



Land South of 295 Main Street, Stanton Under Bardon

Air Quality Assessment

12754.2001

11th July 2025

Revision A





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2 Summary

2.1 An Air Quality Assessment was conducted by Apex Acoustics for a proposed residential development of 27 new houses on land south of 295 Main Street in Stanton Under Bardon. The assessment was prepared for Allison Homes East Midlands Limited to support a planning application. The report, issued on 11th July 2025, concludes that air quality does not pose a constraint on the development receiving planning consent.

2.2 Assessment Purpose and Scope

2.3 The assessment was required to ensure the development would not expose future residents to poor air quality, nor cause adverse impacts on existing sensitive areas during construction and operation. This was particularly relevant due to the site's location near the Old Cliffe Hill and Cliffe Hill Quarries. The assessment established baseline air quality, evaluated the site's suitability, and assessed potential impacts from the construction and operational phases.

2.4 Baseline Air Quality

2.5 A review of existing air quality conditions found:

- There are no Air Quality Management Areas (AQMAs) declared by Hinckley and Bosworth Borough Council (HBBC).
- The most recent (2023) NO₂ monitoring data, considered the most representative, shows concentrations below the air quality objective. This monitoring was conducted on the A511, a road with significantly more traffic than Main Street, suggesting levels at the development site would be lower.
- Predicted background concentrations for NO₂, PM₁₀ and PM_{2.5} at the development site are all below the relevant Air Quality Objectives (AQOs).
- The site is approximately 450m and 600m from Old Cliffe Hill and Cliffe Hill quarries, respectively. This is beyond the 400m distance at which IAQM guidance typically requires a detailed assessment for hard rock quarries.

2.6 Construction Phase Assessment

2.7 The assessment considered fugitive dust emissions from demolition, earthworks, construction, and trackout activities.

2.8 **Dust Emission Magnitude:** The potential dust emission magnitude was classified as 'Small' for earthworks, construction, and trackout. Demolition is not applicable as it is an undeveloped greenfield site.

2.9 **Risk of Impacts:** The potential risk of both dust soiling and human health impacts was determined to be 'Low' for all construction activities.

2.10 **Mitigation:** To manage these low risks, the report recommends a series of good practice dust control measures be included in a Construction Environmental Management Plan (CEMP) or a

Dust Management Plan (DMP). With these measures, the residual impact is predicted to be 'not significant'.

2.11 Operational Phase Assessment

2.12 The assessment evaluated the impact of traffic generated by the new development once occupied.

- The proposed development, combined with an adjacent consented development, will result in 416 additional vehicle movements per day.
- This is below the 500 Average Annual Daily Traffic (AADT) threshold set by EPUK/IAQM guidance that would trigger a detailed assessment.
- Therefore, the impact of the operational phase on local air quality is considered 'negligible' and 'not significant'.

2.13 Conclusion

2.14 The assessment demonstrates that the proposed development will not expose future occupants to poor air quality and that impacts during both construction and operational phases are not significant. The report concludes that there are no material reasons related to air quality to prevent the scheme from proceeding.

3 Introduction

3.1 Background

3.2 Apex Acoustics has been contracted by Allison Homes to carry out an air quality assessment for a planning application for the next phase of a proposed residential development involving the construction of 27 new houses on an area of land east of 295 Main Street in Stanton under Bardon, Markfield, Leicestershire, LE67 9TQ.

3.3 This development is an extension of the previously granted residential development of up to 50 dwellings to the south of this development.

3.4 The Site is located in the vicinity of Old Cliffe Hill and Cliffe Hill Quarries, situated to the north-east and north-west of the Site, respectively. Mineral extraction activities at these quarries have the potential to contribute to local emissions of dust and particulate matter (PM₁₀ and PM_{2.5}). Consequently, dust emissions associated with quarry operations may result in a loss of amenity for future residents and could represent a potential constraint to the granting of planning consent.

3.5 An air quality assessment is necessary to ensure that the development does not expose future occupants to poor air quality or cause adverse impacts to existing sensitive receptors during both construction and operational phases. This assessment will:

- Establish baseline air quality conditions at and around the site by reviewing existing monitoring data and conducting site-specific measurements or modelling if required.
- Evaluate the suitability of the site location for the proposed end use, considering factors such as proximity to pollution sources (e.g. busy roads, industrial sites) and local air quality standards.
- Assess potential air quality impacts during construction, including emissions from machinery, dust generation, and traffic movements, and identify mitigation measures to minimise adverse effects.
- Assess potential operational phase impacts, primarily from increased traffic emissions and other relevant pollutant sources associated with the development.
- Provide recommendations for mitigation measures or design considerations to ensure that any impacts are reduced to acceptable levels, thereby protecting the health and wellbeing of future occupants and nearby sensitive receptors.

3.6 The assessment will be carried out in accordance with relevant national and local policies and guidance, such as the National Planning Policy Framework (NPPF), Environment Act requirements, and local air quality management strategies.

3.7 Site Location and Context

3.8 The site is located to the east of Main Street in Stanton under Bardon, at approximate National Grid Reference (NGR): 446738, 310032. Reference should be made to Figure 1 for a map of the site and surrounding area.

3.9 It is proposed to build up to 27 residential units on the site, with access via an already consented site to the south.

3.10 The development has the potential to impact existing sensitive receptors through fugitive dust emissions during construction and traffic-related exhaust emissions during operation. Additionally, the presence of future occupants may increase exposure to any pre-existing air quality issues at the site. To address these concerns, an Air Quality Assessment has been undertaken to establish baseline conditions and evaluate potential impacts arising from the proposed development. The findings are presented in the following report.

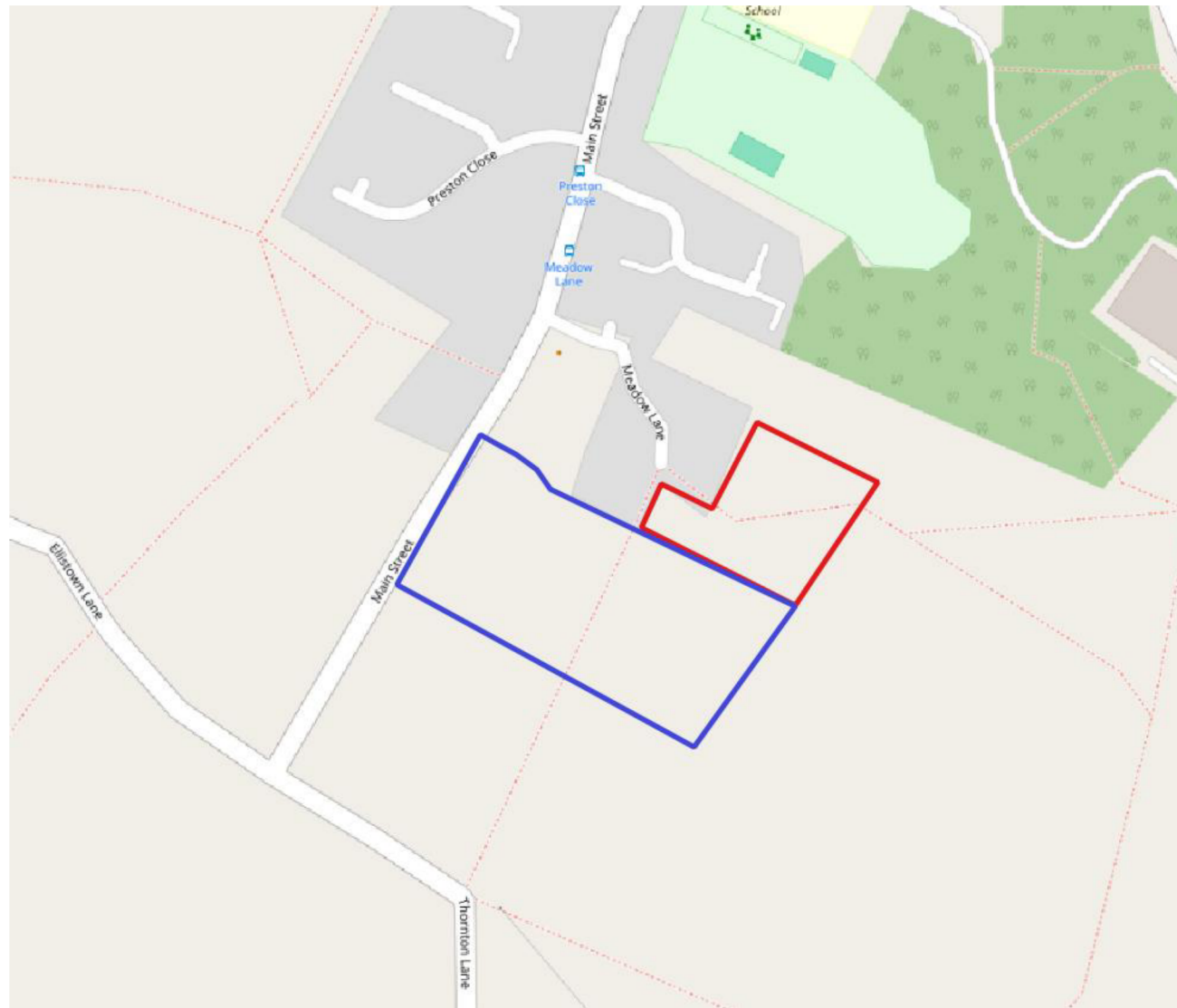


Figure 1: Site Location Plan (Site Boundary In Red, Consented Site in Blue)

4 Legislation and Policy

4.1 Legislation and Guidance

4.2 The air quality assessment has been undertaken in accordance with the following legislation and guidance, further details of which can be found in Appendix A:

- The Air Quality Standards Regulations 2010;
- Institute of Air Quality Management (IAQM) Guidance on the Assessment of Dust from Demolition and Construction, January 2024;
- Institute of Air Quality Management (IAQM) Guidance on the Assessment of Dust from Demolition and Construction, January 2024;
- Environmental Protection UK (EPUK) & Institute of Air Quality Management (IAQM) Land-Use Planning & Development Control: Planning for Air Quality, January 2017;
- The Environment Act 2021;
- Ministry of Housing, Communities and Local Government, National Planning Policy Framework, December 2023;
- Department for Communities and Local Government, Planning Practice Guidance, November 2023;
- Department for Environment, Food and Rural Affairs (DEFRA), Local Air Quality Management Technical Guidance LAQM.TG (22), August 2022;
- Department of Environment, Food and Rural Affairs, The Air Quality Strategy for England, April 2023;
- Site Allocations and Development Management Policies DPD 2006 – 2026;
- The Hinckley and Bosworth Local Plan 2020 – 2039;
- Good Design Guide SPD 2020

4.3 Assessment Criteria

Pollutant	Air Quality Objective/Interim Target/Concentration Target	
	Concentration (µg/m³)	Averaging Period
NO ₂	40	Annual mean
	200	1-hour mean, not to be exceeded on more than 18 occasions per annum
PM ₁₀	40	Annual mean
	50	24-hour mean, not to be exceeded on more than 35 occasions per annum
PM _{2.5}	12	Annual mean, Interim Target to be achieved by end of February 2028
	10	Annual mean, Concentration Target to be achieved by 2040

4.4 Table 1 presents the Air Quality Objectives (AQOs) and Interim Target for pollutants considered within this assessment.

Pollutant	Air Quality Objective/Interim Target/Concentration Target	
	Concentration (µg/m³)	Averaging Period
NO ₂	40	Annual mean
	200	1-hour mean, not to be exceeded on more than 18 occasions per annum
PM ₁₀	40	Annual mean
	50	24-hour mean, not to be exceeded on more than 35 occasions per annum
PM _{2.5}	12	Annual mean, Interim Target to be achieved by end of February 2028
	10	Annual mean, Concentration Target to be achieved by 2040

Table 1: Air Quality Objectives/Interim Target

5 Methodology

- 5.1 Construction Phase Assessment
- 5.2 To assess the impacts associated with dust and fine particulate matter released during construction activities, the IAQM guidance, has been followed. Further details of the assessment, and the criteria to assess the impact, are provided in Appendix B of this report.
- 5.3 The closest human receptors to where construction activities would occur are detailed in Table 2.

Receptor	Sensitivity	Direction from Site	Distance from Site Boundary
Proposed residential dwellings	High	South	Adjacent
Existing residential dwellings on Meadow Lane	High	West	Adjacent

Table 2: Existing Sensitive Receptors Considered in the Construction Phase Assessment

- 5.4 Operational Phase Assessment
- 5.5 A qualitative screening assessment has been undertaken of the impacts of NO₂ and fine particulate matter, as these are the pollutants considered most likely to exceed the objectives and limit values.

6 Baseline

- 6.1 Existing air quality conditions in the vicinity of the proposed development site have been identified in order to provide a baseline for assessment. These are detailed in the following Sections.
- 6.2 **Local Air Quality Management**
- 6.3 In compliance with the Environment Act 2021, HBBC has conducted a Review and Assessment of air quality within its jurisdiction. This process has found no exceedances of the annual mean objective for nitrogen dioxide (NO₂), and as a result, no Air Quality Management Areas (AQMAs) have been declared.
- 6.4 **Air Quality Monitoring**
- 6.5 Monitoring of pollutant concentrations is undertaken by HBBC throughout their area of jurisdiction. The most recent results available publicly, recorded in the vicinity of the development, are shown in Table 3, with their locations shown on Figure 2.

Monitoring Site	Monitored NO ₂ Concentration (µg/m ³)				
ID	2019	2020	2021	2022	2023
10, 12, 14	36.7	35.1	26.8	28.8	27.1

Table 3: Monitoring Results

- 6.6 As shown in Table 3, annual mean NO₂ concentrations are below the relevant AQO at the nearest monitor to the proposed development. Monitor 10, 12 and 14 (triplicate) is located on the A511, a road with significantly more traffic than Main Street. Pollutant levels can therefore be expected to be elevated in this location and assumed to be less at the development site.
- 6.7 It is important to note that monitoring data from 2020 and 2021 were collected during the COVID-19 pandemic, a period characterized by reduced traffic and industrial activity. Therefore, air pollutant concentrations recorded from 2022 are considered to provide a more realistic representation of typical current conditions.
- 6.8 HBBC do not undertake PM₁₀ or PM_{2.5} monitoring within the vicinity of the site.



Figure 2: Monitoring Locations

- 6.9 **Background Pollutant Concentrations**
- 6.10 Predictions of background pollutant concentrations on a 1 km by 1 km grid basis have been produced by DEFRA to support local authorities in their Review and Assessment of air quality across the UK. The proposed development site is located within grid square: 446500, 309500. Relevant data for this location was obtained from the DEFRA website (Reference 4) and is summarised in Table 4 for the purposes of this assessment.

Pollutant	Predicted Background Concentration (µg/m ³)
	2023
NO ₂	7.19
PM ₁₀	12.67
PM _{2.5}	6.90

Table 4: Background Pollutant Concentrations

- 6.11 As shown in Table 4, predicted background NO₂, PM₁₀ and PM_{2.5} concentrations are below the relevant AQOs at the development site.

7 Assessment

7.1 Introduction

7.2 There is the potential for air quality impacts as a result of the construction and operation of the proposed development. These are assessed in the following Sections.

7.3 Construction Phase Fugitive Dust Emissions

7.4 Step 2- Impact Assessment

7.5 In accordance with the IAQM guidance, the main activities to be considered during the construction phase of the proposed development are demolition, earthworks, construction and trackout.

7.6 Demolition involves the removal of existing structures. Earthworks encompass soil stripping, ground levelling, excavation, and landscaping activities. Construction works will focus on the development of proposed buildings and associated car parking areas.

7.7 Trackout refers to the transfer of dust and dirt from the construction site onto public roads by vehicles. This can occur through spillage of dusty materials onto road surfaces or by vehicles carrying mud and dirt from site onto roads. Deposited dust and dirt may subsequently be resuspended by passing traffic, contributing to local air quality impacts.

7.8 Step 2A

7.9 Step 2A of the assessment defines the potential dust emission magnitude from demolition, earthworks, construction and trackout in the absence of site-specific mitigation.

7.10 Examples of the criteria for the dust emission classes are detailed in Appendix B. The results of this step are detailed in Table 5.

	Activity			
	Demolition	Earthworks	Construction	Trackout
Dust Emission Magnitude	N/A ^a	Small ^b	Small ^c	Small ^d
<i>a. Currently an undeveloped greenfield site.</i> <i>b. Total site area estimated to be less than 18,000m²</i> <i>c. Total building volume estimated to be less than 12,000m³</i> <i>d. Number of construction phase vehicles estimated to be less than 20 HDV outward movements per day</i>				

Table 5: Dust Emission Magnitude Classifications

7.11 Step 2B

7.12 Step 2B of the construction phase dust assessment defines the sensitivity of the area, taking into account the significance criteria detailed in Appendix B, for demolition, earthworks, construction and trackout. The sensitivity of the area to each activity is assessed for potential dust soiling, human health effects and ecological effects (where applicable).

7.13 There is not anticipated to be any demolition on site.

7.14 For earthworks and construction, there are currently 1 - 10 receptors within 20m of where these activities may take place, which is assumed to be the site boundary for the purposes of this assessment.

7.15 The routing of construction vehicles is currently unknown. It is assumed vehicles would travel north up Main Street, left on to Cliffe Hill Road, east on the A511, then north or south on the M1. With this assumption, for trackout there are between 10 - 100 receptors within 20m of where trackout may occur, for a distance of up to 200m from the site entrance.

7.16 There are no ecological receptors within 50m of the development boundary or the access route within 200m of the site entrance. As such, ecological impacts have not been assessed further within this report.

7.17 A number of additional factors have been considered when determining the sensitivity of the surrounding area; these are summarised in Table 6.

Guidance	Comment
Whether there is any history of dust generating activities in the area	The site is located approximately 450m and 600m from the Old Cliffe Hill and Cliffe Hill Quarries, respectively. This is beyond the 400m distance at which a detailed assessment for a hard rock quarry is typically required by IAQM guidance. Combined with the prevailing south-westerly wind direction blowing dust away from the site, the impact from the quarries on future residents is considered "negligible".
The likelihood of concurrent dust generating activity on nearby sites	A review of the Planning Portal indicates there is a development (22/00527/OUT) immediately south of the site, which could cause some cumulative impacts.
Pre-existing screening between the source and the receptors	No screening to receptors.
Conclusions drawn from analysing local meteorological data which accurately represent the area: and if relevant the season during which works will take place	Winds are predominantly west and south westerly. As such, receptors to the east and north east of the development are most likely to be affected by dust releases.

Guidance	Comment
Conclusions drawn from local topography	There are no significant topographical constraints to dust dispersion.
Duration of the potential impact, as a receptor may become more sensitive over time	Currently it is unclear as to the duration of the construction phase.
Any known specific receptor sensitivities which go beyond the classifications given in the document	No specific receptor sensitivities identified during the baseline assessment.

Table 6: Additional Area Sensitivity Factors to Potential Dust Impacts

7.18 Step 2C

7.19 Step 2C of the construction phase dust assessment defines the risk of impacts from each activity, by combining the dust emission magnitude with the sensitivity of the surrounding area.

7.20 The risk of dust impacts from each activity, with no mitigation in place, has been assessed in accordance with the criteria detailed in Appendix B. The results of this step are detailed in Table 8.

	Activity			
	Demolition	Earthworks	Construction	Trackout
Step 2A				
Dust Emission Magnitude	N/A	Small	Small	Small
Step 2B				
Sensitivity of Closest Receptors	N/A	High	High	High
Sensitivity of Area to Dust Soiling Effects	N/A	Medium	Medium	Medium
Sensitivity of Area to Human Health Effects	N/A	Low ^a	Low ^a	Low ^a
Step 2C				
Dust Risk: Dust Soiling	N/A	Low Risk	Low Risk	Low Risk
Dust Risk: Human Health	N/A	Low Risk	Low Risk	Low Risk
<i>a. Background annual mean PM₁₀ concentration is taken from the LAQM Defra default concentration maps, for the appropriate grid square for 2023</i>				

Table 7: Construction Phase Dust Assessment for Human Receptors

7.21 As indicated in Table 7, the potential risk of dust soiling is **low** from earthworks, construction and trackout. The potential risk of human health impacts is **low** from earthworks, construction and

trackout. Demolition will not be taking place for the site and therefore it is deemed to be not applicable (N/A).

7.22 It should be noted that the potential for dust impacts is highly dependent on the distance between the dust-generating activities and sensitive receptor locations. The risk assessment was conducted using a worst-case scenario, assuming that construction works occur at the site boundary closest to each sensitive receptor. Consequently, the actual risk is likely to be lower than predicted for most of the construction period.

7.23 In accordance with the risk-based assessment approach prescribed by IAQM guidance, a detailed dust assessment is only required where sensitive receptors are located within 400 metres of a hard rock quarry (e.g., granite). Both Old Cliffe Hill and Cliffe Hill Quarries are classified as hard rock quarries. The Site lies approximately 450 metres from the boundary of Old Cliffe Hill Quarry to the north-east and approximately 600 metres from the boundary of Cliffe Hill Quarry to the north-west.

7.24 As outlined in Section 3 of the IAQM Guidance, due to the rapid decrease in both airborne dust concentrations and deposition rates with distance from the source, dust impacts are typically confined to within 400 metres of even the most dust-intensive operations. Referring to Figure 2 of the guidance and given that the minerals extracted at both quarries are classified as hard rock (e.g. granite) with no special site-specific circumstances, a detailed dust assessment is therefore not required.

7.25 Step 3

7.26 The IAQM guidance outlines a range of potential mitigation measures to reduce fugitive dust emissions during the construction phase, which are summarised below. These measures may be reviewed and updated prior to the commencement of construction and incorporated into a Construction Environmental Management Plan (CEMP) if required by the local authority. Additionally, a Dust Management Plan (DMP) can be developed to provide site-specific dust control measures.

7.27 Mitigation measures could include:

- Site management - 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;
- Monitor weather and amend work accordingly when wind is blowing towards sensitive receptors;
- Ensure effective water suppression is used during demolition operations;
- Cover, seed or fence stockpiles to prevent wind whipping. Stockpiles to be 5m from the boundary and maximum 5m high;
- Ensure vehicles with loose product are sheeted when entering/leaving site;

- Ensure all vehicles switch off engines when stationary - no idling vehicles;
- Speed limit to be implemented on site;
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate;
- 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 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;
- Implement a wheel washing system; and
- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site.

7.28 **Step 4**

7.29 Assuming relevant mitigation measures (such as those outlined above) are implemented, the residual impact from all dust generating activities is predicted to be **not significant**, in accordance with the IAQM guidance.

7.30 **Operational Phase**

7.31 Guidance prepared by EPUK/IAQM provides criteria for when a detailed air quality assessment may be required. The relevant criteria for a proposed development comprise:

- A change in Light Duty Vehicles (LDVs) of more than 500 AADT (or 100 AADT within/adjacent to an AQMA);
- A change in Heavy Duty Vehicles (HDVs) of more than 100 AADT (or 25 AADT within/adjacent to an AQMA);
- The realignment of existing roads near to receptors, with a change of more than 5m when the road is within an AQMA; and
- The introduction of a new junction, or removal of an existing junction, leading to a significant change in vehicle acceleration/deceleration (e.g. through the introduction of traffic lights or a roundabout) near to receptors.

7.32 The appointed transport consultant, Hub Transport Planning, has stated the proposed development will result in 146 additional vehicles per day, and the consented development to the south will result in an additional 270 vehicles per day. Combined they will result in 416 vehicles per day, which will not exceed the 500 AADT that would trigger the requirement for a detailed assessment.

7.33 Furthermore, background pollutant concentrations at the site (as detailed in Table 4) are well below the relevant mean air quality objectives.

7.34 **Proposed Sensitive Human Receptors**

7.35 We have also reviewed the current land uses surrounding the proposed development site. It is considered that there will be no other significant air quality, dust or odour issues for future users of the development, associated with the land uses surrounding the site.

7.36 The residual effect of potential dust emissions from quarrying activities on future occupiers of the Proposed Development is judged to be not significant, according to the relevant IAQM assessment criteria.

7.37 **Assessment of Significance for Human Receptors**

7.38 The significance of the overall effects of the proposed development has been assessed in accordance with the EPUK/IAQM guidance. This assessment is based on professional judgement and details of the assessors' experience is included in Appendix C.

7.39 In accordance with the EPUK/IAQM guidance, the air quality effect of the proposed development is considered to be **not significant**.

7.40 **Recommendations for Mitigation**

7.41 The impact of the proposed development on air quality is predicted to be not significant. Nevertheless, implementing mitigation measures can help further reduce any potential impacts. General best practice measures, such as promoting sustainable travel options, could also be adopted to support overall air quality improvements.

8 Conclusion

- 8.1 This report has been prepared to accompany a planning application for a proposed development of 27 new houses on land south of 295 Main Street in Stanton Under Bardon.
- 8.2 The proposed development has the potential to expose future occupants to elevated pollution levels and may result in air quality impacts during both the construction and operational phases. Therefore, an Air Quality Assessment was conducted to establish baseline conditions at the site, evaluate its suitability for the proposed end use, and assess any potential air quality effects arising from the development.
- 8.3 During the construction phase, there is potential for air quality impacts due to fugitive dust emissions from the site. These impacts were assessed following the IAQM methodology. Provided that good practice dust control measures are implemented, the residual significance of air quality impacts from dust generated by construction and trackout activities is predicted to be **not significant**.
- 8.4 Following a review of local air quality, in accordance with guidance from EPUK/IAQM, the impact of the operational phase of the development can be described as 'not significant'.
- 8.5 **Recommendations for Mitigation**
- 8.6 The impact of the proposed development is predicted to be not significant. However, mitigation measures will assist in reducing any potential impact and general best practice measures in relation to air quality could be implemented. This could include measures such as promotion of sustainable travel.
- 8.7 **Summary**
- 8.8 The assessment demonstrates that the proposed development will accord with national planning policy and will not lead to an unacceptable risk from air pollution. There are no material reasons in relation to air quality why the proposed scheme should not proceed, subject to appropriate planning conditions.

9 References

- 1 Institute of Air Quality Management (IAQM) Guidance on the Assessment of Dust from Demolition and Construction, January 2024
- 2 Environmental Protection UK (EPUK) & IAQM Land-Use Planning & Development Control: Planning for Air Quality, January 2017 Local Air Quality Management Technical Guidance (TG22), DEFRA, 2022
- 3 Institute of Air Quality Management (IAQM) Guidance on the Assessment of Mineral Dust Impacts for Planning, May 2016
- 4 Defra Local Air Quality Management webpages (<http://laqm.defra.gov.uk/review-and-assessment/tools/background-maps.html>)
- 5 Department for Environment, Food and Rural Affairs, Local Air Quality Management Technical Guidance LAQM.TG (22), August 2022
- 6 Greater London Authority, The Control of Dust and Emissions from Construction and Demolition: Supplementary Planning Guidance, 2014

Appendix A Air Quality Legislation and Guidance

A.1 National Air Quality Strategy

- A.2 The Environment Act 2021 is the UK’s latest framework of environmental protection, amending the Environment Act 1995. The Act requires the UK government to publish a national Air Quality Strategy (AQS).
- A.3 The AQS published by DEFRA, most recently in April 2023, sets out a framework to enable local authorities to deliver to the air quality standards and Air Quality Objectives (AQOs), and includes measures for improving ambient air quality. Air quality standards and objectives are set out for eight pollutants which may potentially occur at levels that give cause for concern. The 2023 AQS provides the most ambitious targets for PM_{2.5} to date. The AQS also provides details of the role that local authorities are required to take in working towards improvements in air quality, known as the Local Air Quality Management (LAQM) regime.

A.4 Air Quality Standards and Objectives

- A.5 The Air Quality Standards Regulations (2010) and subsequent amendments include Air Quality Limit Values (AQLVs) for the following pollutants:
- Nitrogen dioxide (NO₂);
 - Sulphur dioxide;
 - Lead;
 - Particulate matter with an aerodynamic diameter of less than 10µm (PM₁₀);
 - Particulate matter with an aerodynamic diameter of less than 2.5µm (PM_{2.5});
 - Benzene; and,
 - Carbon monoxide.
- A.6 Air Quality Target Values have also been provided for several additional pollutants. It should be noted that the AQLV for PM_{2.5} stated in the Air Quality Standards Regulations (2010) is superseded by that within The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023.
- A.7 Examples of where these objectives and limit values apply are detailed in the Defra LAQM Technical Guidance document LAQM.TG (22), Reference 5, and are included in Table 9.

Averaging Period	Objectives Should Apply At	Objectives Should Not Apply At
Annual mean	All locations where members of the public might be regularly exposed.	Building facades of offices or other places of work where members of the public do not have regular access. Hotels, unless people live there as their permanent residence.

Averaging Period	Objectives Should Apply At	Objectives Should Not Apply At
	Building façades of residential properties, schools, hospitals, care homes, etc.	Gardens of residential properties. Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term
24-hour mean and 8-hour mean	All locations where the annual mean objectives would apply, together with hotels. Gardens of residential properties ^a	Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term
1-hour mean	All locations where the annual mean and 24 and 8-hour objectives apply. Kerbside sites (e.g. pavements of busy shopping streets). Those parts of car parks and railway stations etc. which are not fully enclosed, where members of the public might reasonably be expected to spend one hour or more. Any outdoor locations to which the public might reasonably be expected to spend one hour or longer	Kerbside sites where public would not be expected to have regular access
15-minute mean	All locations where members of the public might reasonably be exposed for a period of 15 minutes or longer	
^a . Such locations should represent parts of the garden where relevant public exposure is likely, for example where there is seating or play areas. It is unlikely that relevant public exposure to pollutants would occur at the extremities of the garden boundary, or in front gardens, although local judgement should always be applied		

Table 8: Examples of Where the Air Quality Objectives Should Apply

A.8 Local Air Quality Management

- A.9 LAQM legislation in the Environment Act 2021 requires local authorities (LA) to conduct the periodic review and assessments of air quality, comparing present and likely future pollutant concentrations against the AQOs. If it is predicted that levels at locations of relevant exposure are likely to be exceeded, the LA is required to declare an Air Quality Management Area (AQMA). For each AQMA the LA is required to produce an Air Quality Action Plan, the objective of which is to reduce pollutant concentrations in pursuit of the AQOs.

- A.10 LAQM.TG(22) presents a streamlined approach for LAQM in England and Scotland; however, Northern Ireland is still considering changes to LAQM and therefore works according to the previous regime.
- A.11 Local authorities in England are required to produce Annual Status Reports (ASRs), and in Scotland and Wales, Annual Progress Reports (APRs). These replace all other reports which previously had to be submitted including Updating and Screening Assessments, Progress Reports and Detailed Assessments (which would be produced to assist with an AQMA declaration).
- A.12 Local authorities now have the option of a fast track AQMA declaration option. This allows more expert judgement to be used and removes the need for a Detailed Assessment where a local authority is confident of the outcome. Detailed Assessments should however still be used if there is any doubt.
- A.13 As part of the UK Government's requirement to improve air quality, selected local authorities in England are also currently investigating the feasibility of setting up Clean Air Zones (CAZs). These are areas where targeted action and co-ordinated resources aim to improve air quality within an urban setting, in order to achieve compliance with the EU limit values within the shortest possible time. Charges apply to certain types of vehicles travelling within these areas, including buses, coaches, taxis, private hire vehicles and heavy-duty vehicles (HDVs).
- A.14 CAZs are currently operational in Bath, Birmingham, Bradford, Bristol, Portsmouth, Sheffield and Tyneside (Newcastle and Gateshead). It was proposed to operate a CAZ in the Greater Manchester area, however this has now been revised, with the aim to implement a Clean Air Plan without the inclusion of a charging CAZ. In addition, in London a Ultra Low Emission Zone (ULEZ) is operated, covering all areas within the North and South Circular roads.

A.15 National Planning Policy Framework

- A.16 The revised National Planning Policy Framework (NPPF) was published in December 2023 and sets out the Government's planning policies for England and how these are expected to be applied.
- A.17 The purpose of the planning system is to contribute to the achievement of sustainable development. In order to ensure this, the NPPF recognises three overarching objectives including the following of relevance to air quality:
- "c. An environmental objective - to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy."
- A.18 Chapter 15 of the NPPF details objectives in relation to conserving and enhancing the natural environment. It states that:

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

[...]

e) Preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality [...]"

- A.19 The NPPF specifically recognises air quality as part of delivering sustainable development and states that:

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

- A.20 The implications of the NPPF have been considered throughout this assessment.

A.21 Planning Practice Guidance

- A.22 The National Planning Practice Guidance (NPPG) web-based resource was launched by the Department for Communities and Local Government on 6th March 2014 and most recently updated in November 2023 (November 2019 for air quality) to support the NPPF and make it more accessible. The air quality pages are summarised under the following headings:

1. What air quality considerations does planning need to address?
2. What is the role of plan-making with regard to air quality?
3. Are air quality concerns relevant to neighbourhood planning?
4. What information is available about air quality?
5. When could air quality considerations be relevant to the development management process?
6. What specific issues may need to be considered when assessing air quality impacts?
7. How detailed does an air quality assessment need to be?
8. How can an impact on air quality be mitigated?

A.23 These were reviewed and the relevant guidance considered as necessary throughout the undertaking of this assessment.

A.24 Dust

A.25 The main requirements with respect to dust control from industrial or trade premises not regulated under the Environmental Permitting (England and Wales) Regulations (2016) and subsequent amendments, such as construction sites, is that provided in Section 79 of Part III of the Environmental Protection Act (1990). The Act defines nuisance as:

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

A.26 Enforcement of the Act, in regard to nuisance, is currently under the jurisdiction of the local Environmental Health Department, whose officers are deemed to provide an independent evaluation of nuisance. If the LA is satisfied that a statutory nuisance exists, or is likely to occur or happen again, it must serve an Abatement Notice under Part III of the Environmental Protection Act (1990). The only defence is to show that the process to which the nuisance has been attributed and its operation are being controlled according to best practicable means.

A.27 Local Planning Policy

A.28 Hinckley & Bosworth Borough Council's air quality planning policies are centred on a framework of continuous monitoring, adherence to national guidelines, and the integration of air quality considerations into the planning and development process.

A.29 Key aspects of their policy include:

- **Monitoring and Reporting:** The council's Environmental Health team continuously monitors air quality across the borough, with a particular focus on nitrogen dioxide (NO₂) from vehicle emissions, which is the primary pollutant of concern. The findings are published in an annual Air Quality Status Report (ASR) submitted to the Department for Environment, Food & Rural Affairs (DEFRA).
- **No Air Quality Management Areas (AQMAs):** Currently, there are no designated AQMAs within Hinckley and Bosworth. While two AQMAs were declared in 2001, they were revoked in 2004 due to improvements in air quality.
- **Development and Planning Policies:**
 - The **Site Allocations and Development Management Policies (SADMP)** are a crucial part of the council's strategy. These policies mandate that any new development proposal must demonstrate that it will not have a negative impact on air quality.
 - The **Hinckley and Bosworth Local Plan 2020-2039**, in conjunction with the **Good Design Guide SPD 2020**, promotes high standards of design and sustainability in new

developments. This framework ensures that environmental factors, including air quality, are a key consideration in planning decisions.

A.30 In essence, while the council has not found it necessary to implement specific Air Quality Action Plans due to the absence of AQMAs, their planning policies are designed to proactively prevent the deterioration of air quality and ensure that new developments are sustainable and do not contribute to air pollution.

Appendix B Methodology for Construction Phase Assessment

B.1 Institute of Air Quality Management Guidance

B.2 The methodology for the construction phase dust assessment is set out in guidance from the IAQM.

Step 1

B.3 Step 1 screens the requirement for a more detailed assessment. Should human receptors be identified within 250m of the boundary or 50m from the construction vehicle route up to 500m from the site entrance, then the assessment proceeds to Step 2. Additionally, should ecological receptors be identified within 50m of the site or the construction vehicle route, then the assessment also proceeds to Step 2.

Step 2

- B.4 Step 2 determines the potential risk of dust arising in sufficient quantities to cause annoyance and/or health or ecological impacts. The risk is related to:
- The activities being undertaken (demolition, number of vehicles and plant etc);
 - The duration of these activities;
 - The size of the site;
 - The meteorological conditions (wind speed, direction and rainfall);
 - The proximity of receptors to the activity;
 - The adequacy of the mitigation measures applied to reduce or eliminate dust; and
 - The sensitivity of receptors to dust.

B.5 **Step 2A** assesses the scale and nature of the works which determines the potential dust emission magnitude as small, medium or large. Examples of how the magnitude may be defined are included in Table 10.

Activity	Dust Emission Class		
	Large	Medium	Small
Demolition	Total building volume >75,000m ³ , potentially dusty construction material (e.g. concrete), on-site crushing and screening, demolition activities >12m above ground level	Total building volume 12,000m ³ – 75,000m ³ , potentially dusty construction material, demolition activities 6-12m above ground level	Total building volume <12,000m 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	Total site area >110,000m ² , potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size), >10 heavy earth moving vehicles active at any one time, formation of bunds >6m in height	Total site area 18,000m ² – 110,000m ² , moderately dusty soil type (e.g. silt), 5-10 heavy earth moving vehicles active at any one time, formation of bunds 3m - 6m in height	Total site area <18,000m ² , soil type with large grain size (e.g. sand), <5 heavy earth moving vehicles active at any one time, formation of bunds <3m in height
Construction	Total building volume >75,000m ³ , on site concrete batching, sandblasting	Total building volume 12,000m ³ – 75,000m ³ , potentially dusty construction material (e.g. concrete), on site concrete batching	Total building volume <12,000m ³ , construction material with low potential for dust release (e.g. metal cladding or timber)
Trackout	>50 HDV (>3.5t) outward movements in any one day, potentially dusty surface material (e.g. high clay content), unpaved road length >100m	20-50 HDV (>3.5t) outward movements in any one day, moderately dusty surface material (e.g. high clay content), unpaved road length 50m – 100m	<20 HDV (>3.5t) outward movements in any one day, surface material with low potential for dust release, unpaved road length <50m
a. A vehicle movement is a one way journey i.e. from A to B, and excludes the return journey b. HDV movements during a construction project may vary over its lifetime, and the number of movements is the maximum not the average			

Table 9: Determining the Dust Emission Magnitude of Construction Phase Activities

B.6 **Step 2B** considers the sensitivity of the area to dust impacts which is defined as low, medium or high. The sensitivity categories for different types of receptors are described in Table 11.

Sensitivity Category	Dust Soiling Effects	Health effects of PM ₁₀	Ecological Effects
High	Users can reasonably expect to enjoy a high level of amenity; Appearance, aesthetics or value of a property would be diminished; Examples include dwellings, museums and other culturally important collections, medium and long term car parks and car show rooms	Locations where members of the public are exposed over a period of time relevant to the air quality objective for PM ₁₀ ; Examples include residential properties, hospitals, schools, and residential care homes	Locations with an international or national designation and the designated features may be affected by dust soiling; Locations where there is a community of a particularly dust sensitive species; Examples include a Special Area of Conservation with dust sensitive features
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; The appearance, aesthetics or value of their property could be diminished; People or property wouldn't reasonably be expected to be continuously present or regularly for extended periods of time; Examples include parks and places of work	Locations where people are exposed as workers and exposure is over a period of time relevant to the air quality objective for PM ₁₀ ; Examples include office and shop workers but will generally not include workers occupationally exposed to PM ₁₀	Locations where there is a particularly important plant species, where its dust sensitivity is uncertain or unknown; Locations with a national designation where the features may be affected by dust deposition; Examples include a Site of Special Scientific Interest with dust sensitive features

Sensitivity Category	Dust Soiling Effects	Health effects of PM ₁₀	Ecological Effects
Low	Enjoyment of amenity would not reasonably be expected; Property would not be diminished in appearance, aesthetics or value; People or property would be expected to be present only for limited periods of time; Examples include playing fields, farmland (unless commercially-sensitive horticultural), footpaths, short term car parks and roads	Locations where human exposure is transient; Examples include public footpaths, playing fields, parks and shopping streets	Locations with a local designation where the features may be affected by dust deposition; Examples include a Local Nature Reserve with dust sensitive features

Table 10: Sensitivity Categories for Dust Soiling, Human Health and Ecological Effects

B.7 Based on the sensitivity of individual receptors, the overall sensitivity of the area to dust soiling, human health and ecological effects is then determined using the criteria detailed in Tables 12 to 14, respectively.

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

a. The sensitivity to the area should be derived for each of the four activities
b. Estimate the total number of receptors within the stated distance. Only the highest level of sensitivity from the table needs to be considered
c. For trackout, distances should be measured from the side of the roads used by construction traffic. Without site specific mitigation, trackout may occur for up to 500m from large sites, 200m from medium sites and 50m from small sites, measured from the site exit. The impact declines with distance from the site and it is only necessary to consider trackout impacts up to 50m from the edge of the road

Table 11: Sensitivity of the Area to Dust Soiling Effects on People and Property^{ab}

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

Table 12: Sensitivity of the Area to Human Health Impacts ^{ab}

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

a. The sensitivity to the area should be derived for each of the four activities
b. Only the highest level of sensitivity from the table needs to be considered
c. For trackout, distances should be measured from the side of the roads used by construction traffic

Table 13: Sensitivity of the Area to Ecological Impacts ^{ab}

- B.8 These two factors are combined in **Step 2C** to determine the risk of dust impacts with no mitigation applied.
- B.9 The risk of dust effects is determined for four types of construction phase activities, with each activity being considered separately. If a construction phase activity is not taking place on the site, then it does not need to be assessed. The four types of activities to be considered are:
- Demolition;
 - Earthworks;
 - Construction; and
 - Trackout.
- B.10 The risk of dust being generated by demolition activities at the site is determined using the criteria in Table 14.

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

Table 14: Risk of Dust Impacts for Demolition

- B.11 The risk of dust being generated by earthworks, construction and trackout at the site is determined using the criteria in Table 15.

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

Table 15: Risk of Dust Impacts for Earthworks, Construction and Trackout

Step 3

- B.12 Step 3 of the assessment determines the site-specific mitigation required for each of the activities, based on the risk determined in Step 2. Mitigation measures are detailed in guidance published by the Greater London Authority, [6], recommended for use outside the capital by LAQM guidance, and the IAQM guidance document itself. Professional judgement should be used to determine the type and scale of mitigation measures required.

- B.13 If the risk is classed as negligible, no mitigation measures beyond those required by legislation will be necessary.

Step 4

- B.14 Once the risk of dust impacts has been determined and the appropriate mitigation measures identified, the final step is to determine the significance of any residual impacts. For almost all construction activity, the aim should be to control effects through the use of effective mitigation. Experience shows that this is normally possible. Hence the residual effect will normally be **not significant**.

Professional Judgement

- B.15 The IAQM guidance makes reference to the use of professional judgement when assessing the risks of dust and fine particulate matter from demolition and construction sites. Details of the experience of the personnel involved with the project are provided in Appendix C.

Appendix C Professional Experience of Assessor

- C.1 The assessment of air quality impacts, and the significance of the associated effects, takes into account the professional judgement of the assessor. Details of the experience of the personnel involved with the project are provided below:

Chrissie Park
BSc, MIAQM, MEnvSc, MIOA

Senior Consultant

Chrissie has been working in consultancy for nearing thirteen years and joined Apex in March 2025. Over her career she has gained detailed knowledge of air quality assessments for a variety of developments, including residential, commercial, industrial and quarry applications. She is involved in all aspects of the assessment, from carrying out air quality monitoring studies to analysing data, modelling and writing technical reports or chapters as part of an Environmental Statement. Chrissie also carries out odour assessments, again being involved in all aspects of the assessment.