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Air Quality Screening Assessment

Shenington, Oxfordshire

Elan Homes Limited

MAN.1947.AQ.001.R.002

'Experience and expertise working in union'

enzygo.com

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Non-Technical Summary

i. This report details a baseline review of air quality, considers potential impacts, and provides an emissions mitigation assessment relating to a residential development located at Shenington, Oxfordshire.

ii. The baseline review consists of a review of planning policy, site location, emission sources, recent monitoring data in the area local authority, air quality management, and national background pollutant concentrations produced by DEFRA.

iii. The site is not close to a major road, or an area identified by the local authority as experiencing elevated pollutant concentrations. Monitoring undertaken by Cherwell District Council at worse case locations indicates that pollutant concentrations are considered acceptable at the site location. National background mapped pollutant concentrations produced by DEFRA further indicate low pollutant levels in the vicinity of the site. Future year background concentrations are predicted to decrease further.

iv. There is the potential for the development to cause impacts at sensitive locations during the construction and operational phases. Impacts could arise following uncontrolled fugitive dust emissions generated by construction phase activities, and additional road vehicle exhaust emissions associated with vehicle movements generated during operation.

v. Construction phase impacts were assessed in accordance with the Institute of Air Quality Management methodology and assuming the implementation of good practice dust control measures air quality impacts were predicted to be not significant.

vi. Operational impacts were assessed against screening criteria provided by the Environmental Protection UK and Institute of Air Quality Management. Data provided by Monson Engineering Limited, indicated that anticipated development traffic flows are below the EPUK and IAQM assessment thresholds and operational impacts could be screened as not significant.

vii. Notwithstanding this, an Emissions Mitigation Assessment has been requested in accordance with the requirements of local authority and the Cherwell Air Quality Action Plan. The assessment provided a damage cost value which will inform a proportionate strategy to offset associated air quality impacts.

viii. Mitigation measures to offset potential air quality impacts have been proposed for a total value that exceed the damage cost of £8,683.02.

ix. In summary and considering all the above, it is predicted with confidence that all pollutant concentrations at the Proposed Development site would be acceptable and associated impacts are deemed not significant.

1.0 Introduction

1.1 Background

1.1.1 Enzygo Limited was commissioned by Elan Homes Limited to produce an Air Quality Assessment in support of a planning application for a residential development at Shenington, Oxfordshire, referred to as the 'Proposed Development'.

1.1.2 Enzygo understands that the proposals comprise the construction of circa 49 dwellings with associated access, parking, and landscaping.

1.1.3 Cherwell District Council (CDC) have requested that an air quality assessment is produced to show that the development would not be impacted by poor air quality and to understand the impact of the development on local air quality and where mitigation may be required. The assessment would be carried with the requirements of the National Planning Policy Framework (NPPF) and CDC's Air Quality Action Plan (AQAP).

1.1.4 In accordance with measure G.2 and G.3 of the CDC AQAP an emissions mitigation assessment has been produced to determine the appropriate level of mitigation required to offset impacts generated by vehicles travelling to and from the site.

1.1.5 Details of the assessment methodology, assessment inputs, results and conclusions are detailed within this report.

1.2 Site Location and Context

1.2.1 The Proposed Development is located at land off Stocking Lane and Rattlecombe Road within the village of Shenington, Oxfordshire, located at approximate National Grid Reference (NGR): 436920, 242770.

1.2.2 The site will occupy an area of approximately 2.8 ha and is bounded to the north, east and south by existing residential use along Stocking Lane and Rattlecombe Road. To the west of the site lies the Shenington Church of England Primary School as well as open space and agricultural fields. The closest 'highly' sensitive receptor locations are those along Stocking Lane immediately adjacent to the northeast boundary of the site. There are no Air Quality Management Areas (AQMA) close to the site.

1.2.3 Reference should be made to Figure 1 within Appendix A for a map of the site location and surrounding context.

2.0 Legislation Guidance and Policy

2.1.1 The following legislation, guidance and policy will be considered during the preparation of the Air Quality Assessment:

- European Union (EU) Directive 2008/50/EC;
- The National Planning Policy Framework (NPPF), updated on 20th July 2021;
- The National Planning Practice Guidance (NPPG), relevant chapters produced on 1st November 2019;
- Section 82 of the Environment Act (1995) (Part IV);
- The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, Department for Environment, Food and Rural Affairs (DEFRA), 2007[1];
- The Air Quality Standards (Amendment) Regulations (2016);
- Local Air Quality Management Technical Guidance 2016, DEFRA, April 2021; [2]
- Guidance on the Assessment of Dust from Demolition and Construction, Institute of Air Quality Management (IAQM), v1.1, June 2016[3];
- Land-Use Planning and Development Control: Planning for Air Quality, Environmental Protection UK and IAQM, January 2017[4]; and
- Cherwell District Council Air Quality Action Plan, Cherwell District Council, March 2021.

2.2 UK Legislation and National Strategy

2.2.1 Government policy requires the Secretary of State to publish a national Air Quality Strategy (AQS). The national AQS[1] produced by the Department for Environment, Food and Rural Affairs (DEFRA) sets out the framework to reducing adverse impacts of air pollution upon human health, vegetation, and ecosystems. To achieve this the AQS defines air quality objectives (AQOs) for 10 key pollutant species, including Nitrogen Dioxide (NO_2), fine Particulate Matter (PM_{10} and $PM_{2.5}$), Carbon Monoxide (CO), Sulphur Dioxide (SO_2), Benzene (C_6H_6), Lead (Pb), Ozone (O_3), polycyclic aromatic hydrocarbons (PAHs) and 1,3- butadiene.

2.2.2 In accordance with the Environment Act (1995), Local Authorities (LAs) have an obligation to periodically review and assess air quality within their administration to determine if specified pollutants are exceeding relevant objectives. This review involves the assessment of present and likely future air quality and is termed Local Air Quality Management (LAQM).

2.2.3 Should the LAQM process identify areas which are predicted to or currently exceeding relevant AQOs the LA is required to designate an Air Quality Management Area (AQMA). The AQMA is then accompanied by an Air Quality Action Plan (AQAP) which sets various measures and polices

[1] The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, DEFRA, 2007
[2] Local Air Quality Management Technical Guidance 2016 LAQM.(TG16), DEFRA, April 2021.
[3] Guidance on the Assessment of Dust from Demolition and Construction, Institute of Air Quality Management, 2016.
[4] Land-Use Planning and Development Control: Planning for Air Quality, EPUK and IAQM, January 2017.

to improve air quality with the goal of restoring compliance with the AQOs. The process of LAQM is informed by DEFRAs Technical Guidance LAQM (TG16)[2].

2.2.4 European Directive 2008/50/EC also sets out a similar approach to the AQS and defines limit values for the protection of human health and ecosystems. The Environmental Permitting (England and Wales) (Amendment) (EU Exit) Regulations 2019 ensures that the Environmental Permitting (EP) regime can continue following the UKs exit from the European Union (EU).

2.2.5 The regulations state also that exceedances of the objectives should be assessed in relation to air quality at locations which are situated outside of buildings or other natural or man-made structures, above or below ground, and where members of the public are regularly present"

2.2.6 The limits values, objectives and target values which are applicable to this assessment are summarised in Table 1 with relation to human health receptors.

Table 1 Air Quality Objectives

Pollutant	Air Quality Objectives	
	Concentration (µg/m³)	Averaging Periods
NO_2	40	Annual mean
	200	1-hour mean; not to be exceeded more than 18 times a year
PM_{10}	40	Annual mean
	50	24-hour mean; not to be exceeded more than 35 times a year
$PM_{2.5}$	25	Annual mean

2.2.7 LAQM (TG16)[2] specifies locations where the AQOs should be applied. For example, annual mean objectives are applied to all locations where members of the public might be expected to be regularly exposed, this includes building façades of residential properties, schools, hospitals, care homes etc. Conversely, annual mean objectives should not be applied at building façades of offices or other places of where members of the public do not have regular access, this also includes hotels, kerbside sites, and the gardens of residential properties.

2.2.8 24-hour objectives apply at all locations where the annual mean objective would apply, together with hotels and the gardens of residential properties.

2.2.9 1-hour mean objective apply at all locations where the annual mean, 24-hour mean objectives apply, as well as kerbside sites (for example, pavements of busy shopping streets), parts of car parks, bus stations and railway stations which are not fully enclosed.

2.2.10 1-hour means also apply to any outdoor locations where members of the public might reasonably be expected to spend one hour or longer (such as recreational parks and sports pitches).

2.2.11 At kerbside locations where the public would not be expected to have regular access neither averaging period is applicable.

2.3 Local Planning Policy

Cherwell District Council Local Plan

2.3.1 The Cherwell Local Plan 2011-2031, formally adopted on 20th July 2015, contains strategic planning policies for development and the use of land. It forms part of the statutory

Development Plan for Cherwell to which regard must be given in the determination of planning applications. The Local Plan was review and detailed the following policy text relevant to the assessment:

> ***"Policy ESD10**: Protection and Enhancement of Biodiversity and the Natural Environment*
>
> *Protection and enhancement of biodiversity and the natural environment will be achieved by the following*
>
> *[…]*
>
> *Air quality assessments will also be required for development proposals that would be likely to have a significantly adverse impact on biodiversity by generating an increase in air pollution"*

2.3.2 The local also includes a number of saved polices retained from the 2006. A review of saved policies highlighted the following policy text relevant to air quality

> ***"Pollution Control ENV1***
>
> *Development which is likely to cause materially detrimental levels of noise, vibration, smell, smoke, fumes or other types of environmental pollution will not normally be permitted"*

2.3.3 Reference has been made to the above policies by assessing the impacts of road vehicle exhaust emissions on future site users and on nearby existing sensitive locations.

3.0 Methodology

3.1.1 Pollutant emissions associated with construction processes and traffic generated during operation have potential to cause impacts at sensitive locations within the vicinity of the site. These have been assessed in accordance with the following methodology.

3.1.2 Consultation with the Environmental Health Officer at CDC was made on the 12th November 2021 to discuss the assessment scope and proposed methodology. No response was provided and therefore the assessment reflects industry standard methodology.

3.1.3 The methodology comprises of the following assessment stages:

- Construction Phase Fugitive Dust Impact Assessment,
- Operation Phase Exposure Screening Assessment,
- Operation Phase Impact Screening Assessment; and
- Emission Mitigation Assessment.

3.2 Construction Phase Impacts

3.2.1 There is potential for fugitive dust impacts to occur at sensitive locations as a result of earthworks, construction and trackout activities during the construction phase of the Proposed Development. A qualitative assessment will be undertaken in accordance with the methodology outlined within the IAQM document 'Guidance on the Assessment of Dust from Demolition and Construction'[3].

3.2.2 The assessment will identify specific control measures to be implemented on site which aim to reduce residual fugitive dust impacts. Appendix B details the IAQM methodology.

3.3 Operational Phase Site Exposure

3.3.1 The suitability of the site with regards to future pollutant exposure will be determined by a review of the latest air quality monitoring data provided within the CDC Annual Status Report (ASR)[5], predicted background pollutant concentrations produced by DEFRA[6], and location of AQMAs and significant emission sources.

3.3.2 The proposed residential site includes relevant exposure to both long and short term pollutant concentrations. In accordance with LAQM (TG16)[2] annual, 1-hour and 24-hour mean objectives will be considered with relation to onsite pollutant exposure.

3.3.3 Should the review indicate a strong indication that AQOs are likely to exceed across sensitive use, dispersion modelling will be undertaken to quantify pollutant concentrations.

3.4 Operational Phase Impacts

3.4.1 Potential operational impacts associated with vehicles travelling to and from the site will be compared against the criteria contained within the EPUK and IAQM guidance[4] to determine the likely significance of impacts and, if further assessment is required, to quantify operational impacts.

[5] 2020 Air Quality Annual Status Report, Cherwell District Council, June 2020
[6] https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2018

3.4.2 The EPUK and IAQM guidance[4] document states the following criteria to help establish when a detailed air quality assessment is likely to be considered necessary:

- Proposals that will cause a change in Light Duty Vehicle (LDV) flows of more than 500 AADT; and
- Proposals that will cause a change in Heavy Duty Vehicle (HDV) flows of more than 100 AADT.

3.4.3 Associated traffic data which fall below the above thresholds will be considered not significant in accordance with the EPUK and IAQM guidance[4] and no further assessment will be required.

3.4.4 Should the thresholds be exceeded it may be deemed necessary that further detailed dispersion modelling is required using the EPUK and IAQM guidance to quantify the significance of road vehicle exhaust impacts.

3.5 Emissions Mitigation Assessment

3.5.1 In accordance with measure G.2 and G.3 of Table 5.1 of the CDC AQAP an emission mitigation calculation was undertaken using a similar method to the DEFRA Damage Cost approach[7].

3.5.2 The purpose of the emissions mitigation assessment is to assess the local emissions from a development and to determine the appropriate level of mitigation required to help reduce the potential effect on health and/or the local environment. The value calculated therefore provides a basis for defining the financial commitment required for the offsetting development impacts.

3.5.3 Outlined below is the approach detailed with DEFRA methodology:

- Identify the additional trip rates (as trips/annum) generated by the proposed development (this information will normally be provided in the Transport Assessment);
- Assume an average distance travelled of 10 km/trip;
- Calculate the additional emissions of Oxides of Nitrogen (NO_x) and particulate matter with an aerodynamic diameter of less than 10 µm ($PM_{2.5}$) (kg/annum), based on emissions factors in the Emissions Factor Toolkit (Version 10.1)[8], and an assumption of an average speed of 50 km/h;
- Calculate emissions using the Emissions Factor Toolkit over a 5-year time frame;
- Use the latest 2021 DEFRA Damage Cost approach to provide a valuation of the excess emissions, using the currently applicable values for each pollutant; and
- Sum the NO_x and $PM_{2.5}$ costs.

3.5.4 It should be noted that the damage costs are adjusted to account for inflation using the Gross Domestic Product (GDP) deflator, as well as an uplift to damage costs by 2% cumulatively per annum from 2017. This reflects the assumption that willingness to pay for health outcomes will rise in line with real per capita GDP growth.

[7] https://www.gov.uk/government/publications/assess-the-impact-of-air-quality/air-quality-appraisal-damage-cost-guidance
[8] https://laqm.defra.gov.uk/air-quality/air-quality-assessment/emissions-factors-toolkit/

4.0 Baseline Conditions

Available air quality data and the surround context was reviewed to provide a baseline for assessment. This is detailed in the following sections.

4.1 Emission Sources

4.1.1 The main sources pollutant emissions within the vicinity of the Proposed Development site are road emissions associated with Tyscoe Road and Rattlecombe Road. The site boundary is located adjacent to Rattlecombe Road and approximately 1 km east of Tyscoe Road

4.1.2 Whilst the Proposed Development is located adjacent to Rattlecombe Road this road does not present significant traffic volumes. The site is considered as being set back from significant emissions sources and has been defined as an 'urban background' location in line with LAQM (TG16)[2].

4.1.3 Potential agricultural processes associated with adjacent farms are regulated by the Environment Agency (EA) (Part A1 processes) and the CDC (Part A2 and Part B processes). The planning regime should proceed on the basis that the permitting regime will ensure the processes comply with their permits and with not lead to significant effects at the Proposed Development.

4.2 Air Quality Management Areas

4.2.1 Following a review of DEFRAs AQMA[9] database it is evident that pollutant concentrations detailed within the AQS are currently above AQOs at areas within CDC's administration. Subsequently, four AQMAs have been declared.

4.2.2 The closest AQMA (Area No. 2) is located approximately 8.5 km southeast of the Proposed Development. It is therefore considered unlikely that impacts from the Proposed Development will influence these sensitive areas. Similarly, emission associated with the designation of the No. 2 AQMA are very unlikely to influence on-site conditions.

4.3 Air Quality Monitoring

4.3.1 To provide further context to existing air quality within the vicinity of the site the 2020 CDC ASR[5] was reviewed. The review indicated that CDC did not undertake any automatic (continuous) monitoring in 2019.

4.3.2 CDC do however monitor NO_2 concentrations across their borough using passive diffusion tubes. Following a review of the ASR no monitoring sites are located close to the Proposed Development site.

4.3.3 In the absence of localised data, conditions at representative monitoring sites have been utilised to provide a baseline review of likely onsite conditions. Table 2 presents data from the closest monitoring locations to the Proposed Development.

[9] https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=123

Table 2 Roadside Diffusion Tube Monitoring Results

ID	Site Name	Site Type	NGR (m)		Distance to Site (m)	In AQMA	Annual Mean Concentration (µg/m³)		
			X	Y			2017	2018	2019
8	Warwick Road North	Roadside	443905	241392	7,123	No	23.3	21.9	20.3
12	Sinclair Avenue	Urban Background	444274	241289	7,505	No	14.4	14.3	14.4
9	Ruscote Avenue	Roadside	444611	241172	7,858	No	20.1	20.6	18.9
13	Cranleigh Close	Urban Background	444366	239654	8,073	No	10.7	12.3	11.0
6	North Bar	Kerbside	445352	240774	8,668	Yes	36.9	34.5	34.0
11	Horsefair	Roadside	445351	240578	8,714	Yes	-	38.7	38.6
5	High Street	Kerbside	445407	240421	8,809	Yes	35.0	32.3	34.6
10	Oxford Road	Kerbside	445333	240100	8,829	Yes	33.4	36.1	35.3

4.3.4 Recent NO_2 diffusion tube monitoring data does not indicate exceedances of the annual mean AQO within 9 km of the Proposed Development. The historical data also shows a marginal improvement to annual mean NO_2 concentrations in recent years.

4.3.5 It is considered that all monitoring sites, except for urban background classifications, are not representative of expected conditions at the Proposed Development and represent worse case locations due to proximity to major A-road network or within the No.2 AQMA.

4.3.6 The Sinclair Avenue and Cranleigh Close locations are setback from significant emission sources, including local A-roads, and therefore presents a better representation of conditions close to the Proposed Development.

4.3.7 Figure 2 within Appendix I for a graphical representation of the diffusion tube monitoring locations.

4.4 DEFRA Background Concentrations

4.4.1 To assist LA their air quality Review and Assessments, DEFRA have produced background concentration maps for NO_2, PM_{10} and $PM_{2.5}$. Predictions are based on a 1 km by 1 km grid basis across the entire UK. The Proposed Development site is located within the following grid squares:

- NGR: 436500, 242500.
- NGR: 437500, 242500

4.4.2 Data for these grid squares was downloaded for the most reliable baseline year (2019) and the predicted development opening year (2024). Table 3 presents the average concentrations.

Table 3 DEFRA Background Pollutant Concentrations

Pollutant	Predicted Background Concentration (µg/m³)		Percentage of Annual Mean AQO (%)	
	2019	2024	2019	2024
NO_2	6.27	5.31	16	13
PM_{10}	13.08	12.21	33	31

Pollutant	Predicted Background Concentration (µg/m^3)		Percentage of Annual Mean AQO (%)	
	2019	2024	2019	2024
$PM_{2.5}$	8.47	7.76	21	19

4.4.3 Based on DEFRA predictions, background concentrations of NO_2 and PM do not exceed the relevant AQOs during the current or operation years. Background concentrations are below 50% of the AQOs for all pollutant species and provide suitable headroom with relation to road vehicle exhaust emissions from the adjacent road network. The data also indicates the concentrations are predicted to decrease further in future years and suggest an improvement to local air quality.

4.4.4 The review of available data provided by CDC and DEFRA suggests that air quality within the vicinity of the site is good with annual and hourly concentrations achieving relevant AQOs.

4.4.5 It is therefore considered unlikely that future site users would be subjected to unacceptable exposure and associated operational impacts are unlikely to lead to significant effects given baseline background conditions are well below 50% of the AQOs.

5.0 Assessment

There is the potential for air quality impacts as a result of the construction and operation of the Proposed Development at nearby sensitive receptors. These are assessed in the following Sections.

5.1 Construction Phase Impact Assessment

5.1.1 A desk top screening assessment (Step 1) identified sensitive receptors within 350m of the site boundary, and within 50m of the anticipated trackout. These are summarised in Table 4.

5.1.2 There are no designated ecological receptors within 50m of the Site boundary, or within 50m of anticipated trackout routes. Therefore, construction impacts on ecological designations have been screened out of the assessment.

Table 4 Sensitive Receptor Counts

Distance from Site or Trackout Routes (m)	Approximate Number of Receptors
Earthworks and Construction	
Less than 20	1 - 10
20 – 50	10 - 100
50 – 100	10 - 100
100 – 350	More than 100
Trackout	
Less than 20	10 - 100
20 – 50	More than 100

5.1.3 A detailed assessment of potential dust impacts is therefore required. This is detailed in in the following sections.

Magnitude

5.1.4 The scale and nature of the works has been determined to assess the magnitude (Step 2A) of fugitive dust emissions arising from each construction phase activity. The determination of magnitude was based upon the criteria detailed in Appendix B.

Demolition

5.1.5 The site is currently an area of open space and there is no scope to remove existing building structures to prepare for construction. Subsequently, this aspect of the construction phase dust risk assessment has not been considered further.

Earthworks

5.1.6 The Proposed Development site is unlikely to require significant imports or exports of material to prepare for construction. Based on the estimated site are area of 28,000 m^2 combined with the limited material movements the magnitude of potential dust emissions related to earthwork activities is considered **medium**.

Construction

5.1.7 The proposed development comprises the construction of circa 49 residential dwellings with an approximate volume between total building volume 25,000 to 100,000 m^3. Based on the IAQM

criteria the magnitude of potential dust emissions related to construction activities is considered **medium**.

Trackout

5.1.8 Information on the number of HDV trips generated during the construction phase was not available at the time of assessment. Similarly, the surface material and unpaved road length was not known.

5.1.9 Based on the site area, it is anticipated that the unpaved road length is likely to be greater than 100m. Based on the IAQM criteria the magnitude of potential dust emissions related to construction activities is considered **large**.

5.1.10 A summary of the construction phase magnitudes is detailed in Table 5.

Table 5 Dust Emission Magnitude

Earthworks	Construction	Trackout
Medium	Medium	Large

Sensitivity

5.1.11 The next step (Step 2B) is to determine the sensitivity of the surrounding area, based on general principles such as amenity and aesthetics, as well as human exposure sensitivity

Dust Soiling

5.1.12 Highly sensitive human receptors are located within all relevant buffer zones. This provides a **high** sensitivity for trackout activities and a **medium** sensitivity from earthwork and construction activities.

Human Health

5.1.13 Predicted annual mean background concentrations of PM_{10} within the vicinity of the proposed site, as predicted by DEFRA, are 13.08 µg/m^3 (Table 3). Based on the receptor counts provided in Table 4, the area is of **low** sensitivity for all construction phase activities.

5.1.14 Reference should be made to Figure 3 and 4 within Appendix A for receptor buffer zones.

Risk

5.1.15 The next stage of the assessment (Step 2C) combines the dust magnitude and receptor sensitivity defined above to determine the overall risk with no mitigation applied. This is summarised in Table 6.

Table 6 Summary of Unmitigated Dust Risk

Impact	Earthworks	Construction	Trackout
Dust Soiling	Medium	Medium	High
Human Health	Low	Low	Low

5.1.16 Following the determination of risk for each activity, the final step (Step 3) is to details necessary mitigation measures to reduce impacts during the construction phase.

5.1.17 These measures have been adapted for the Proposed Development and summarised in Table 13 within Section 6.1.

5.2 Road Traffic Exhaust Impacts

5.2.1 The Proposed Development has the provision of up to 49 dwellings. Based on the traffic data provided by Highways Advice Limited, the operational phase is predicted to generate a maximum AADT flow of 239 with 7 daily movements from HDVs.

5.2.2 Highways Advice also anticipate that trips to and from the Proposed Development would distribute evenly onto Rattlecombe Road resulting in approximately 120 trips present on the local road network at any one time.

5.2.3 The predicted traffic generation data falls below the EPUK and IAQM assessment threshold of 500 AADT and 100 HDV AADT as detailed in Section 3.4. The Proposed Development is therefore unlikely to result in significant impacts upon existing receptor locations. Furthermore, with background concentrations below 75% of the AQO, a change of 6-10% or more would be required to result in slight or moderate impacts. Based on the anticipated traffic generation and baseline conditions described in Section 4.0 it is unlikely that the development would result in significant impacts.

5.2.4 Based on the EPUK and IAQM guidance further detailed assessment work is not deemed necessary.

Future Exposure

5.2.5 As detailed in Section 3.3, CDC air quality monitoring data, predicted background pollutant concentrations and location of AQMAs and significant emission sources were reviewed to assess future pollutant exposure across the Proposed Development.

5.2.6 CDC monitoring data, at worst case locations with the No.2 AQMAs indicates that NO_2 concentrations at the Proposed Development, which is not within an AQMA and classified as an urban background site, will be well below the AQO.

5.2.7 A review of diffusion tube monitoring data provides further indication that 1-hour NO_2 concentrations are unlikely to be exceeded at the Proposed Development site. Annual mean roadside monitoring results are well below 60 µg/m³ and as stated within LAQM (TG16)[2] this annual mean threshold can be used as an indicator for hourly exceedances.

5.2.8 A further review of the DEFRA pollutant background maps provided in Table 5 indicates that the baseline NO_2 and PM pollutant concentrations across the Proposed Development are below of the relevant AQOs.

5.2.9 When considering CDC monitoring results, DEFRA background concentrations and distances to the closest A-road and AQMA, it is not expected that unacceptable pollutant exposure would be present across the Proposed Development during occupation.

5.2.10 The site location is therefore considered suitable for the proposed end use without the inclusion of protective mitigation measures.

5.3 Emissions Mitigation Assessment

5.3.1 The Damage Cost calculation was undertaken in accordance with measure G.2 and G.3 of the CDC AQAP to inform the level of mitigation required to offset development impacts. As required by the measure the accompanying strategy much provide evidence that proposed measures are proportionate to the calculated damage costs.

5.3.2 The damage cost provides analysis from 2024, the development opening year, until 2028 to include a five-year period of operation in accordance with the DEFRA guidance.

5.3.3 For the calculation, traffic data for the Proposed Development was provided by Highways Advice Limited. Additional inputs on vehicle speeds and trip lengths were obtained from the DEFRA guidance. Inputs are summarised in Table 7.

Table 7 Summary of Calculation Inputs

AADT	HDV%	Vehicle Speed (km/h)	Average Trip Length (km)
238	3.12	50	10

5.3.4 The inputs detailed in Table 7 were processed through the Emissions Factor Toolkit (v10.1) to obtain annual vehicle emissions. Annual emissions of NOx and PM_{10} (tonnes/annum) associated with the development traffic are detailed in Table 8. Damage costs are provided for $PM_{2.5}$ and as such, a factor of 0.645 was applied to PM_{10} emissions to convert to $PM_{2.5}$ emissions in line with DEFRA Damage Cost approach[7].

Table 8 Development Road Vehicle Exhaust Emissions

Assessment Year	NO_x Emissions (Tonnes/annum)	PM_{10} Emissions (Tonnes/annum)	$PM_{2.5}$ Emissions (Tonnes/annum)
2024	0.1723	0.0300	0.0194
2025	0.1546	0.0298	0.0192
2026	0.1388	0.0297	0.0192
2027	0.1243	0.0297	0.0192
2028	0.0296	0.0296	0.0191

5.3.5 The DEFRA guidance provides various damage cost factors dependent on emission sources as well as geographical locations. Using professional judgment, "Road Transport Urban (Small)" central damage factors were deemed suitable for the Proposed Development.

5.3.6 The IGBC damage cost factors for "Road Transport Urban (Small)" are detailed in Table 9. These are given as 2017 figures.

Table 9 2017 IGBC Damage Cost Factors

Pollutant	Central Damage Cost (£/t)
NO_x Road Transport Urban Small	6,251
$PM_{2.5}$ Road Transport Urban Small	55,777

5.3.7 In accordance with the DEFRA guidance the above 2017 based damage costs were rebased to 2021 to take account of inflation using Gross Domestic Product (GDP) deflator and also uplifted by 2% cumulatively per annum from 2017 to the development opening year of 2023 and over the five-year period until 2027. The uplift is to reflect the willingness to pay for health outcomes which are expected to rise each year in line with capita GDP growth.

5.3.8 The adjusted air quality damage cost factors are summarised in Table 10.

Table 10 Adjusted IGBC Damage Cost Factors

Assessment Year	Road Transport NO_x Medium (£/tonne)	Road Transport $PM_{2.5}$ Medium (£/tonne)
2024	7,602	67,831
2025	7,754	69,187
2026	7,909	70,571
2027	8,067	71,982
2028	8,229	73,422

5.3.9 Following the above adjustments, the damage cost factors are applied to the annual development emissions detailed in Table 8 to determine the total damage costs over the 5-year period to 2028 as shown in Table 11. A discount factor is also applied to costs based on Her Majesty's Treasury's (HMT) Green Book 'social time preference rate'. This reflects the rate at which society values the present compared to the future. According to HMT this is currently set at 3.5% per year for the next thirty years into the future forecasts.

Table 11 Air Quality Damage Cost

Assessment Year	Discounted Central Benefit NO_x (£)	Discounted Central Benefit $PM_{2.5}$ (£)
2024	1,310	1,310
2025	1,158	1,286
2026	1,025	1,263
2027	904	1,242
2028	212	1,222

5.3.10 The values in Table 11 are applied to the emissions given in and summed for each pollutant. The final damage costs are summarised in Table 12.

Table 12 Air Quality Damage Costs - 5 Year Period

Pollutant	Total Damage Costs (£)
NO_x	£4,610.09
$PM_{2.5}$	£4,073.93
TOTAL	£8,683.02

5.3.11 As outlined in

5.3.12 Table 12, the total damage cost for the Proposed Development was calculated at **£8,683.02**. This cost should be used as an indicator to the level of emissions offsetting measures required as part of the Proposed Development scheme. These may include on site and/or off-site measures.

6.0 Mitigation

6.1 Construction Phase

6.1.1 The IAQM guidance[3] provides several control measures to reduce fugitive dust impacts during the construction phase. These measures have been adapted based on professional judgment for the Proposed Development site and summarised in Table 13.

Table 13 Fugitive Dust Mitigation Measures

Impact	Control Measure and Requirement		
Communications	1	Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.	H
	2	Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.	H
	3	Display the head or regional office contact information	H
	4	Develop and implement a Dust Management Plan, which may include measures to control other emissions, approved by the Local Authority.	H
Site Management	5	Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.	H
	6	Make the complaints log available to the local authority when asked	H
	7	Record any exceptional incidents that cause dust and/or air emissions, either on- or off- site, and the action taken to resolve the situation in the log book.	H
	8	Hold regular liaison meetings with other high-risk construction sites within 500 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.	H
Monitoring	9	Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100 m of site boundary, with cleaning to be provided if necessary.	H
	10	Carry out regular site inspections to monitor compliance with the Dust Management Plan, record inspection results, and make an inspection log available to the local authority when asked	H
	11	Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.	H
Preparing & Maintaining Site	13	Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.	H
	14	Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.	H
	15	Fully enclose site or specific operations where there is a high potential for dust production and the site is actives for an extensive time period	H
	16	Avoid site runoff of water or mud	H
	17	Keep site fencing, barriers and scaffolding clean using wet methods	H

Impact	Control Measure and Requirement		
	18	Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.	H
	19	Cover, seed or fence stockpiles to prevent wind whipping	H
Operating Vehicle/Machinery & Sustainable Travel	21	Ensure all vehicles switch off engines when stationary - no idling vehicles	H
	22	Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.	H
	23	Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on un- surfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate)	H
	24	Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials	H
	25	Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing)	H
Operations	26	Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.	H
	27	Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.	H
	28	Use enclosed chutes and conveyors and covered skips.	H
	29	Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.	H
	30	Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.	H
Waste Management	31	Avoid bonfires and burning of waste materials	H
Earthworks & Construction	36	Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.	D
	37	Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable	D
	38	Only remove the cover in small areas during work and not all at once	D
	39	Avoid scabbling (roughening of concrete surfaces) if possible	D
	40	Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.	H
	41	Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.	D
	42	For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust.	D
Trackout	43	Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.	H
	44	Avoid dry sweeping of large areas.	H

Impact	Control Measure and Requirement		
	45	Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.	H
	47	Record all inspections of haul routes and any subsequent action in a site log book.	H
	49	Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).	H
	50	Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.	H
	51	Access gates to be located at least 10 m from receptors where possible	H

**D – desired*
**H – highly recommended*

6.1.2 Assuming the relevant mitigation measures outlined in Table 13 are implemented, the residual effect from all dust generating activities (Step 4) is predicted to be negligible and therefore not significant in accordance with the IAQM guidance[3].

6.2 Operational Phase

6.2.1 Following completion of the damage cost analysis it was determined that a monetary value of **£8,683.02** should be used as an indicator to inform the level of emissions offsetting required as part of the Proposed Development.

6.2.2 The mitigation strategy is to be determined at a later stage however the strategy must provide evidence that measures proportional to the calculated DEFRA damage cost. Once the proportional strategy is agreed and implemented It is considered road vehicle exhaust emissions associated with the development will be offset.

7.0 Conclusions

7.1.1 Enzygo Limited was commissioned by Elan Homes Limited to produce an Air Quality Assessment in support of a planning application for a residential development at Shenington, Oxfordshire, referred to as the 'Proposed Development'.

7.1.2 Enzygo understands that the proposals comprise the construction of circa 49 dwellings with associated access, parking, and landscaping.

7.1.3 A qualitative dust risk assessment was undertaken in accordance with the IAQM methodology to define a construction phase mitigation strategy. Assuming good practice and the implementation of suggested dust control measures, detailed in Table 13, residual impacts are predicted to be not significant.

7.1.4 A review of CDC monitoring data at locations within the No.2 AQMA indicated that both annual and hourly mean NO_2 and PM concentrations are below the relevant AQOs at worst case roadside locations. DEFRA pollutant background maps also indicate that annual mean NO_2 and PM concentrations are below the relevant AQOs at the Proposed Development site and are predicted to reduce in future years.

7.1.5 To consider operation phase impacts, a screening assessment was undertaken in accordance with the EPUK and IAQM screening criteria to determine potential impacts. The traffic data provided by Highways Advice Limited, predicts the Proposed Development is anticipated to generate a maximum AADT flow of 239 (7 HDVs) on the local road network.

7.1.6 As development traffic levels fall below the EPUK and IAQM screening thresholds, detailed assessment work is not required, and associated impact can be screened as not significant.

7.1.7 In summary it is predicted with confidence that annual and hourly NO_2 and PM concentrations at the Proposed Development site would be well below the relevant AQOs and associated construction and operational residual impacts are not significant.

7.1.8 In accordance with measure G.2 and G.3 of the CDC AQAP a damage cost assessment was undertaken to provide a basis for defining the financial commitment required for offsetting road vehicle emissions associated with the Proposed Development.

7.1.9 The implementation of measures listed in of this report, equivalent to a value of £8,683.02 is considered sufficient to offset potential air quality impacts associated with the Proposed Development.

7.1.10 Based on the assessment results, air quality is not considered a constraint to planning consent and the Development complies with the NPPF, the Cherwell AQAP and Policies ESD10 and ENV1 of the CDC Local Plan.

8.0 Abbreviations

AADT	Annual Average Daily Traffic
AQAP	Air Quality Action Plan
AQMA	Air Quality Management Area
AQO	Air Quality Objective
AQS	Air Quality Strategy
ASR	Annual Status Report
C_6H_6	Benzene
CDC	Cherwell District Council
DEFRA	Department for Environment, Food and Rural Affairs
EPUK	Environmental Protection UK
EU	European Union
HDV	Heavy Duty Vehicle
IAQM	Institute of Air Quality Management
LAQM	Local Air Quality Management
LDV	Light Duty Vehicle
NGR	National Grid Reference
NO_2	Nitrogen Dioxide
NO_x	Oxides of nitrogen
NPPF	National Planning Policy Framework
NPPG	National Planning Practice Guidance

1.0 Appendix A – Figures

Legend

Site Boundary

Figure 1 Site Location

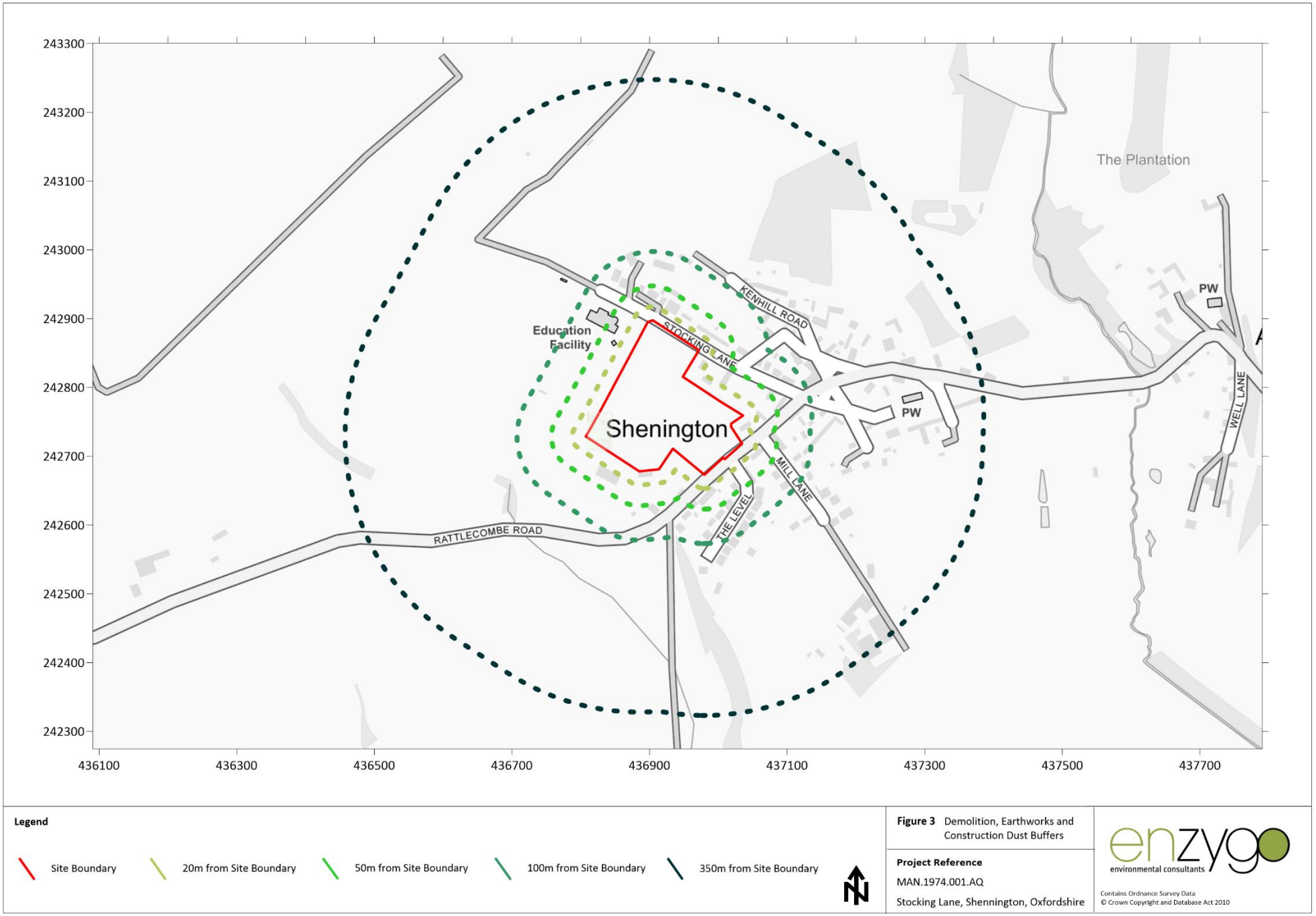
Project Reference
MAN.1974.001.AQ
Stocking Lane, Shennington, Oxfordshire

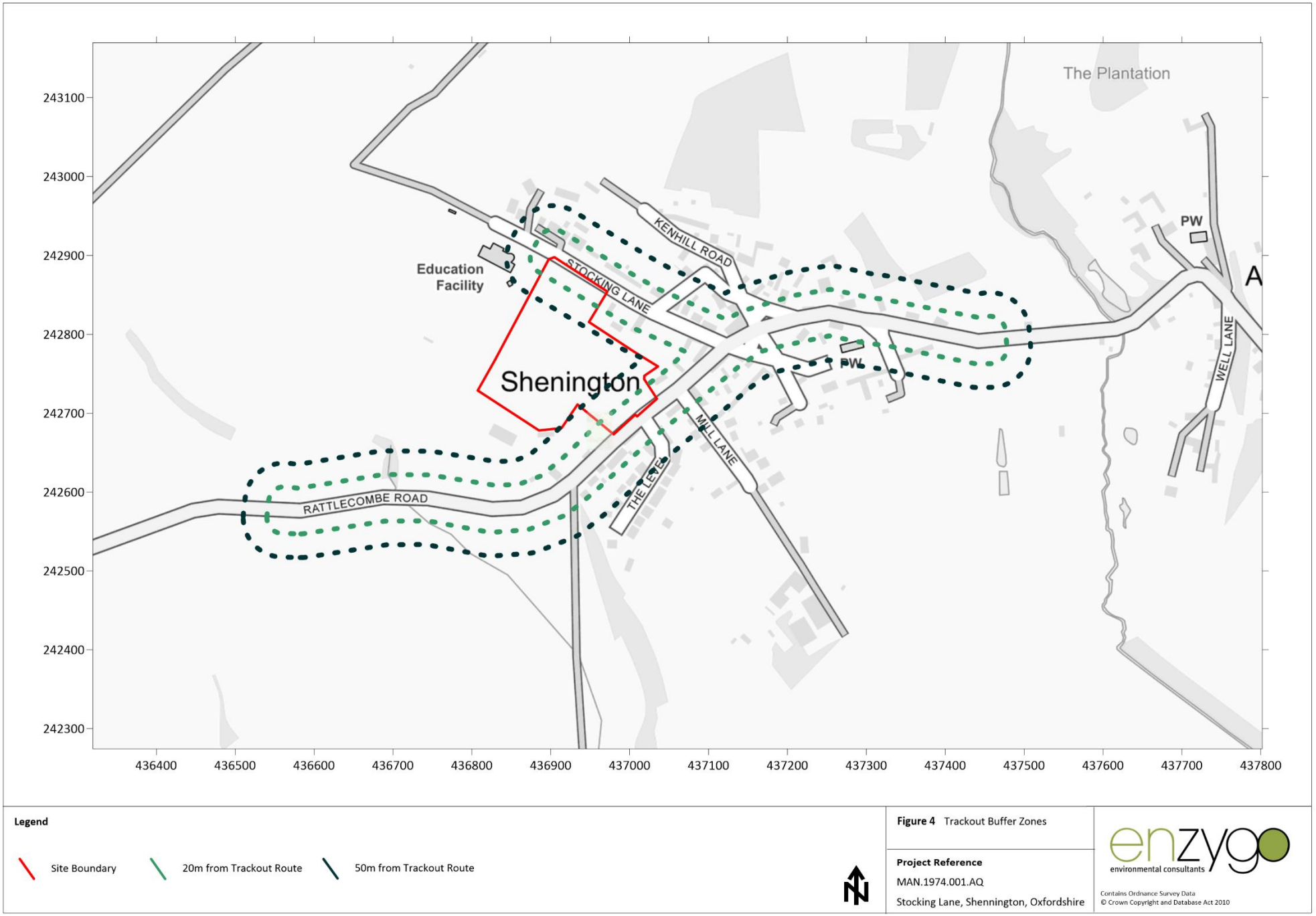
environmental consultants

Figure 2 DIffusion Tube and Automatic Monitoring Locations

Project Reference
MAN.1974.001.AQ
Stocking Lane, Shennington, Oxfordshire

environmental consultants


243300
243200
243100
243000
242900
242800
242700
242600
242500
242400
242300
436100
436300
436500
436700
436900
437100
437300
437500
437700
Shenington
Education Facility
STOCKING LANE
KENHILL ROAD
RATTLECOMBE ROAD
THE LEVEL
MILL LANE
WELL LANE
PW
PW
The Plantation
Legend
Site Boundary
20m from Site Boundary
50m from Site Boundary
100m from Site Boundary
350m from Site Boundary
Figure 3 Demolition, Earthworks and Construction Dust Buffers
Project Reference
MAN.1974.001.AQ
Stocking Lane, Shennington, Oxfordshire
environmental consultants
Contains Ordnance Survey Data
© Crown Copyright and Database Act 2010


The Plantation
KENHILL ROAD
STOCKING LANE
Education Facility
Shenington
PW
PW
A
WELL LANE
MILL LANE
THE LEE
RATTLECOMBE ROAD
243100
243000
242900
242800
242700
242600
242500
242400
242300
436400
436500
436600
436700
436800
436900
437000
437100
437200
437300
437400
437500
437600
437700
437800
Legend
Site Boundary
20m from Trackout Route
50m from Trackout Route
Figure 4 Trackout Buffer Zones
Project Reference
MAN.1974.001.AQ
Stocking Lane, Shennington, Oxfordshire
environmental consultants
Contains Ordnance Survey Data
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2.0 Appendix B – IAQM Construction Phase Methodology

Construction Phase Methodology

There is the potential for fugitive dust emissions to occur as a result of construction phase activities. These have been assessed in accordance with the methodology outlined within the IAQM guidance[3]. Activities are divided into four types to reflect their different potential impacts. These are:

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

The potential for dust emissions was assessed for each activity that is likely to take place and considered three separate dust effects:

- Annoyance due to dust soiling;
- Harm to ecological receptors; and
- The risk of health effects due to a significant increase in exposure to PM_{10} and $PM_{2.5}$.

The assessment steps are detailed below.

Step 1

Step 1 screens the requirement for a more detailed assessment. Should human receptors be identified within 350m from the site boundary or 50m from the construction vehicle route up to 500m from the site entrance, then the assessment should proceed to Step 2. Additionally, should ecological receptors be identified within 50m of the boundary site or 50m from the construction vehicle route up to 500m from the site entrance, then the assessment should also proceed to Step 2.

Should sensitive receptors not be present within the relevant distances then negligible impacts would be expected and further assessment is not necessary.

Step 2

Step 2 assesses the risk of potential dust impacts. A site is allocated to a risk category based on two factors:

- The scale and nature of the works, which determines the magnitude of dust arising as: small, medium or large (Step 2A); and
- The sensitivity of the area to dust impacts, which can be defined as low, medium or high sensitivity (Step 2B).

The two factors are combined in Step 2C to determine the risk of dust impacts without mitigation applied. Step 2A defines the potential magnitude of dust emission through the construction phase. The relevant criteria are summarised in Table B1.

Table B1: Construction Dust - Magnitude of Emission

Magnitude	Activity	Criteria
Large	Demolition	• Total building volume greater than 50,000m^3 • Potentially dusty construction material (e.g. concrete) • On-site crushing and screening • Demolition activities greater than 20m above ground level
	Earthworks	• Total site area greater than 10,000m^2 • Potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size) • More than 10 heavy earth moving vehicles active at any one time • Formation of bunds greater than 8m in height • More than 100,000 tonnes of material moved
	Construction	• Total building volume greater than 100,000m^3 • On site concrete batching • Sandblasting
	Trackout	• More than 50 Heavy Duty Vehicle (HDV) trips per day • Potentially dusty surface material (e.g. high clay content) • Unpaved road length greater than 100m
Medium	Demolition	• Total building volume 20,000m^3 to 50,000m^3 • Potentially dusty construction material • Demolition activities 10m to 20m above ground level
	Earthworks	• Total site area 2,500m^2 to 10,000m^2 • Moderately dusty soil type (e.g. silt) • 5 to 10 heavy earth moving vehicles active at any one time • Formation of bunds 4m to 8m in height • Total material moved 20,000 tonnes to 100,000 tonnes
	Construction	• Total building volume 25,000m^3 to 100,000m^3 • Potentially dusty construction material (e.g. concrete) • On site concrete batching
	Trackout	• 10 to 50 HDV trips per day • Moderately dusty surface material (e.g. high clay content) • Unpaved road length 50m to 100m
Small	Demolition	• Total building volume under 20,000m^3 • Construction material with low potential for dust release (e.g. metal cladding or timber) • Demolition activities less than 10m above ground level • Demolition during wetter months
	Earthworks	• Total site area less than 2,500m^2 • Soil type with large grain size (e.g. sand) • Less than 5 heavy earth moving vehicles active at any one time • Formation of bunds less than 4m in height • Total material moved less than 20,000 tonnes • Earthworks during wetter months
	Construction	• Total building volume less than 25,000m^3 • Construction material with low potential for dust release (e.g. metal cladding or timber)
	Trackout	• <10 HDV (3.5t) outward movements in any one day • Surface material with low potential for dust release • Unpaved road length <50m

Step 2B defines the sensitivity of the area around the development site for construction, earthworks and trackout. The factors influencing the sensitivity of the area are shown in Table B2.

Table B2: Examples of Factors Defining Sensitivity of an Area

Sensitivity	Receptors	
	Human	Ecological
High	• Users expect of high levels of amenity • High aesthetic or value property • People expected to be present continuously for extended periods of time • Locations where members of the public are exposed over a time period relevant to the AQO for PM_{10} e.g. residential properties, hospitals, schools and residential care homes	• Internationally or nationally designated site e.g. Special Area of Conservation
Medium	• Users would expect to enjoy a reasonable level of amenity • Aesthetics or value of their property could be diminished by soiling • 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 e.g. parks and places of work	• Nationally designated site e.g. Sites of Special Scientific Interest
Low	• Enjoyment of amenity would not reasonably be expected • Property would not be expected to be diminished in appearance • Transient exposure, where people would only be expected to be present for limited periods. e.g. public footpaths, playing fields, shopping streets, playing fields, farmland, footpaths, short term car park and roads	• Locally designated site e.g. Local Nature Reserve

The sensitivity of the area to dust soiling effects on people and property is shown in Table B3.

Table B3: Sensitivity of the Area to Dust Soiling Effects on People and Property

Receptor Sensitivity	Number of Receptors	Distance from the Source (m)			
		Less than 20	Less than 50	Less than 100	Less than 350
High	More than 100	High	High	Medium	Low
	10 - 100	High	Medium	Low	Low
	1 - 10	Medium	Low	Low	Low
Medium	More than 1	Medium	Low	Low	Low
Low	More than 1	Low	Low	Low	Low

Table B4 outlines the sensitivity of the area to human health impacts.

Table B4: Sensitivity of the Area to Human Health Impacts

Receptor Sensitivity	Annual Mean PM_{10} Concentration	Number of Receptors	Distance from the Source (m)				
			Less than 20	Less than 50	Less than 100	Less than 200	Less than 350
High	Greater than 32µg/m^3	More than 100	High	High	High	Medium	Low
		10 - 100	High	High	Medium	Low	Low
		1 - 10	High	Medium	Low	Low	Low
	28 - 32µg/m^3	More than 100	High	High	Medium	Low	Low
		10 - 100	High	Medium	Low	Low	Low
		1 - 10	High	Medium	Low	Low	Low

Receptor Sensitivity	Annual Mean PM_{10} Concentration	Number of Receptors	Distance from the Source (m)				
			Less than 20	Less than 50	Less than 100	Less than 200	Less than 350
	24 - 28µg/m^3	More than 100	High	Medium	Low	Low	Low
		10 - 100	High	Medium	Low	Low	Low
		1 - 10	Medium	Low	Low	Low	Low
	Less than 24µg/m^3	More than 100	Medium	Low	Low	Low	Low
		10 - 100	Low	Low	Low	Low	Low
	Less than 24µg/m^3	More than 100	Medium	Low	Low	Low	Low
		10 - 100	Low	Low	Low	Low	Low
		1 - 10	Low	Low	Low	Low	Low
Medium	Greater than 32µg/m^3	More than 10	High	Medium	Low	Low	Low
		1 - 10	Medium	Low	Low	Low	Low
	28 - 32µg/m^3	More than 10	Medium	Low	Low	Low	Low
		1 - 10	Low	Low	Low	Low	Low
	24 - 28µg/m^3	More than 10	Low	Low	Low	Low	Low
		1 - 10	Low	Low	Low	Low	Low
	Less than 24µg/m^3	More than 10	Low	Low	Low	Low	Low
		1 - 10	Low	Low	Low	Low	Low
Low	-	More than 1	Low	Low	Low	Low	Low

Table B5 outlines the sensitivity of the area to ecological impacts.

Table B5: Sensitivity of the Area to Ecological Impacts

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

Step 2C combines the dust emission magnitude with the sensitivity of the area to determine the risk of unmitigated impacts.

Table B6 outlines the risk category from demolition activities.

Table B6: Dust Risk Category from Demolition

Receptor Sensitivity	Dust Emission Magnitude		
	Large	Medium	Small
High	High	Medium	Medium
Medium	High	Medium	Low
Low	Medium	Low	Negligible

Table B7 outlines the risk category from earthworks and construction activities.

Table B7: Dust Risk Category from Earthworks and Construction

Receptor Sensitivity	Dust Emission Magnitude		
	Large	Medium	Small
High	High	Medium	Low
Medium	Medium	Medium	Low
Low	Low	Low	Negligible

Table B8 outlines the risk category from trackout.

Table B8: Dust Risk Category from Trackout

Receptor Sensitivity	Dust Emission Magnitude		
	Large	Medium	Small
High	High	Medium	Low
Medium	Medium	Low	Negligible
Low	Low	Low	Negligible

Step 3

Step 3 requires the identification of site-specific mitigation measures within the IAQM guidance to reduce potential dust impacts based upon the relevant risk categories identified in Step 2. For sites with negligible risk mitigation measures beyond those required by legislation are not required. However, additional controls may be applied as part of good practice.

Step 4

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 using effective mitigation.

Experience shows that this is normally possible. Hence the residual effect will normally be not significant.

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