contains a number of strategic objectives for transport in Wiltshire for the period 2025 to 2038 (Wiltshire Council, 2025). The main policies of benefit to air quality are Policy A1 (*"Reduce the need to travel as often"*), Policy A2 (*"Enabling access to service, jobs and other destinations within closer reach"*), and Policy S5 (*"Encourage and enable shift to more sustainable modes for freight"*).

Local Policies

- 2.23 The Wiltshire Core Strategy (Wiltshire Council, 2015) was adopted in January 2015, and within this there is one main policy which refers to air quality. Core Policy 55 states that:

"Development proposals which [...] are likely to exacerbate existing areas of poor air quality, will need to demonstrate that measures can be taken to effectively mitigate emission levels in order to protect public health, environmental quality and amenity. Mitigation measures should demonstrate how they will make a positive contribution to the aims of the Air Quality Strategy for Wiltshire and where relevant, the Wiltshire Air Quality Action Plan. Mitigation may include:

- i. landscaping, bunding or separation to increase distance from highways and junctions*
- ii. possible traffic management or highway improvements to be agreed with the local authority*
- iii. abatement technology and incorporating site layout/separation and other conditions in site planning*
- iv. traffic routing, site management, site layout and phasing*
- v. where appropriate, contributions will be sought toward the mitigation of the impact a development may have on levels of air pollutants."*

- 2.24 A new Local Plan for Wiltshire is currently under development, and the pre-submission Regulation 19 draft was published in September 2023 (Wiltshire Council, 2023b). The draft includes Policy 101 on Air Quality, which is similar to Core Policy 55 of the Wiltshire Core Strategy, and adds:

"The pollutants of particular concern that developers must have regard to are nitrogen dioxide, fine particulates (PM₁₀) and very fine particulates (PM_{2.5})".

- 2.25 The Council has also consulted on a Supplementary Planning Document (SPD) dealing with Air Quality (Wiltshire Council, 2023a). It outlines the level of assessment required, depending on the type and size of development proposed, along with the standard mitigation requirements.

Building Standards

- 2.26 Part F(1) of Schedule 1 of the Building Regulations 2010 as amended June 2022 (Ministry of Housing, Communities & Local Government, 2022) places a duty on building owners, or those responsible for relevant building work¹, to ensure adequate ventilation is provided to building occupants.
- 2.27 Approved Document F (HM Government, 2021a), which accompanies the Building Regulations, explains that care should be taken to minimise entry of external air pollutants. Specific steps should be taken to manage ventilation intakes where the building is near to a significant source of emissions, or if local ambient concentrations exceed values set in the Air Quality Standards Regulations 2010 (see Paragraph 3.9, later). These steps include maximising the distance between emission source and air intake, considering likely dispersion patterns, and considering the timing of pollution releases when designing the ventilation system.
- 2.28 Part S(1) of Schedule 1, and Regulation 44D, of the Building Regulations 2010 (Ministry of Housing, Communities & Local Government, 2022) define a requirement for the provision of infrastructure for charging electric vehicles. Precise requirements are explained further within Approved Document S (HM Government, 2021b) and depend on the overall number of parking spaces provided and the average financial cost of installation.
- 2.29 Compliance with the Building Regulations is not required for planning approval, but it is assumed that the Regulations will be complied with in the completed development.

Air Quality Action Plans

National Air Quality Plan

- 2.30 Defra has produced an Air Quality Plan to tackle roadside nitrogen dioxide concentrations in the UK (Defra, 2017); a supplement to the 2017 Plan (Defra, 2018b) was published in October 2018 and sets out the steps Government is taking in relation to a further 33 local authorities where shorter-term exceedances of the limit value were identified. Alongside a package of national measures, the 2017 Plan and the 2018 Supplement require those identified English Local Authorities (or the GLA in the case of London Authorities) to produce local action plans and/or feasibility studies. These plans and feasibility studies must have regard to measures to achieve the statutory limit values within the shortest possible time, which may include the implementation of a Clean Air Zone (CAZ). There is currently no straightforward way to take account of the effects of the 2017 Plan or 2018 Supplement in this assessment; however, consideration has been given to whether there is currently, or is likely to be in the future, a limit value exceedance in the vicinity of the proposed development. This assessment has principally been carried out in relation to the air quality objectives, rather than the limit values that are the focus of the Air Quality Plan.

Local Air Quality Action Plan

- 2.31 WC's Air Quality Action Plan for 2024-2029 (Wiltshire Council, 2024a) sets out a series of measures by which they will seek to achieve the air quality objectives in their AQMAs. The following measures specific to Devizes are proposed in order to reduce vehicle emissions and achieve the objective within Devizes:
- A18 unction improvements around Shanes Castle/Wandsworth junction;

¹ Building work is a legal term for work covered by the Building Regulations. With limited exemptions, the Regulations apply to all significant building work, including erecting or extending a building.

- The Devizes Transport Strategy: *"the Council will continue to implement, and possibly refresh, the plan to target pollution hotspots"*; and
- The Devizes Canal Towpath Cycle Route: *"The provision of new cycle way along canal towpath should help to encourage active journeys in the town"*.

2.32 In 2019, WC published an air quality strategy for 2019 – 2024 which sets out objectives to improve air quality to better the environment, health and wellbeing (Wiltshire Council, 2019). These targets include:

- reduced use of private cars;
- better informed strategic planning;
- increased use of public transport;
- more people being active;
- provision of increased infrastructure for cycling and walking;
- increase use of alternatives to fossil fuels;
- increased active travel;
- fewer people dying from respiratory and cardiovascular disease and cancer;
- improve the wellbeing of those who suffer from respiratory and cardiovascular disease;
- contribute to climate change reduction;
- more sustainable development; and
- a reduction in health inequalities.

3 Assessment Criteria

- 3.1 The Government has established a set of air quality standards and objectives to protect human health. The 'standards' are based on assessment of the effects of each pollutant on human health, including the effects on sensitive sub-groups. The 'objectives' set out the extent to which the Government expects the standards to be achieved taking account of practical considerations. The objectives for use by local authorities are prescribed within the Air Quality (England) Regulations (2000) and the Air Quality (England) (Amendment) Regulations (2002).
- 3.2 The UK-wide objectives for nitrogen dioxide and PM₁₀ were to have been achieved by 2005 and 2004 respectively and continue to apply in all future years thereafter. Measurements across the UK have shown that the 1-hour mean nitrogen dioxide objective is unlikely to be exceeded at roadside locations where the annual mean concentration is below 60 µg/m³ (Defra, 2025a). Therefore, 1-hour nitrogen dioxide concentrations will only be considered if the annual mean concentration is above this level. Measurements have also shown that the 24-hour mean PM₁₀ objective could be exceeded at roadside locations where the annual mean concentration is above 32 µg/m³ (Defra, 2025a).
- 3.3 The objectives apply at locations where members of the public are likely to be regularly present and are likely to be exposed over the averaging period of the objective. Defra explains where these objectives will apply in its Local Air Quality Management Technical Guidance (Defra, 2025a). The annual mean objectives for nitrogen dioxide and PM₁₀ are considered to apply at the façades of residential properties, schools, hospitals etc.; they do not apply at hotels. The 24-hour mean objective for PM₁₀ is considered to apply at the same locations as the annual mean objective, as well as in gardens of residential properties and at hotels. The 1-hour mean objective for nitrogen dioxide applies wherever members of the public might regularly spend 1-hour or more, including outdoor eating locations and pavements of busy shopping streets.
- 3.4 For PM_{2.5}, the objective set by Defra for local authorities is to work toward reducing concentrations without setting any specific numerical value. In the absence of a numerical objective, it is convention to assess local air quality impacts against the limit value (see Paragraph 3.9), originally set at 25 µg/m³ and currently set at 20 µg/m³.
- 3.5 Defra has also set two new targets, and two new interim targets, for PM_{2.5} concentrations in England. One set of targets focuses on absolute concentrations. The long-term target is to achieve an annual mean PM_{2.5} concentration of 10 µg/m³ by the end of 2040 (referred to as the annual mean concentration target or AMCT), with the interim target being a value of 12 µg/m³ by the start of 2028². The second set of targets relate to reducing overall population exposure to PM_{2.5}. By the end of 2040, overall population exposure to PM_{2.5} should be reduced by 35% compared with 2018 levels (referred to as the population exposure reduction target or PERT), with the interim target being a reduction of 22% by the start of 2028 (Table 3-1).

Table 3-1: Environment Act PM_{2.5} Targets

Metric	Target	Target year
AMCT	Interim target: 12 µg/m ³	2028
	Legally binding target: 10 µg/m ³	2040

² Meaning that it will be assessed using measurements from 2027. The 2040 target will be assessed using measurements from 2040. National targets are assessed against concentrations expressed to the nearest whole number, for example a concentration of 10.4 µg/m³ would not exceed the 10 µg/m³ target.

Metric	Target	Target year
PERT	Interim target: 22% reduction in exposure compared to 2018	2028
	Legally binding target: 35% reduction in exposure compared to 2018	2040

3.6 In 2024, Defra published Interim Planning Guidance on the PM_{2.5} targets (Defra, 2024). This states that:

"The purpose of the targets is to improve air quality by reducing levels of PM_{2.5} across the country, therefore improving public health. While achievement of the targets will be assessed at relevant monitoring sites, the targets apply to ambient (outdoor) air throughout England. Applicants and Local Planning Authorities should therefore consider the impact of developments on air quality in all ambient air, whether a monitor is present or not."

3.7 In order to address the new targets, it is not sufficient to assess solely whether a scheme is likely to lead to an exceedance of a legal limit. Instead, developments need to implement appropriate mitigation measures from the design stage, ensuring the minimum amount of pollution is emitted and that exposure is minimised.

3.8 Pending publication of the new guidance, Defra advises applicants to provide evidence that they have identified key sources of air pollution within the scheme and taken appropriate action to minimise emissions of PM_{2.5} and its precursors as far as possible. More detailed assessment is expected for development closer to populations and/or having higher emissions. Defra has posed two questions to be used as prompts to support the interim assessment process:

"How has exposure to PM_{2.5} been considered when selecting the development site?; and

What actions and/or mitigations have been considered to reduce PM_{2.5} exposure for development users and nearby receptors (houses, hospitals, schools etc.) and to reduce emissions of PM_{2.5} and its precursors?"

3.9 EU Directive 2008/50/EC (The European Parliament and the Council of the European Union, 2008) sets limit values for nitrogen dioxide, PM₁₀ and PM_{2.5}, and is implemented in UK law through the Air Quality Standards Regulations (2010)³. The limit values for nitrogen dioxide and PM₁₀ are the same numerical concentrations as the UK objectives, but achievement of the limit values is a national obligation rather than a local one and concentrations are reported to the nearest whole number. In the UK, only monitoring and modelling carried out by UK Central Government meets the specification required to assess compliance with the limit values. Central Government does not normally recognise local authority monitoring or local modelling studies when determining the likelihood of the limit values being exceeded, unless such studies have been audited and approved by Defra and DfT's Joint Air Quality Unit (JAQU).

3.10 The relevant air quality criteria for this assessment are provided in Table 3-2.

Table 3-2: Air Quality Criteria for Nitrogen Dioxide, PM₁₀ and PM_{2.5}

Pollutant	Time Period	Value
Nitrogen Dioxide	1-hour Mean	200 µg/m ³ not to be exceeded more than 18 times a year
	Annual Mean	40 µg/m ³

³ As amended through The Air Quality Standards (Amendment) Regulations 2016 and The Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020.

Pollutant	Time Period	Value
PM ₁₀	24-hour Mean	50 µg/m ³ not to be exceeded more than 35 times a year
	Annual Mean	40 µg/m ³
PM _{2.5}	Annual Mean	20 µg/m ³ ^a

^a There is no numerical PM_{2.5} objective for local authorities (see Paragraph 3.4). Convention is to assess against the UK limit value which is currently 20 µg/m³.

Construction Dust Criteria

- 3.11 There are no formal assessment criteria for dust. In the absence of formal criteria, the approach developed by the Institute of Air Quality Management⁴ (IAQM) (2024) has been used. Full details of this approach are provided in Appendix A1.

Road Traffic Screening Criteria

- 3.12 Environmental Protection UK (EPUK) and the IAQM recommend a two-stage screening approach (Moorcroft and Barrowcliffe et al, 2017) to determine whether emissions from road traffic generated by a development have the potential for significant air quality impacts. The approach, as described in Appendix A2, first considers the size and parking provision of a development; if the development is residential and is for fewer than ten homes or covers less than 0.5 ha, or is non-residential and will provide less than 1,000 m² of floor space or cover a site area of less than 1 ha, and will provide ten or fewer parking spaces, then there is no need to progress to a detailed assessment.
- 3.13 The second stage then compares the changes in vehicle flows on local roads that a development will lead to against specified screening criteria. The screening thresholds (described in full in Appendix A2) inside an AQMA are a change in flows of more than 25 Heavy Duty Vehicles (HDVs) or 100 Light Duty Vehicles (LDVs) per day; outside of an AQMA the thresholds are 100 HDVs or 500 LDVs. Where these criteria are exceeded, an assessment is likely to be required (which may be a simple or detailed assessment). However, the guidance advises that *"the criteria provided are precautionary and should be treated as indicative"*, and *"it may be appropriate to amend them on the basis of professional judgement"*.

Wiltshire Council Air Quality SPD Criteria

- 3.14 WC's Air Quality SPD (Wiltshire Council, 2023a) sets out their own criteria for classifying a development and the type of assessment which is therefore required (see Table 3-3). Detailed dispersion modelling (a concentration assessment) is only required if a development meets the Type 3 criteria.

Table 3-3: Site Classification Types

Type	Description	Criteria	Supporting documents required with planning application
Type 1	Any development in Wiltshire	All developments in Wiltshire where Type 2 and Type 3 criteria do not apply	Evidence of good base design including EV charging that meets our minimum EV charging requirements.

⁴ The IAQM is the professional body for air quality practitioners in the UK.

Type	Description	Criteria	Supporting documents required with planning application
			- Construction Environmental Management Plan (CEMP). - Exposure Mitigation (if applicable).
Type 2	Developments likely to increase traffic levels and pollution	Developments that exceed site land use and development size thresholds outlined in Appendix B ^a	- Documents identified in Type 1 and; - Low Emission Travel Plan
Type 3	As Type 2, however where development is likely to exacerbate areas of existing poor air quality	Any Type 2 site that meets the following: - Where any air quality deterioration is observed/ predicted in an AQMA, or in an area where the annual mean NO₂ is already >38 µg/m³; or - If the development reduces average speeds by more than 10 km/h, significantly alters congestion or involves substantial infrastructure changes	- Documents identified in Type 1 and 2 and; - Concentration Assessment and Mitigation Statement

^a Greater than 100 residential dwellings.

4 Assessment Approach

Consultation

- 4.1 The assessment follows a methodology agreed with WC via email correspondence between Peter Nobes (Senior Public Protection Officer of Environmental Health at WC) and Julia Burnell (Air Quality Consultants) in July 2025. Specifically, it was agreed that the proposed development is classified as a 'Type 2' development (Table 3-3) and therefore the following will be included in the air quality assessment:
- definition of baseline conditions, including identifying relevant monitoring data and existing sources of pollutants in the area;
 - qualitative assessment of the impacts of dust and PM₁₀ from construction works, using the risk assessment approach published in guidance by the IAQM;
 - qualitative assessment of the impacts of road traffic emissions associated with the proposed development and suitability of the site for the introduction of new sensitive receptors, based on the existing air quality baseline (to demonstrate there will not be unacceptable local concentration impacts or an unacceptable risk in terms of human exposure); and
 - identification of mitigation measures to be applied during the operation and construction phases of the proposed development, including a summary of measures in the low emission travel plan.

Existing Conditions

- 4.2 Existing sources of emissions and baseline air quality conditions within the study area have been defined using a number of approaches:
- industrial and waste management sources that may affect the area have been identified using Defra's Pollutant Release and Transfer Register (Defra, 2025b);
 - local sources have been identified through examination of the Council's Air Quality Review and Assessment reports;
 - information on existing air quality has been obtained by collating the results of monitoring carried out by the local authority;
 - background concentrations have been defined using Defra's 2021-based background maps (Defra, 2025c). These cover the whole of the UK on a 1x1 km grid. The background annual mean nitrogen dioxide maps have been calibrated against concurrent measurements (AQC, 2025). The calibration factor has also been applied to future year backgrounds. The background concentrations for PM₁₀ and PM_{2.5} have not been adjusted; and
 - whether or not there are any exceedances of the annual mean limit value for nitrogen dioxide, PM₁₀ and PM_{2.5} in the study area has been identified using Defra's Compliance data (2025d).

Construction Impacts

- 4.3 The construction dust assessment considers the potential for impacts within 250 m of the site boundary, or within 50 m of roads used by construction vehicles. The assessment methodology is that provided by IAQM (2024). This follows a sequence of steps. Step 1 is a basic screening stage, to determine whether the more detailed assessment provided in Step 2 is required. Step 2a determines the

potential for dust to be raised from on-site works and by vehicles leaving the site. Step 2b defines the sensitivity of the area to any dust that may be raised. Step 2c combines the information from Steps 2a and 2b to determine the risk of dust impacts without appropriate mitigation. Step 3 uses this information to determine the appropriate level of mitigation required to ensure that there should be no significant impacts. Appendix A1 explains the approach in more detail.

Road Traffic Impacts

- 4.4 The first step in considering the road traffic impacts of the proposed development has been to screen the development and its traffic generation against the criteria set out in the EPUK/IAQM guidance (Moorcroft and Barrowcliffe et al, 2017), as described in Paragraph 3.12 and detailed further in Appendix A2. Where impacts cannot be screened out, further assessment is undertaken.
- 4.5 As the development is classified as Type 2 (in accordance with the WC Air Quality SPD), a simple assessment has been undertaken as only Type 3 development require a detailed assessment.

Impacts of Road Traffic on Future Residents of the Proposed Development

- 4.6 The impacts of NO₂, PM₁₀ and PM_{2.5} concentrations on new residents of the development have been assessed qualitatively, taking account of local air quality monitoring data and proximity to local roads.
- 4.7 The assessment examines air quality conditions in 2023 and assumes these are representative of air quality conditions at the time the development is occupied; this assumption is considered to be worst-case as it is generally expected that NO₂, PM₁₀ and PM_{2.5} concentrations will decline in future years.

Assessment of Significance

Construction Dust Significance

- 4.8 Guidance from IAQM (2024) is that, with appropriate mitigation in place, the effects of construction dust will be 'not significant'. The assessment thus focuses on determining the appropriate level of mitigation so as to ensure that effects will normally be 'not significant'.

Operational Significance

- 4.9 There is no official guidance in the UK in relation to development control on how to assess the significance of air quality impacts. The approach developed jointly by EPUK and the IAQM (Moorcroft and Barrowcliffe et al, 2017) has therefore been used. The overall significance of the air quality impacts is determined using professional judgement; the experience of the consultants preparing the report is set out in Appendix A3. Full details of the EPUK/IAQM approach are provided in Appendix A2.

5 Baseline Conditions

Relevant Features

- 5.1 The proposed development is located approximately 1.3 km to the northeast of Devizes town centre. The proposed development area is bounded by Windsor Drive to the west, agricultural land to the south, Devizes guide hut and residential dwellings to the east, and Coate Lane to the north (beyond which will be the 'Land North of Coate Road' residential development, ref: PL/2024/09259). There are existing residential properties adjacent to Windsor Drive.
- 5.2 The location of the proposed development in relation to the Devizes Shanes Castle AQMA is highlighted in Figure 1-1.

Industrial Sources

- 5.3 No significant industrial or waste management sources have been identified that are likely to affect the proposed development, in terms of air quality.

Local Air Quality Monitoring

- 5.4 WC operates three automatic monitoring stations within its area; the nearest to the proposed development is the AM3 monitoring site located on Sidmouth Street in Devizes, approximately 1.2 km southwest of the proposed development.
- 5.5 The Council also operates a number of nitrogen dioxide monitoring sites using diffusion tubes prepared and analysed by Somerset Scientific Services (using the 20% TEA in water method). These include one on Windsor Drive (location 5) approximately 70 m northwest of the site, and one at St James Place (location 7) in Devizes approximately 1.2 km southwest of the site. Annual mean results for the years 2019 to 2023 are summarised in Table 5-1, while results relating to the 1-hour mean objective are summarised in Table 5-2. The monitoring locations are shown in Figure 5-1. The monitoring data have been taken from WC's 2024 Air Quality Annual Status Report (Wiltshire Council, 2024b).

Table 5-1: Summary of Annual Mean NO₂ Monitoring (2019-2023) (µg/m³)

Site No.	Site Type	Location	2019	2020	2021	2022	2023
Automatic Monitor							
AM3	Roadside	Sidmouth Street, Devizes	37.0	29.0	30.0	30.0	27.0
Diffusion Tubes							
1	Urban Background	West View Crescent, Devizes	8.6	7.1	6.9	7.6	5.5
2	Roadside	5 The Nursery, Devizes	38.2	31.6	30.9	30.6	26.8
3	Kerbside	Shanes Castle, Devizes	38.3	31.6	33.1	30.8	27.3
4	Roadside	Opp. Wadsworth, Northgate St, Devizes	40.3	30.9	33.0	30.8	28.5
5	Roadside	Windsor Drive, Devizes	17.9	16.5	17.8	16.9	14.9

Site No.	Site Type	Location	2019	2020	2021	2022	2023
6	Roadside	12 Southgate, Devizes	35.5	28.2	28.5	26.4	24.7
7	Roadside	105 St James Place, Devizes	34.9	29.8	29.6	28.1	25.3
Objective			40				

Table 5-2: Number of Hours With NO₂ Concentrations Above 200 µg/m³

Site No.	Site Type	Location	2019	2020	2021	2022	2023
AM3	Roadside	Sidmouth Street, Devizes	1	0	0	0	0
Objective			18				

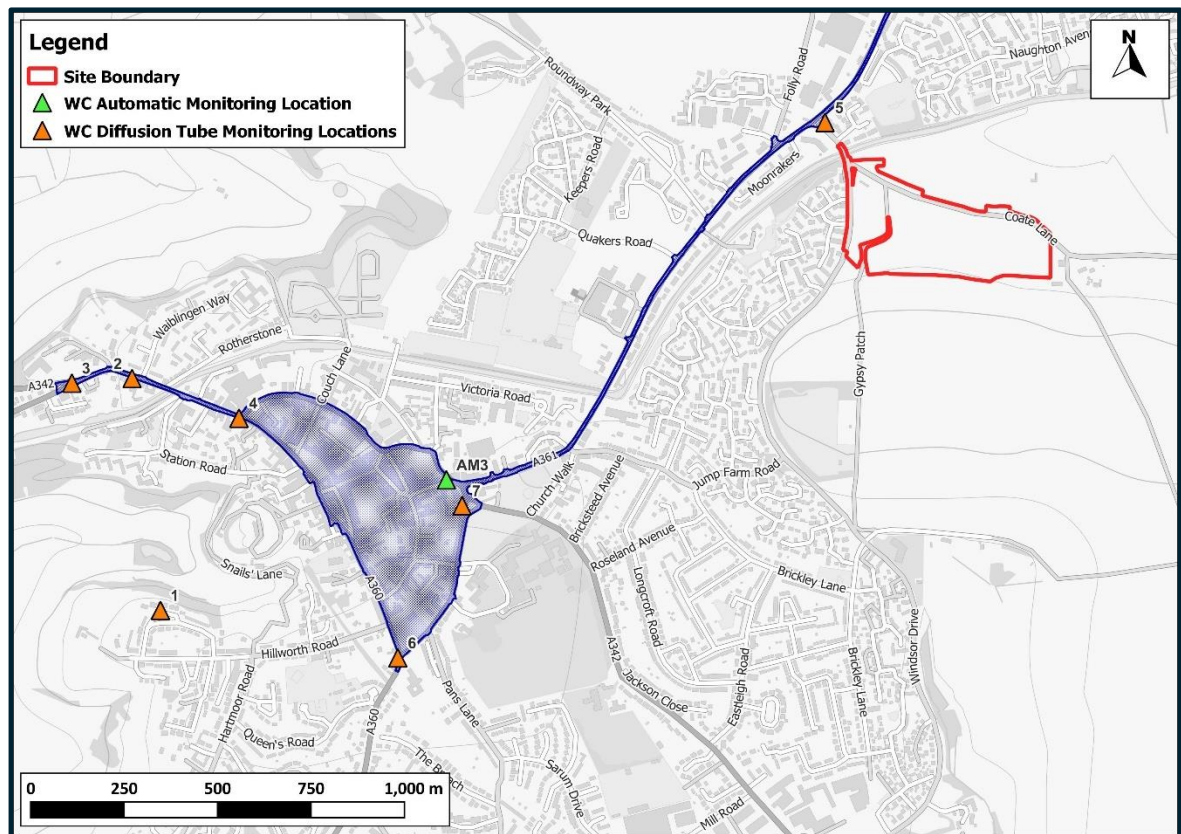


Figure 5-1: Monitoring Locations

Additional data sourced from third parties, including public sector information licensed under the Open Government Licence v3.0.

5.6

The results in Table 5-1 show that the concentrations at all monitoring sites have been below the annual mean nitrogen dioxide objective between 2019 and 2023 (apart from in 2019 at site 4) and concentrations have reduced at all sites during this period. Table 5-2 shows the 1-hour mean nitrogen dioxide concentrations have also not exceeded the objective at the AM3 monitor between 2019 to 2023.

- 5.7 The AM3 automatic monitoring station also measures PM₁₀ concentrations. Annual mean results for the years 2019 to 2023 are summarised in Table 5-3, while results relating to the PM₁₀ 24-hour mean objective are summarised in Table 5-4. Concentrations of PM₁₀ have remained well below the respective objectives between 2019 and 2023. PM_{2.5} concentrations have been estimated by WC from the measured PM₁₀ concentrations; the concentrations are well below the objective, but are slightly above the AMCT which is to be met by 2040.

Table 5-3: Summary of Annual Mean PM₁₀ and PM_{2.5} Monitoring (2019-2023) (µg/m³)

Site No.	Site Type	Location	2019	2020	2021	2022	2023
PM ₁₀							
AM3	Roadside	Sidmouth Street, Devizes	21.0	19.0	18.0	20.0	17.0
Objective			40				
PM _{2.5}							
AM3	Roadside	Sidmouth Street, Devizes	14.7	13.3	12.6	14.3	11.4
Objective/AMCT			20 ^a /10 ^b				

^a The 20 µg/m³ PM_{2.5} objective, which was to be met by 2020, is not in Regulations and there is no requirement for local authorities to meet it.

^b To be met by 2040

Table 5-4: Number of Days With PM₁₀ Concentrations Above 50 µg/m³

Site No.	Site Type	Location	2019	2020	2021	2022	2023
AM3	Roadside	Sidmouth Street, Devizes	8	3	1	6	0
Objective			35				

Exceedances of Limit Value

- 5.8 Defra has not identified any exceedances of the annual mean or 1-hour mean limit values in 2023 in Wiltshire's area (Defra, 2025d). As such, there is not considered to be a risk of a limit value exceedance in the vicinity of the proposed development by 2028 (anticipated year of first occupation).

Background Concentrations

- 5.9 The maximum estimated background concentrations at the proposed development are set out in Table 5-5 and are all well below the objectives. PM_{2.5} concentrations are also well below the AMCT.

Table 5-5: Estimated Annual Mean Background Pollutant Concentrations in 2023 and 2028 (µg/m³)

Year	NO ₂	PM ₁₀	PM _{2.5}
2023	7.9	11.5	6.7
2028	6.4	11.1	6.3

Year	NO ₂	PM ₁₀	PM _{2.5}
Objective / AMCT	40	40	20 ^a /10 ^b

^a The 20 µg/m³ PM_{2.5} objective, which was to be met by 2020, is not in Regulations and there is no requirement for local authorities to meet it.

^b To be met by 2040

6 Construction Phase Impact Assessment

Construction Traffic

- 6.1 The transport consultants for the proposed development (PFA Consulting) have advised that the construction of the proposed development will generate an average of three Heavy Goods Vehicles (HGV) trips per day. This is well below the most stringent screening criterion recommended by EPUK/IAQM guidance of 25 Annual Average Daily Traffic (AADT) for HDVs. LDV trips associated with the construction phase are also expected to be well below the most stringent EPUK/IAQM criterion of 100 AADT (Moorcroft and Barrowcliffe et al, 2017).
- 6.2 It is, therefore, not considered necessary to assess the impacts of traffic emissions during the construction phase further and it can be concluded that the proposed development will not have a significant impact on local roadside air quality as a result of construction traffic emissions.

On-Site Exhaust Emissions

- 6.3 The IAQM guidance (IAQM, 2024) states:
- "Experience of assessing the exhaust emissions from on-site plant (also known as non-road mobile machinery or NRMM) and site traffic suggests that they are unlikely to make a significant impact on local air quality, and in the vast majority of cases they will not need to be quantitatively assessed. For site plant and on-site traffic, consideration should be given to the number of plant/vehicles and their operating hours and locations to assess whether a significant effect is likely to occur".*
- 6.4 The site is relatively large and the majority of the site area is more than 50 m from any sensitive receptors. NRMM emissions will, thus, mostly occur away from sensitive properties. The site layout will take account of the location of sensitive receptors, and the distance between NRMM and sensitive properties will be maximised, as far as possible; additionally, all vehicles and plant will be switched off when not in use. It is judged that there no risk of significant effects at existing receptors as a result of on-site machinery emissions.

Construction Dust and Particulate Matter Emissions

- 6.5 The construction works will give rise to a risk of dust impacts during demolition, earthworks and construction, as well as from trackout of dust and dirt by vehicles onto the public highway. Step 1 of the assessment procedure is to screen the need for a risk assessment. There are receptors within the distances set out in the guidance (see Appendix A1), thus a detailed assessment is required. The following section sets out Step 2 of the assessment procedure.

Potential Dust Emission Magnitude

Demolition

- 6.6 There will be a requirement to demolish a brick barn and outhouse in the northwest corner of the site with a total volume of less than 12,000 m³. Based on the example definitions set out in Table A1-1 in Appendix A1, the dust emission class for demolition is considered to be **small**.

Earthworks

- 6.7 The characteristics of the soil at the site have been defined using the British Geological Survey's UK Soil Observatory website (British Geological Survey, 2025), as set out in Table 6-1. Overall, it is considered that, when dry, this soil has the potential to be moderately dusty.

Table 6-1: Summary of Soil Characteristics

Category	Record
Soil Layer Thickness	Mixed (Deep to Intermediate)
Soil Parent Material Grain Size	Mixed (Argillaceous ^a to Arenaceous ^b)
European Soil Bureau Description	Mixed (Sandstone, Mudstone and Chalk)
Soil Group	Light (Silty and Sandy) to Medium (Sandy) to Heavy
Soil Texture	Sand to Sandy Loam ^c to Loam /Chalky Loam to Chalky Clay

^a grain size < 0.06 mm.

^b grain size 0.06 – 2.0 mm.

^c a loam is composed mostly of sand and silt.

- 6.8 The site covers approximately 115,000 m² and most of this will be subject to earthworks. Based on the example definitions set out in Appendix A1, the dust emission class for earthworks is considered to be **large**.

Construction

- 6.9 The proposed development involves the construction of up to 175 brick-built residential properties, with a total building volume estimated to be between 12,000 and 75,000 m³. Based on the example definitions set out in Appendix A1, the dust emission class for construction is considered to be **medium**.

Trackout

- 6.10 The transport consultants, PFA Consulting, has advised that there will be an average of three heavy vehicle trips per day during the construction of the proposed development. It is therefore considered very unlikely that there will be more than 20 outward heavy vehicle movements on any given day. Based on the example definitions set out in Table A2-1 in Appendix A1, the dust emission class for trackout is considered to be **small**.
- 6.11 Table 6-2 summarises the dust emission magnitude for the proposed development.

Table 6-2: Summary of Dust Emission Magnitude

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

Sensitivity of the Area

- 6.12 This assessment step combines the sensitivity of individual receptors to dust effects with the number of receptors in the area and their proximity to the site. It also considers additional site-specific factors such as topography and screening, and in the case of sensitivity to human health effects, and baseline PM₁₀ concentrations.

- 6.13 The IAQM guidance explains that residential properties are 'high' sensitivity receptors to dust soiling and human health effects (Table A2-2 in Appendix A1). There are between 10–100 residential properties within 20 m of the proposed development, including properties located to the west of Windsor Drive and approximately 20 properties located within the approved scheme on 'Land north of Coate Road' (REF: PL/2024/09259) (see Figure 6-1).

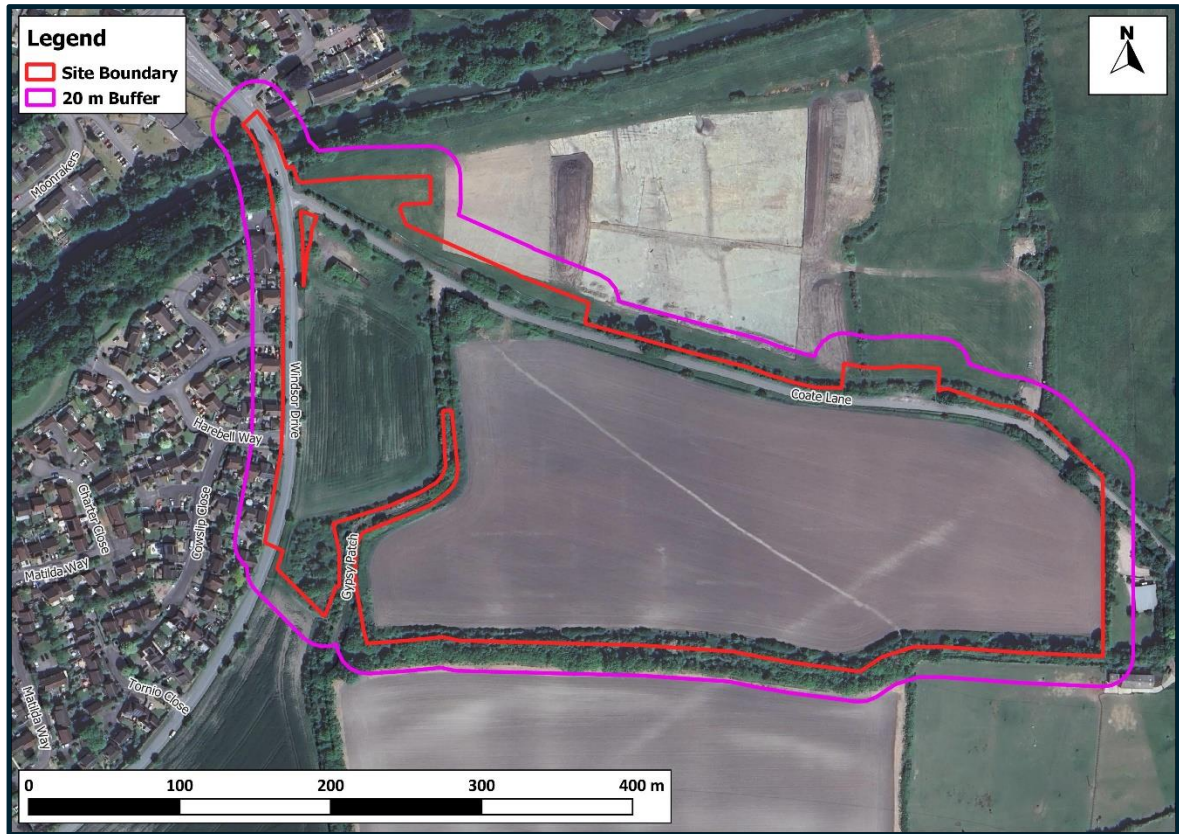


Figure 6-1: 20 m Distance Band around Site Boundary

Imagery ©2025 Airbus, Maxar Technologies, Map data ©2025.

- 6.14 The IAQM guidance (IAQM, 2024) explains that there is a risk of material being tracked 250 m from the proposed development exit. It is anticipated that the majority of construction traffic will exit the site on Coate Lane and travel north on Windsor Drive, however some vehicles may travel south. There will also be a site exit directly on to Windsor Drive. There are between 10 and 100 residential properties within 20 m of the roads along which material could be tracked, one of which is the façade of a property located at the approved scheme on 'Land north of Coate Road' (REF: PL/2024/09259) (see Figure 6-2).

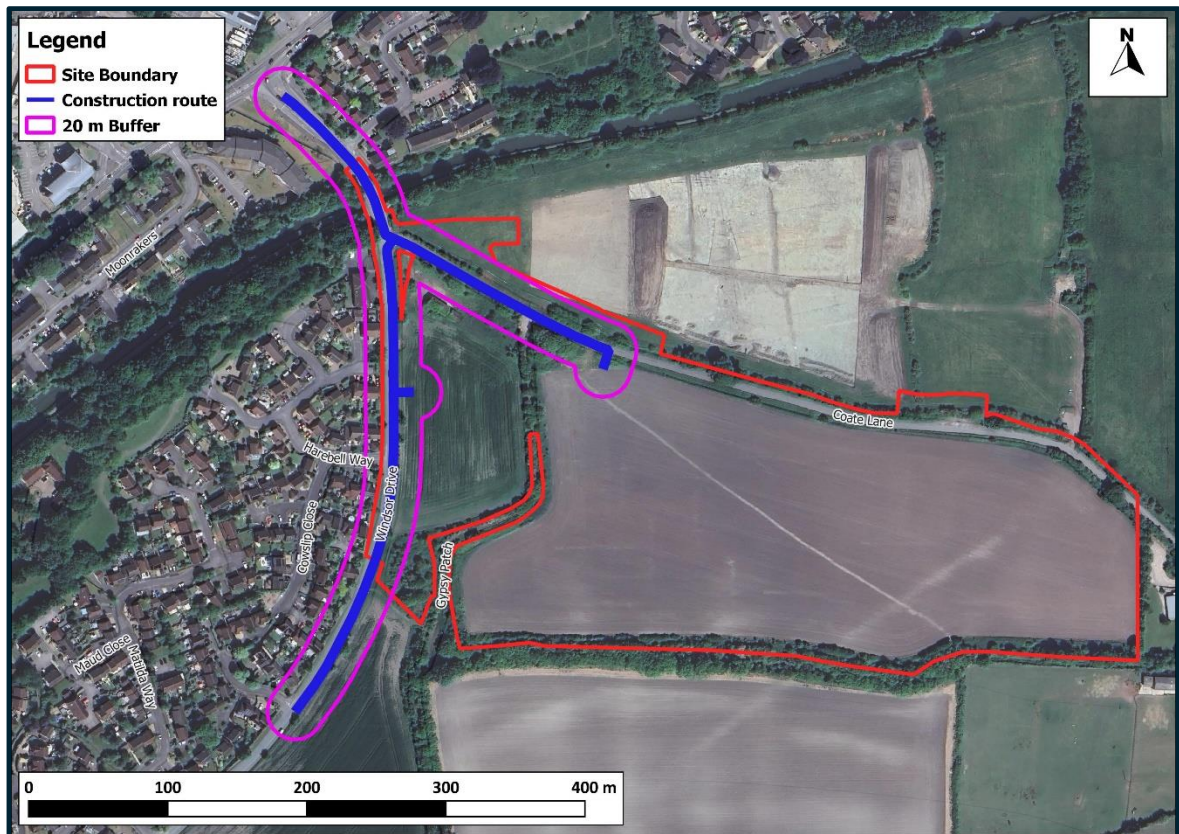


Figure 6-2: 20 m Distance Band around Road Used by Construction Traffic Within 250 m of the Site

Imagery ©2025 Maxar Technologies, Map data ©2025.

Sensitivity of the Area to Effects from Dust Soiling

- 6.15 Using the information set out in Paragraph 6.13 and Figure 6-1 alongside the matrix set out in Table A1-3 in Appendix A1, the area surrounding the onsite works is of 'high' sensitivity to dust soiling. Using the information set out in Paragraph 6.14 and Figure 6-2 alongside the same matrix, the area is of 'high' sensitivity to dust soiling due to trackout.

Sensitivity of the Area to any Human Health Effects

- 6.16 The matrix in Table A1-4 in Appendix A1 requires information on the baseline annual mean PM₁₀ concentration in the area. The 2023 annual mean PM₁₀ concentration measured at monitoring site AM3 in Devizes town centre (presented in Table 5-3) is considered to best represent conditions near the site, this being 17.0 µg/m³. Using the information set out in Paragraphs 6.13 and Figure 6-1 alongside the matrix in Table A1-4 in Appendix A1, the area surrounding the onsite works is of 'low' sensitivity to human health effects. Using the information set out in Paragraph 6.14 and Figure 6-2 alongside the same matrix, the area surrounding roads along which material may be tracked from the site is also of 'low' sensitivity.

Sensitivity of the Area to any Ecological Effects

- 6.17 The guidance only considers designated ecological sites within 50 m to have the potential to be impacted by the construction works. There are no designated ecological sites within 50 m of the site boundary or those roads along which material may be tracked, thus ecological impacts will not be considered further.

Summary of the Area Sensitivity

6.18 Table 6-3 summarises the sensitivity of the area around the proposed construction works.

Table 6-3: Summary of the Area Sensitivity

Effects Associated With:	Sensitivity of the Surrounding Area	
	On-site Works	Trackout
Dust Soiling	High Sensitivity	High Sensitivity
Human Health	Low Sensitivity	Low Sensitivity

Risk and Significance

6.19 The dust emission magnitudes in Table 6-2 have been combined with the sensitivities of the area in Table 6-3 using the matrix in Table A1-6 in Appendix A1, in order to assign a risk category to each activity. The resulting risk categories for the four construction activities, without mitigation, are set out in Table 6-4. These risk categories have been used to determine the appropriate level of mitigation as set out in Section 8 (Step 3 of the assessment procedure).

Table 6-4: Summary of Risk of Impacts Without Mitigation

Source	Dust Soiling	Human Health
Demolition	Medium Risk	Negligible
Earthworks	High Risk	Low Risk
Construction	Medium Risk	Low Risk
Trackout	Low Risk	Negligible

6.20 The IAQM guidance does not provide a method for assessing the significance of effects before mitigation and advises that pre-mitigation significance should not be determined. With appropriate mitigation in place, the IAQM guidance is clear that the residual effect will normally be 'not significant' (IAQM, 2024).

7 Operational Phase Impact Assessment

- 7.1 In accordance with the WC Air Quality SPD (Wiltshire Council, 2023a), the proposed development is classified as a Type 2 site. This is because the proposed development will provide more than 100 dwellings however it is not in proximity of an area of poor air quality where the annual mean NO₂ is greater than 38 µg/m³ (as demonstrated in Table 5-1, the maximum measured 2023 annual mean NO₂ concentrations in the nearby Devizes Shanes Castle AQMA was 28.5 µg/m³) and the proposed development will not reduce average speeds by more than 10 kph, significantly alter congestion or involve substantial infrastructure changes, and thus does not meet the criteria for a Type 3 site.
- 7.2 Consequently, a concentration assessment (with detailed dispersion modelling) is not required.

Impacts at Existing Receptors

- 7.3 PFA Consulting have predicted that the maximum increase in traffic flows as a result of the proposed development will occur on Coate Lane, where there will be an increase in traffic of 834 AADT, which then distributes onto Windsor Drive. On Windsor Drive, north of Coate Lane, the proposed development generates 717 trips; beyond this point, the proposed development generates a maximum increase of 439 trips, within the AQMA. These annual average daily trip rates are above the screening threshold of 500 AADT for LDVs for outside an AQMA and 100 LDVs for inside an AQMA (Moorcroft and Barrowcliffe et al, 2017) (see Appendix A2).
- 7.4 While there is an increase in vehicle traffic as a result of the proposed development above the EPUK/IAQM screening criteria, the criteria is indicative and *"should not be applied rigidly; in some instances, it may be appropriate to amend them on the basis of professional judgement, bearing in mind that the objective is to identify situations where there is a possibility of a significant effect on local air quality"*.
- 7.5 As discussed above and presented in Section 5, existing concentrations of NO₂, PM₁₀ and PM_{2.5} in the vicinity of the proposed development are all well below the respective objective, including in the nearby Devizes Shanes Castle AQMA. Therefore, in line with the EPUK/IAQM guidance (and as agreed with the WC Environmental Health officer), a simple air quality assessment has been undertaken.
- 7.6 Based on the significance criteria in the EPUK/IAQM guidance, in order for the proposed development to result in significant air quality effects, there would need to be an increase in annual mean nitrogen dioxide concentrations of more than 4 µg/m³. Based on professional experience, this would not be possible with an increase in LDVs of less than 1000 AADT. Diffusion tube 5 is located close to the junction of Windsor Drive and the A361. This measured a concentration of 14.9 µg/m³ in 2023 (Table 5-1). Background concentrations in the vicinity of the proposed development were 7.9 µg/m³ in 2023 (Table 5-5). Therefore, around 7.0 µg/m³ were generated by road traffic emissions in 2023. Traffic flows on the A361 in 2023 were around 22,000 vehicles per day based on data provided by PFA Consulting. On this basis, 717 additional vehicles would be expected to generate around 0.2 µg/m³ in 2023. This is significantly less than 4 µg/m³.
- 7.7 As such, it can be concluded that the proposed development will not have a significant impact on local roadside air quality. It will also not result in *"unacceptable local concentration impact"*⁵, nor will there be an air quality deterioration in an area where the annual mean NO₂ is already greater than 38 µg/m³.

⁵ which is defined in the WC Air Quality SPD as a "development which increases pollutant concentrations by 5% or more of the corresponding air quality objective value."

Impacts of Existing Sources on Future Residents of the Development

- 7.8 Table 5-1 shows that measured annual mean NO₂ concentrations within the vicinity of the proposed development, including at roadside locations within Devizes town centre, were well below the objective in 2023; the measured concentration on Windsor Drive, which is judged to be most representative of roadside concentrations within the proposed development, was 14.9 µg/m³. Furthermore, the majority of the residential properties at the proposed development site will be set back from roads, where pollutant concentrations would be expected to be closer to background levels. Background concentrations at the site are also well below the objectives (see Table 5-5); thus, it can be concluded that there is no risk of an exceedance of the NO₂ objective at the proposed development and that there will not be an “unacceptable risk in terms of human exposure”⁶.
- 7.9 There is no local authority monitoring of PM₁₀ and PM_{2.5} which is considered to be representative of the proposed development (AM3 is located within the centre of Devizes, where concentrations would be expected to be higher than on Windsor Drive/Coate Lane due to the higher traffic flows in Devizes). Therefore, background concentrations of PM₁₀ and PM_{2.5} are judged to be most representative, which are well below the respective objectives.
- 7.10 It can be therefore considered that future users of the proposed development will experience acceptable air quality, and that the proposed development will not introduce additional exposure into an area of poor air quality.

Significance of Operational Air Quality Effects

- 7.11 The operational air quality effects without mitigation are judged to be ‘not significant’. This professional judgement is made in accordance with the methodology set out in Appendix A2 and the WC Air Quality SPD (Wiltshire Council, 2023a).

⁶ which is defined in the WC Air Quality SPD as a development which “creates or increases human exposure to poor air quality (annual mean NO₂ >38 µg/m³) and suitable exposure reduction measures have not been identified as part of the development.”

8 Mitigation

Good Design and Best Practice

8.1 The EPUK/IAQM guidance advises that good design and best practice measures should be considered whether or not more specific mitigation is required. The proposed development incorporates the following good design and best practice measures which are in line with WC's Air Quality SPD (Wiltshire Council, 2023a) requirements for Type 2 developments:

- provision of EV infrastructure in line with the Building Regulations (Approved Document S) and WC's requirements, as a minimum;
- Residential, Low Emission Travel Plan measures, in line with WC's requirements:
 - the appointment and funding of a Travel Plan Coordinator to be responsible for the management and maintenance of the travel plan;
 - support local travel to school and school travel plan measures;
 - green travel vouchers;
 - Smarter Travel Information Pack for residents;
 - establishment of a Green Travel Group;
 - promotion of walking, cycling, public transport and car clubs;
 - consideration of pedestrian links to public transport stops, and provision of new bus stop infrastructure where necessary;
 - covered, secure cycle parking for residents;
 - engage with WC to ensure active travel infrastructure is delivered to connect to the local network as set out in the relevant Local Cycling and Walking Infrastructure Plans (LCWIP) and in accordance with WC's Active Travel Infrastructure Design Standards;
 - information about electric vehicles and charging infrastructure provided in householder 'welcome pack'; and
 - mechanisms for encouraging the uptake of low emission fuels and technologies;
- adoption of a Dust Management Plan (DMP) or Construction Environmental Management Plan (CEMP) to minimise the environmental impacts of the construction works;
- setting back of the development buildings from Coate Lane and Windsor Drive by at least 10 m; and
- use of an energy strategy that does not include a centralised heating plant (CHP) to avoid the need for on-site combustion.

Recommended Mitigation

Construction Impacts

- 8.2 Measures to mitigate dust emissions will be required during the construction phase of the development in order to minimise effects upon nearby sensitive receptors.
- 8.3 The proposed development has been identified as a **High Risk** site during earthworks, **Medium Risk** during demolition and construction, and **Low Risk** during trackout, as set out in Table 6-4. Comprehensive guidance has been published by the IAQM (2024) that describes measures that should be employed, as appropriate, to reduce the impacts, along with guidance on monitoring during demolition and construction (IAQM, 2018). This reflects best practice experience and has been used, together with the professional experience of the consultant who has undertaken the dust impact assessment and the findings of the assessment, to draw up a set of measures that should be incorporated into the specification for the works. These measures are described in Appendix A4.
- 8.4 The mitigation measures should be written into a dust management plan (DMP). The DMP may be integrated into a Code of Construction Practice or the Construction Environmental Management Plan and may require monitoring.
- 8.5 Where mitigation measures rely on water, it is expected that only sufficient water will be applied to damp down the material. There should not be any excess to potentially contaminate local watercourses.

Road Traffic Impacts

- 8.6 The assessment has demonstrated that the overall air quality effect of the proposed development will be 'not significant'; it will not introduce any new exposure into areas of unacceptable air quality, nor will the development-generated traffic emissions have a significant impact on local air quality. It is, therefore, not considered appropriate to propose further mitigation measures for this development.

9 Achieving Compliance with the PM_{2.5} Targets

- 9.1 Defra have set out in their Interim Planning Guidance (Defra, 2024) two questions designed to consider whether a development supports the AMCT and PERT PM_{2.5} targets.
- 9.2 The first question is *"How has exposure to PM_{2.5} been considered when selecting the development site?"*, whilst the second question is *"What actions and/or mitigations have been considered to reduce PM_{2.5} exposure for development users and nearby receptors (houses, hospitals, schools etc.) and to reduce emissions of PM_{2.5} and its precursors?"*.
- 9.3 The proposed development is located in an area where concentrations of PM_{2.5} are anticipated to be well below the AMCT 2040 target of 10 µg/m³ by the time that it is occupied (2028) (see Table 5-5).
- 9.4 The proposed development will not generate any significant emissions; there are no significant point sources of emissions within the proposed development, and operational traffic is very unlikely to result in an unacceptable deterioration in air quality (5% or more of the air quality objective), as explained in Section 7. The assessment has therefore concluded that additional mitigation measures (beyond those required by the WC Air Quality SPD for Type 2 developments) are not required.
- 9.5 It is considered that the development complies with the requirements to deliver achievement of the AMCT and PERT by 2040 as appropriate action has been taken to minimise emissions of PM_{2.5} and its precursors as far as is reasonably practicable.

10 Conclusions

- 10.1 The assessment has considered the impacts of the proposed development on local air quality in terms of dust and particulate matter emissions during construction, and from operational emissions from road traffic generated by the completed and occupied development. It has also identified the air quality conditions that future residents will experience.
- 10.2 The construction works have the potential to create dust. During construction it will therefore be necessary to apply a package of mitigation measures to minimise dust emissions. Appropriate measures have been recommended and, with these measures in place, it is expected that any residual effects will be 'not significant'.
- 10.3 Air quality conditions for future residents of the proposed development have been shown to be acceptable, with concentrations well below the air quality objectives throughout the site.
- 10.4 The assessment has demonstrated that pollutant concentrations will be well below the objectives at all existing receptors, with or without the proposed development, and that the emissions from the additional traffic generated by the proposed development will not have a significant impact on local roadside air quality. It will also not result in unacceptable local concentration impacts.
- 10.5 Taking into account these conclusions, it is judged that the proposed development is consistent with Paragraph 198 of the NPPF, being appropriate for its location both in terms of its effects on the local air quality environment and the air quality conditions for future residents. It is also consistent with Paragraph 199, as it will not affect compliance with relevant limit values or national objectives.
- 10.6 The proposed development is also consistent with Core Policy 55 in WC's Core Strategy and Policy 101 of the draft Local Plan as it will not exacerbate conditions in areas of poor air quality.
- 10.7 It is considered that the development complies with the requirements to deliver achievement of the AMCT and PERT by 2040 as appropriate action has been taken to minimise emissions of PM_{2.5} and its precursors as far as is reasonably practicable.

11 References

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12 Glossary

AADT	Annual Average Daily Traffic
AMCT	Annual Mean Concentration Target (for PM _{2.5})
AQC	Air Quality Consultants
AQMA	Air Quality Management Area
CAZ	Clean Air Zone
CEMP	Construction Environmental Management Plan
Defra	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
DMP	Dust Management Plan
EPUK	Environmental Protection UK
EU	European Union
EV	Electric Vehicle
Exceedance	A period of time when the concentration of a pollutant is greater than the appropriate air quality objective. This applies to specified locations with relevant exposure
HDV	Heavy Duty Vehicles (> 3.5 tonnes)
HMSO	Her Majesty's Stationery Office
IAQM	Institute of Air Quality Management
JAQU	Joint Air Quality Unit
LAQM	Local Air Quality Management
LCWIP	Local Cycling and Walking Infrastructure Plans
LDV	Light Duty Vehicles (<3.5 tonnes)
µg/m ³	Microgrammes per cubic metre
NO ₂	Nitrogen dioxide
NPPF	National Planning Policy Framework
NRMM	Non-road Mobile Machinery
OEP	Office for Environmental Protection
Objectives	A nationally defined set of health-based concentrations for nine pollutants, seven of which are incorporated in Regulations, setting out the extent to which the standards

	should be achieved by a defined date. There are also vegetation-based objectives for sulphur dioxide and nitrogen oxides
OLEV	Office for Low Emission Vehicles
PERT	Population Exposure Reduction Target (for PM _{2.5})
PM ₁₀	Small airborne particles, more specifically particulate matter less than 10 micrometres in aerodynamic diameter
PM _{2.5}	Small airborne particles less than 2.5 micrometres in aerodynamic diameter
PPG	Planning Practice Guidance
SPD	Supplementary Planning Document
Standards	A nationally defined set of concentrations for nine pollutants based on assessment of the effects of each pollutant on human health, including the effects on sensitive sub-groups
TEA	Triethanolamine – used to absorb nitrogen dioxide

13 Appendices

A1 Construction Dust Assessment Procedure

A1.1 The criteria developed by IAQM (2024) divide the activities on construction sites into four types to reflect their different potential impacts. These are:

- demolition;
- earthworks;
- construction; and
- trackout.

A1.2 The assessment procedure includes the four steps summarised below:

STEP 1: Screen the Need for a Detailed Assessment

A1.3 An assessment is required where there is a human receptor within 250 m of the boundary of the site and/or within 50 m of the route(s) used by construction vehicles on the public highway, up to 250 m from the site entrance(s), or where there is an ecological receptor within 50 m of the boundary of the site and/or within 50 m of the route(s) used by construction vehicles on the public highway, up to 250 m from the site entrance(s).

A1.4 Where the need for a more detailed assessment is screened out, it can be concluded that the level of risk is negligible and that any effects will be 'not significant'. No mitigation measures beyond those required by legislation will be required.

STEP 2: Assess the Risk of Dust Impacts

A1.5 A site is allocated to a risk category based on two factors:

- the scale and nature of the works, which determines the potential dust emission magnitude (Step 2A); and
- the sensitivity of the area to dust effects (Step 2B).

A1.6 These two factors are combined in Step 2C, which is to determine the risk of dust impacts with no mitigation applied. The risk categories assigned to the site may be different for each of the four potential sources of dust (demolition, earthworks, construction and trackout).

Step 2A – Define the Potential Dust Emission Magnitude

A1.7 Dust emission magnitude is defined as either 'Small', 'Medium', or 'Large'. The IAQM guidance explains that this classification should be based on professional judgement but provides the examples in Table A1-1.

Table A1-1: Examples of How the Dust Emission Magnitude Class May be Defined

Class	Examples
Demolition	
Large	Total building volume >75,000 m ³ , potentially dusty construction material (e.g. concrete), on site crushing and screening, demolition activities >12 m above ground level

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

^a These numbers are for vehicles that leave the site after moving over unpaved ground.

Step 2B – Define the Sensitivity of the Area

A1.8 The sensitivity of the area is defined taking account of a number of factors:

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

A1.9 The first requirement is to determine the specific sensitivities of local receptors. The IAQM guidance recommends that this should be based on professional judgment, taking account of the principles in Table A1-2. These receptor sensitivities are then used in the matrices set out in Table A1-3, Table A1-4

and Table A1-5 to determine the sensitivity of the area. Finally, the sensitivity of the area is considered in relation to any other site-specific factors, such as the presence of natural shelters etc., and any required adjustments to the defined sensitivities are made.

Step 2C – Define the Risk of Impacts

- A1.10 The dust emission magnitude determined at Step 2A is combined with the sensitivity of the area determined at Step 2B to determine the risk of impacts with no mitigation applied. The IAQM guidance provides the matrix in Table A1-6 as a method of assigning the level of risk for each activity.

STEP 3: Determine Site-specific Mitigation Requirements

- A1.11 The IAQM guidance provides a suite of recommended and desirable mitigation measures which are organised according to whether the outcome of Step 2 indicates a low, medium, or high risk. The list provided in the IAQM guidance has been used as the basis for the requirements set out in Appendix A4.

STEP 4: Determine Significant Effects

- A1.12 The IAQM guidance does not provide a method for assessing the significance of effects before mitigation and advises that pre-mitigation significance should not be determined. With appropriate mitigation in place, the IAQM guidance is clear that the residual effect will normally be 'not significant'.
- A1.13 The IAQM guidance recognises that, even with a rigorous dust management plan in place, it is not possible to guarantee that the dust mitigation measures will be effective all of the time, for instance under adverse weather conditions. The local community may therefore experience occasional, short-term dust annoyance. The scale of this would not normally be considered sufficient to change the conclusion that the effects will be 'not significant'.

Table A1-2: Principles to be Used When Defining Receptor Sensitivities

Class	Principles	Examples
Sensitivities of People to Dust Soiling Effects		
High	users can reasonably expect enjoyment of a high level of amenity; or the appearance, aesthetics or value of their property would be diminished by soiling; and the people or property would reasonably be expected to be present continuously, or at least regularly for extended periods, as part of the normal pattern of use of the land	dwellings, museum and other culturally important collections, medium- and long-term car parks and car showrooms
Medium	users would expect to enjoy a reasonable level of amenity, but would not reasonably expect to enjoy the same level of amenity as in their home; or the appearance, aesthetics or value of their property could be diminished by soiling; or the people or property wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land	parks and places of work
Low	the enjoyment of amenity would not reasonably be expected; or there is property that would not reasonably be expected to be diminished in appearance, aesthetics or value by soiling; or there is transient exposure, where the people or property would reasonably be expected to be present only for limited periods of time as part of the normal pattern of use of the land	playing fields, farmland (unless commercially sensitive horticulture), footpaths, short term car parks and roads
Sensitivities of People to the Health Effects of PM ₁₀		
High	locations where members of the public may be exposed for eight hours or more in a day	residential properties, hospitals, schools and residential care homes
Medium	locations where the people exposed are workers, and where individuals may be exposed for eight hours or more in a day.	may include office and shop workers, but will generally not include workers occupationally exposed to PM ₁₀
Low	locations where human exposure is transient	public footpaths, playing fields, parks and shopping streets
Sensitivities of Receptors to Ecological Effects		
High	locations with an international or national designation and the designated features may be affected by dust soiling; or locations where there is a community of a particularly dust sensitive species	Special Areas of Conservation with dust sensitive features
Medium	locations where there is a particularly important plant species, where its dust sensitivity is uncertain or unknown; or	Sites of Special Scientific Interest with dust sensitive features

Class	Principles	Examples
	locations with a national designation where the features may be affected by dust deposition	
Low	locations with a local designation where the features may be affected by dust deposition	Local Nature Reserves with dust sensitive features

Table A1-3: Sensitivity of the Area to Dust Soiling Effects on People and Property ⁷

Receptor Sensitivity	Number of Receptors	Distance from the Source (m)			
		<20	<50	<100	<250
High	>100	High	High	Medium	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

Table A1-4: Sensitivity of the Area to Human Health Effects ⁷

Receptor Sensitivity	Annual Mean PM ₁₀	Number of Receptors	Distance from the Source (m)			
			<20	<50	<100	<250
High	>32 µg/m ³	>100	High	High	High	Medium
		10-100	High	High	Medium	Low
		1-10	High	Medium	Low	Low
	28-32 µg/m ³	>100	High	High	Medium	Low
		10-100	High	Medium	Low	Low
		1-10	High	Medium	Low	Low
	24-28 µg/m ³	>100	High	Medium	Low	Low
		10-100	High	Medium	Low	Low
		1-10	Medium	Low	Low	Low
	<24 µg/m ³	>100	Medium	Low	Low	Low
		10-100	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Medium	>32 µg/m ³	>10	High	Medium	Low	Low

⁷ For demolition, earthworks and construction, distances are taken either from the dust source or from the boundary of the site. For trackout, distances are measured from the sides of roads used by construction traffic. Without mitigation, trackout may occur from roads up to 250 m, as measured from the site exit. 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.

Receptor Sensitivity	Annual Mean PM ₁₀	Number of Receptors	Distance from the Source (m)			
			<20	<50	<100	<250
	28-32 µg/m ³	1-10	Medium	Low	Low	Low
		>10	Medium	Low	Low	Low
	24-28 µg/m ³	1-10	Low	Low	Low	Low
		>10	Low	Low	Low	Low
	<24 µg/m ³	1-10	Low	Low	Low	Low
		>10	Low	Low	Low	Low
Low	-	>1	Low	Low	Low	Low

Table A1-5: Sensitivity of the Area to Ecological Effects ⁷

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

Table A1-6: Defining the Risk of Dust Impacts

Sensitivity of the Area	Dust Emission Magnitude		
	Large	Medium	Small
Demolition			
High	High Risk	Medium Risk	Medium Risk
Medium	High Risk	Medium Risk	Low Risk
Low	Medium Risk	Low Risk	Negligible
Earthworks			
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible
Construction			
High	High Risk	Medium Risk	Low Risk
Medium	Medium Risk	Medium Risk	Low Risk
Low	Low Risk	Low Risk	Negligible
Trackout			

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

A2 EPUK & IAQM Planning for Air Quality Guidance

A2.1 The guidance issued by EPUK and IAQM (Moorcroft and Barrowcliffe et al, 2017) is comprehensive in its explanation of the place of air quality in the planning regime. Key sections of the guidance not already mentioned above are set out below.

Air Quality as a Material Consideration

“Any air quality issue that relates to land use and its development is capable of being a material planning consideration. The weight, however, given to air quality in making a planning application decision, in addition to the policies in the local plan, will depend on such factors as:

- *the severity of the impacts on air quality;*
- *the air quality in the area surrounding the proposed development;*
- *the likely use of the development, i.e. the length of time people are likely to be exposed at that location; and*
- *the positive benefits provided through other material considerations”.*

Recommended Best Practice

A2.2 The guidance goes into detail on how all development proposals can and should adopt good design principles that reduce emissions and contribute to better air quality management. It states:

“The basic concept is that good practice to reduce emissions and exposure is incorporated into all developments at the outset, at a scale commensurate with the emissions”.

A2.3 The guidance sets out a number of good practice principles that should be applied to all developments that:

- include 10 or more dwellings;
- where the number of dwellings is not known, residential development is carried out on a site of more than 0.5 ha;
- provide more than 1,000 m² of commercial floorspace;
- are carried out on land of 1 ha or more.

A2.4 The good practice principles are that:

- New developments should not contravene the Council's Air Quality Action Plan, or render any of the measures unworkable;
- Wherever possible, new developments should not create a new “street canyon”, as this inhibits pollution dispersion;
- Delivering sustainable development should be the key theme of any application;
- New development should be designed to minimise public exposure to pollution sources, e.g. by locating habitable rooms away from busy roads;

- The provision of at least 1 Electric Vehicle (EV) "rapid charge" point per 10 residential dwellings and/or 1000 m² of commercial floorspace. Where on-site parking is provided for residential dwellings, EV charging points for each parking space should be made available;
- Where development generates significant additional traffic, provision of a detailed travel plan (with provision to measure its implementation and effect) which sets out measures to encourage sustainable means of transport (public, cycling and walking) via subsidised or free-ticketing, improved links to bus stops, improved infrastructure and layouts to improve accessibility and safety;
- All gas-fired boilers to meet a minimum standard of <40 mgNO_x/kWh;
- Where emissions are likely to impact on an AQMA, all gas-fired CHP plant to meet a minimum emissions standard of:
 - Spark ignition engine: 250 mgNO_x/Nm³;
 - Compression ignition engine: 400 mgNO_x/Nm³;
 - Gas turbine: 50 mgNO_x/Nm³.
- A presumption should be to use natural gas-fired installations. Where biomass is proposed within an urban area it is to meet minimum emissions standards of 275 mgNO_x/Nm³ and 25 mgPM/Nm³.

A2.5 The guidance also outlines that offsetting emissions might be used as a mitigation measure for a proposed development. However, it states that:

"It is important that obligations to include offsetting are proportional to the nature and scale of development proposed and the level of concern about air quality; such offsetting can be based on a quantification of the emissions associated with the development. These emissions can be assigned a value, based on the "damage cost approach" used by Defra, and then applied as an indicator of the level of offsetting required, or as a financial obligation on the developer. Unless some form of benchmarking is applied, it is impractical to include building emissions in this approach, but if the boiler and CHP emissions are consistent with the standards as described above then this is not essential".

A2.6 The guidance offers a widely used approach for quantifying costs associated with pollutant emissions from transport. It also outlines the following typical measures that may be considered to offset emissions, stating that measures to offset emissions may also be applied as post assessment mitigation:

- Support and promotion of car clubs;
- Contributions to low emission vehicle refuelling infrastructure;
- Provision of incentives for the uptake of low emission vehicles;
- Financial support to low emission public transport options; and
- Improvements to cycling and walking infrastructures.

Screening

Impacts of the Local Area on the Development

"There may be a requirement to carry out an air quality assessment for the impacts of the local area's emissions on the proposed development itself, to assess the exposure that residents or users might experience. This will need to be a matter of judgement and should take into account:

- *the background and future baseline air quality and whether this will be likely to approach or exceed the values set by air quality objectives;*
- *the presence and location of Air Quality Management Areas as an indicator of local hotspots where the air quality objectives may be exceeded;*
- *the presence of a heavily trafficked road, with emissions that could give rise to sufficiently high concentrations of pollutants (in particular nitrogen dioxide), that would cause unacceptably high exposure for users of the new development; and*
- *the presence of a source of odour and/or dust that may affect amenity for future occupants of the development".*

Impacts of the Development on the Local Area

A2.7 The guidance sets out two stages of screening criteria that can be used to identify whether a detailed air quality assessment is required, in terms of the impact of the development on the local area. The first stage is that you should proceed to the second stage if any of the following apply:

- 10 or more residential units or a site area of more than 0.5 ha residential use; and/or
- more than 1,000 m² of floor space for all other uses or a site area greater than 1 ha.

A2.8 Coupled with any of the following:

- the development has more than 10 parking spaces; and/or
- the development will have a centralised energy facility or other centralised combustion process.

A2.9 If the above do not apply, then the development can be screened out as not requiring a detailed air quality assessment of the impact of the development on the local area. If they do apply then you proceed to stage 2, which sets out indicative criteria for requiring an air quality assessment. The stage 2 criteria relating to vehicle emissions are set out below:

- the development will lead to a change in LDV flows of more than 100 AADT within or adjacent to an AQMA or more than 500 AADT elsewhere;
- the development will lead to a change in HDV flows of more than 25 AADT within or adjacent to an AQMA or more than 100 AADT elsewhere;
- the development will lead to a realigning of 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;
- the development will introduce a new junction or remove an existing junction near to relevant receptors, and the junction will cause traffic to significantly change vehicle acceleration/deceleration, e.g. traffic lights or roundabouts;

- the development will introduce or change a bus station where bus flows will change by more than 25 AADT within or adjacent to an AQMA or more than 100 AADT elsewhere; and
- the development will have an underground car park with more than 100 movements per day (total in and out) with an extraction system that exhausts within 20 m of a relevant receptor.

A2.10 The criteria are more stringent where the traffic impacts may arise on roads where concentrations are close to the objective. The presence of an AQMA is taken to indicate the possibility of being close to the objective, but where whole authority AQMAs are present and it is known that the affected roads have concentrations below 90% of the objective, the less stringent criteria are likely to be more appropriate.

A2.11 On combustion processes (including standby emergency generators and shipping) where there is a risk of impacts at relevant receptors, the guidance states that:

"Typically, any combustion plant where the single or combined NO_x emission rate is less than 5 mg/sec is unlikely to give rise to impacts, provided that the emissions are released from a vent or stack in a location and at a height that provides adequate dispersion. As a guide, the 5 mg/s criterion equates to a 450 kW ultra-low NO_x gas boiler or a 30kW CHP unit operating at <95mg/Nm³."

In situations where the emissions are released close to buildings with relevant receptors, or where the dispersion of the plume may be adversely affected by the size and/or height of adjacent buildings (including situations where the stack height is lower than the receptor) then consideration will need to be given to potential impacts at much lower emission rates.

Conversely, where existing nitrogen dioxide concentrations are low, and where the dispersion conditions are favourable, a much higher emission rate may be acceptable".

A2.12 Should none of the above apply then the development can be screened out as not requiring a detailed air quality assessment of the impact of the development on the local area, provided that professional judgement is applied; the guidance importantly states the following:

"The criteria provided are precautionary and should be treated as indicative. They are intended to function as a sensitive 'trigger' for initiating an assessment in cases where there is a possibility of significant effects arising on local air quality. This possibility will, self-evidently, not be realised in many cases. The criteria should not be applied rigidly; in some instances, it may be appropriate to amend them on the basis of professional judgement, bearing in mind that the objective is to identify situations where there is a possibility of a significant effect on local air quality".

A2.13 Even if a development cannot be screened out, the guidance is clear that a detailed assessment is not necessarily required:

"The use of a Simple Assessment may be appropriate, where it will clearly suffice for the purposes of reaching a conclusion on the significance of effects on local air quality. The principle underlying this guidance is that any assessment should provide enough evidence that will lead to a sound conclusion on the presence, or otherwise, of a significant effect on local air quality. A Simple Assessment will be appropriate, if it can provide this evidence. Similarly, it may be possible to conduct a quantitative assessment that does not require the use of a dispersion model run on a computer".

A2.14 The guidance also outlines what the content of the air quality assessment should include, and this has been adhered to in the production of this report.

Assessment of Significance

- A2.15 There is no official guidance in the UK in relation to development control on how to describe the nature of air quality impacts, nor how to assess their significance. The approach within the EPUK/IAQM guidance has, therefore, been used in this assessment. This approach involves a two-stage process:
- a qualitative or quantitative description of the impacts on local air quality arising from the development; and
 - a judgement on the overall significance of the effects of any impacts.
- A2.16 The guidance recommends that the assessment of significance should be based on professional judgement, with the overall air quality impact of the development described as either 'significant' or 'not significant'. In drawing this conclusion, the following factors should be taken into account:
- the existing and future air quality in the absence of the development;
 - the extent of current and future population exposure to the impacts;
 - the influence and validity of any assumptions adopted when undertaking the prediction of impacts;
 - the potential for cumulative impacts and, in such circumstances, several impacts that are described as 'slight' individually could, taken together, be regarded as having a significant effect for the purposes of air quality management in an area, especially where it is proving difficult to reduce concentrations of a pollutant. Conversely, a 'moderate' or 'substantial' impact may not have a significant effect if it is confined to a very small area and where it is not obviously the cause of harm to human health; and
 - the judgement on significance relates to the consequences of the impacts; will they have an effect on human health that could be considered as significant? In the majority of cases, the impacts from an individual development will be insufficiently large to result in measurable changes in health outcomes that could be regarded as significant by health care professionals.
- A2.17 The guidance is clear that other factors may be relevant in individual cases. It also states that the effect on the residents of any new development where the air quality is such that an air quality objective is not met will be judged as significant. For people working at new developments in this situation, the same will not be true as occupational exposure standards are different, although any assessment may wish to draw attention to the undesirability of the exposure.
- A2.18 A judgement of the significance should be made by a competent professional who is suitably qualified. A summary of the professional experience of the staff contributing to this assessment is provided in Appendix A3.

A3 Professional Experience

Dr Denise Evans, BSc (Hons) PhD MEnvSc MIAQM

Dr Evans is a Technical Director with AQC, with more than 25 years' relevant experience. She has prepared air quality review and assessment reports for local authorities and has appraised local authority air quality assessments on behalf of the UK governments and provided support to the Review and Assessment helpdesk. She has extensive modelling experience, completing air quality and odour assessments to support applications for a variety of development sectors including residential, mixed use, urban regeneration, energy, commercial, industrial, and road schemes, assessing the effects of a range of pollutants against relevant standards for human and ecological receptors. Denise has acted as an Expert Witness and is a Member of the Institute of Air Quality Management.

Julia Burnell, MEnvSci (Hons) MEnvSc MIAQM

Miss Burnell is a Principal Consultant with AQC with over nine years' experience in the field of air quality. She has experience of undertaking a range of air quality assessments for power, transportation, and mixed-use development projects both in the UK and internationally. She is also experienced at preparing environmental permit applications for medium combustion plant/specified generator sites and has commissioned and maintained numerous ambient air quality monitoring surveys. Prior to her work with AQC, Julia completed an MEnvSci (Hons) in Environmental Science (four-year integrated master's). She is a Member of both the Institute of Air Quality Management and the Institution of Environmental Sciences.

Owen Dudman, BSc(Hons) MChem AfMEnvSci AfMIAQM

Mr Dudman is an Assistant Consultant with AQC and joined the company in 2024. Prior to joining AQC, Owen completed an integrated master's degree in chemistry at the University of Leeds, where he developed a keen interest in air quality, atmospheric chemistry, and their impacts on the environment and human health. His master's project specialised in atmospheric chemistry and key focus areas included obtaining new information on emissions from biodiesel combustion, with its consumption soaring, and evaluating the effects multifunctional compounds that form secondary organic aerosols have on air quality degradation.

A4 Construction Mitigation

A4.1 Table A4-1 sets out a list of best-practice measures from the IAQM guidance (IAQM, 2024) that should be incorporated into the specification for the works. These measures should ideally be written into a Dust Management Plan. Some of the measures may only be necessary during specific phases of work, or during activities with a high potential to produce dust, and the list should be refined and expanded upon in liaison with the construction contractor when producing the Dust Management Plan.

Table A4-1: Best-Practice Mitigation Measures Recommended for the Works

Measure	Desirable	Highly Recommended
Communications		
Develop and implement a stakeholder communications plan that includes community engagement before and during work on site		✓
Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environmental manager/engineer or the site manager		✓
Display the head or regional office contact information		✓
Dust Management Plan		
Develop and implement a Dust Management Plan (DMP) approved by the Local Authority which documents the mitigation measures to be applied, and the procedures for their implementation and management		✓
Site Management		
Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken		✓
Make the complaints log available to the local authority when asked		✓
Record any exceptional incidents that cause dust and/or air emissions, either on- or off- site, and the action taken to resolve the situation in the log book		✓
Hold regular liaison meetings with other high risk construction sites within 250 m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes		✓
Monitoring		
Undertake daily on-site and off-site inspections 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		✓

Measure	Desirable	Highly Recommended
soiling checks of surfaces such as street furniture, cars and window sills within 100 m of the site boundary, with cleaning to be provided if necessary		
Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the Local Authority when asked		✓
Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions		✓
Agree dust deposition, dust flux, or real-time 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 is a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction (IAQM, 2018)		✓
Preparing and Maintaining the Site		
Plan the site layout so that machinery and dust-causing activities are located away from receptors, as far as is possible		✓
Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site		✓
Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period		✓
Avoid site runoff of water or mud		✓
Keep site fencing, barriers and scaffolding clean using wet methods		✓
Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below		✓
Cover, seed, or fence stockpiles to prevent wind whipping		✓
Operating Vehicle/Machinery and Sustainable Travel		
Ensure all vehicles switch off their engines when stationary – no idling vehicles		✓
Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery-powered equipment where practicable		✓
Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on un-surfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures)		✓

Measure	Desirable	Highly Recommended
provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate)		
Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials		✓
Implement a Travel Plan that supports and encourages sustainable staff travel (public transport, cycling, walking, and car-sharing)		✓
Operations		
Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems		✓
Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate		✓
Use enclosed chutes, conveyors and covered skips		✓
Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate		✓
Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods		✓
Waste Management		
Avoid bonfires and burning of waste materials		✓
Measures Specific to Demolition		
Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust)	✓	
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		✓
Avoid explosive blasting, using appropriate manual or mechanical alternatives		✓
Bag and remove any biological debris or damp down such material before demolition		✓
Measures Specific to Earthworks		
Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable		✓

Measure	Desirable	Highly Recommended
Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable		✓
Only remove the cover from small areas during work, not all at once		✓
Measures Specific to Construction		
Avoid scabbling (roughening of concrete surfaces), if possible	✓	
Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place		✓
Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery	✓	
For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust	✓	
Measures Specific to Trackout		
Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use	✓	
Avoid dry sweeping of large areas	✓	
Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport	✓	



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