Air Quality Assessment

Emms Lane, Horsham

Client: Kinswood Farm Ltd

Reference: 8147r3

Date: 16th January 2025



Report Issue

Report Title: Air Quality Assessment - Emms Lane, Horsham

Report Reference: 8147

Field	Report Version			
	1	2	3	4
Prepared by	Emily Macey	Emily Macey	Emily Macey	
Position	Senior Air Quality Consultant	Senior Air Quality Consultant	Senior Air Quality Consultant	
Reviewed by	Olly Hanlon	Olly Hanlon	Olly Hanlon	
Position	Principal Air Quality Consultant	Principal Air Quality Consultant	Principal Air Quality Consultant	
Authorised by	Jethro Redmore	Jethro Redmore	Jethro Redmore	
Position	Director	Director	Director	
Date of Issue	18th June 2024	2nd December 2024	16th January 2025	
Comment	-	Amended to address Environmental Health comments	Amended to address Environmental Health comments	

Whitefriars Business Centre, Lewins Mead, Bristol, BS1 2NT

info@red-env.co.uk | 0161 706 0075 | www.red-env.co.uk

This report has been prepared by Redmore Environmental Ltd in accordance with the agreed terms and conditions of appointment. Redmore Environmental Ltd cannot accept any responsibility for any use of or reliance on the contents of this report by any third party.

Executive Summary

Redmore Environmental Ltd was commissioned by Kinswood Farm Ltd to undertake an Air Quality Assessment in support of a retrospective planning application for the change of use of an agricultural building to B8 storage at Orchard Farm, Emms Lane, Horsham.

An Air Quality Assessment was undertaken to:

- Assess potential impacts associated with road transport emissions during the operational phase of the development; and,
- Identify any requirement for relevant mitigation measures.

Potential impacts during the operational phase of the proposals may occur due to road traffic exhaust emissions associated with vehicles travelling to and from the site. These were assessed using standard screening criteria. Based on the nature of the proposals, road traffic exhaust emission impacts were not predicted to be significant.

Consideration was made to the 'Air Quality and Emissions Mitigation Guidance for Sussex'. An Emissions Mitigation Assessment was undertaken in accordance with the guidance and suitable mitigation measures identified in order to reduce potential impacts on air quality in the vicinity of the site.

Based on the assessment results, air quality factors are not considered a constraint to planning consent for the development.

Table of Contents

1.0	**INTRODUCTION**	**1**
1.1	Instruction	1
1.2	Site Location and Context	1
1.3	Assessment Scope	1
1.4	Report Amendments	1
2.0	**LEGISLATION AND POLICY**	**3**
2.1	Legislation	3
2.2	Local Air Quality Management	5
2.3	National Planning Policy	5
2.4	National Planning Practice Guidance	7
2.5	Local Planning Policy	7
3.0	**METHODOLOGY**	**10**
4.0	**BASELINE**	**12**
4.1	Introduction	12
4.2	Local Air Quality Management	12
4.3	Air Quality Monitoring	12
4.4	Background Pollutant Concentrations	13
5.0	**ASSESSMENT**	**15**
5.1	Introduction	15
5.2	Potential Development Impacts Assessment	15
	Stage 1 Screening Criteria	15
	Stage 2 Screening Criteria	15
5.3	Air Quality and Emissions Mitigation Guidance for Sussex	16
	Emissions Mitigation Assessment	16
	Mitigation	18
6.0	**CONCLUSION**	**20**
7.0	**ABBREVIATIONS**	**21**

Appendix

Appendix 1 - Curricula Vitae

1.0 INTRODUCTION

1.1 Instruction

1.1.1 Redmore Environmental Ltd was commissioned by Kinswood Farm Ltd to undertake an Air Quality Assessment in support of a retrospective planning application for the change of use of an agricultural building to B8 storage at Orchard Farm, Emms Lane, Horsham.

1.2 Site Location and Context

1.2.1 The site is located at Orchard Farm, Emms Lane, Horsham, RH13 0TR, at approximate National Grid Reference (NGR): 512148, 125064. The relevant Local Authority (LA) is Horsham District Council (HDC). Reference should be made to Figure 1 for a map of the site and surrounding area.

1.2.2 The proposals comprise the change of use of a 2,340m^2 egg processing and packing station to B8 commercial storage alongside the creation of 28 external car parking spaces.

1.3 Assessment Scope

1.3.1 The proposals have the potential to cause air quality impacts at sensitive locations. As such, an Air Quality Assessment was undertaken to:

- Assess potential impacts associated with road transport emissions during the operational phase of the development; and,
- Identify any requirement for relevant mitigation measures.

1.3.2 This is detailed in the following report.

1.4 Report Amendments

1.4.1 Following submission of the Air Quality Assessment, a consultation response from HDC[1] included the following in relation to air quality:

[1] HDC Consultation, reference: DC/24/1273, 2024.

"Regarding the proposed mitigation measures, we would request that the applicant avoids duplication of measures that would normally be required through other regimes. When providing the associated costs for the mitigation measures it should be clearly explained what percentage of the mitigation measures is above the parking standards, and only this part can be accounted for. It is requested that the mitigation measures and associated costs table is reviewed."

1.4.2 The above comments are addressed in the following updated report. This includes a revised Damage Cost Calculation and review of the mitigation measures outlined in Section 5.3.

2.0 LEGISLATION AND POLICY

2.1 Legislation

2.1.1 The Air Quality Standards Regulations (2010) and subsequent amendments include Air Quality Limit Values (AQLVs) for the following pollutants:

- Nitrogen dioxide (NO_2);
- Sulphur dioxide;
- Lead;
- Particulate matter with an aerodynamic diameter of less than 10µm (PM_{10});
- Particulate matter with an aerodynamic diameter of less than 2.5µm ($PM_{2.5}$);
- Benzene; and,
- Carbon monoxide.

2.1.2 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) was amended in the Environment (Miscellaneous Amendments) (EU Exit) Regulations (2020).

2.1.3 The Air Quality Strategy (AQS) was produced by the Department for Environment, Food and Rural Affairs (DEFRA) and published on 28th April 2023[2]. The document contains standards, objectives and measures for improving ambient air quality, including a number of Air Quality Objectives (AQOs). These are maximum ambient pollutant concentrations that are not to be exceeded either without exception or with a permitted number of exceedences over a specified timescale. These are generally in line with the AQLVs, although the requirements for the determination of compliance vary.

2.1.4 The Environmental Improvement Plan 2023[3] was published in January 2023, providing long term and Interim Targets in order to reduce population exposure to $PM_{2.5}$. The concentration target for 2040 was subsequently adopted in the Environmental Targets (Fine Particulate Matter) (England) Regulations (2023).

[2] AQS: Framework for Local Authority Delivery, DEFRA, 2023.

[3] Environmental Improvement Plan 2023, DEFRA, 2023.

2.1.5 Table 1 presents the AQOs and Interim Target for pollutants considered within this assessment.

Table 1 Air Quality Objectives/Interim Target

Pollutant	Air Quality Objective/Interim 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(a)	Annual mean

Note: (a) Interim Target to be achieved by end of January 2028.

2.1.6 Table 2 summarises the advice provided in DEFRA guidance[4] on where the AQOs for pollutants considered within this report apply.

Table 2 Examples of Where the Air Quality Objectives Apply

Averaging Period	Objective Should Apply At	Objective Should Not Apply At
Annual mean	All locations where members of the public might be regularly exposed Building façades of residential properties, schools, hospitals, care homes etc.	Building façades 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 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	All locations where the annual mean objective would apply, together with hotels 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

[4] Local Air Quality Management Technical Guidance (TG22), DEFRA, 2022.

Averaging Period	Objective Should Apply At	Objective Should Not Apply At
1-hour mean	All locations where the annual mean and 24 and 8-hour mean objectives apply. Kerbside sites (for example, pavements of busy shopping streets) Those parts of car parks, bus stations 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 where members of the public might reasonably be expected to spend one hour or longer	Kerbside sites where the public would not be expected to have regular access

2.2 Local Air Quality Management

2.2.1 LAs are required to periodically review and assess air quality within their area of jurisdiction under the system of Local Air Quality Management (LAQM). This review and assessment of air quality involves comparing present and likely future pollutant concentrations against the AQOs. If it is predicted that levels at locations of relevant exposure, as summarised in Table 2, 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.

2.3 National Planning Policy

2.3.1 The revised National Planning Policy Framework[5] (NPPF) was published in December 2023 and sets out the Government's planning policies for England and how these are expected to be applied.

2.3.2 The purpose of the planning system is to contribute to the achievements 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

[5] NPPF, Ministry of Housing, Communities and Local Government, 2023.

biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy."

2.3.3 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, or 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 […]."

2.3.4 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."

2.3.5 The implications of the NPPF have been considered throughout this assessment.

2.4 National Planning Practice Guidance

2.4.1 The National Planning Practice Guidance[6] (NPPG) web-based resource was launched by the Department for Communities and Local Government on 6th March 2014 and updated on 1st November 2019 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 be relevant to the planning 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?

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

2.5 Local Planning Policy

2.5.1 The Horsham District Planning Framework[7] was adopted by HDC in November 2015. A review of the document indicated the following policies of relevance to this assessment:

> "Policy 1
>
> Strategic Policy: Sustainable Development
>
> When considering development proposals the Council will take a positive approach that reflects the presumption in favour of sustainable development contained in the National Planning Policy Framework. It will always work pro-actively with applicants jointly to find solutions which mean that proposals can be

[6] https://www.gov.uk/guidance/air-quality--3.

[7] Horsham District Planning Framework, HDC, 2015.

approved wherever possible, and to secure development that improves the economic, social and environmental conditions in the area.

Planning applications that accord with the policies in this Local Plan (and, where relevant, with polices in neighbourhood plans) will be approved without delay, unless material considerations indicate otherwise.

Where there are no policies relevant to the application or relevant policies are out of date at the time of making the decision then the Council will grant permission, unless material considerations indicate otherwise – taking into account whether:

- Any adverse impacts of granting permission would significantly and demonstrably outweigh the benefits, when assessed against the policies in the National Planning Policy Framework taken as a whole; or
- Specific policies in that Framework indicate that development should be restricted."

"Policy 24
Strategic Policy: Environmental Protection

The high quality of the district's environment will be protected through the planning process and the provision of local guidance documents. Taking into account any relevant Planning Guidance Documents, developments will be expected to minimise exposure to and the emission of pollutants including noise, odour, air and light pollution and ensure that they:

[…]

4. Minimise the air pollution and greenhouse gas emissions in order to protect human health and the environment;
5. Contribute to the implementation of local Air Quality Action Plans and do not conflict with its objectives;
6. Maintain or reduce the number of people exposed to poor air quality including odour. Consideration should be given to development that will result in new public exposure, particularly where vulnerable people (e.g. the elderly, care homes or schools) would be exposed to the areas of poor air quality; […]"

2.5.2 The Sussex Air Quality Partnership has produced the 'Air Quality and Emissions Mitigation Guidance for Sussex'[8] document in order to provide guidance on air quality considerations that should be made in relation to new developments. The guidance focusses on measures to reduce transport and construction related emissions from proposals in the district.

2.5.3 The above policies and guidance were taken into consideration throughout the undertaking of the assessment.

8 Air Quality and Emissions Mitigation Guidance for Sussex, Sussex Air Quality Partnership, 2021.

3.0 METHODOLOGY

3.1.1 The development has the potential to increase concentrations of NO_2, PM_{10} and $PM_{2.5}$ as a result of road traffic exhaust emissions associated with vehicles travelling to and from the site during the operational phase. A screening assessment was therefore undertaken using the criteria contained within the Institute of Air Quality Management (IAQM) 'Land-Use Planning & Development Control: Planning for Air Quality'[9] guidance to determine the potential for trips generated by the development to affect local air quality.

3.1.2 The following criteria are provided to help establish when an assessment of potential road traffic impacts on the local area is likely to be considered necessary:

A. If any of the following apply:

- 10 or more residential units or a site area of more than 0.5ha; or,
- More than 1,000 m^2 of floor space for all other uses or a site area greater than 1ha.

B. Coupled with any of the following:

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

3.1.3 Should these criteria not be met, then the IAQM guidance[10] considers air quality impacts associated with a scheme to be **not significant** and no further assessment is required.

3.1.4 Where the above criteria are met, then the assessor should proceed to assess the development proposals against the following Stage 2 screening criteria:

- The development leads to a change of Light Duty Vehicle (LDV) flows of:
  - More than 100 Annual Average Daily Traffic (AADT) within an AQMA;
  - More than 500 AADT outside of an AQMA;
- The development leads to a change of HDV flows of:

9 Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.

10 Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.

- More than 25 AADT within an AQMA;
- More than 100 AADT outside of an AQMA;

- Introduce a new junction that would cause traffic flow to change behaviour with respect to acceleration/deceleration or introduce queueing traffic where there previously wasn't any (such as a roundabout or traffic lights); and,
- Introduce one or more significant combustion processes where there is a risk of impact to relevant receptors.

3.1.5 Should these criteria not be met, then the IAQM guidance[11] considers air quality impacts associated with a scheme to be **not significant** and no further assessment is required.

[11] Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.

4.0 BASELINE

4.1 Introduction

4.1.1 Existing air quality conditions in the vicinity of the proposed development site were identified to provide a baseline for assessment. These are detailed in the following Sections.

4.2 Local Air Quality Management

4.2.1 As required by the Environment Act (1995), as amended by the Environment Act (2021), HDC has undertaken Review and Assessment of air quality within their area of jurisdiction. This process has indicated that annual mean NO_2 concentrations are above the AQO within the district. Two AQMAs have therefore been declared. The closest of these to the site is described as follows:

> "Horsham Cowfold AQMA: Cowfold town centre incorporating The Street, part of Station Road and Bolney Road."

4.2.2 The site is located approximately 8.7km north-west of the AQMA. It is considered unlikely the proposals would cause air quality impacts over a distance of this magnitude. As such, the AQMA has not been considered further in the context of this assessment.

4.2.3 HDC has concluded that concentrations of all other pollutants considered within the AQS are currently below the relevant AQOs. As such, no further AQMAs have been designated.

4.3 Air Quality Monitoring

4.3.1 Monitoring of pollutant concentrations is undertaken by HDC throughout their area of jurisdiction. Recent NO_2 results recorded in the vicinity of the development, as provided in HDC's '2023 Air Quality Annual Status Report (ASR)'[12], are shown in Table 3.

[12] 2023 Air Quality ASR, HDC, 2023.

Table 3 Monitoring Results

Monitoring Site		Annual Mean NO_2 Concentration (µg/m³)			
		2019	2020	2021	2022
49	Worthing Road, Southwater	23.5	21.1	21.7	19.4

4.3.2 As shown in Table 3, annual mean NO_2 concentrations were below the AQO of 40µg/m³ at the 49 - Worthing Road, Southwater, monitor in recent years. Reference should be made to Figure 2 for a map of survey position.

4.3.3 Pollutant concentrations during 2020 and 2021 were affected by changes to travel patterns associated with the COVID-19 pandemic. The results should therefore be viewed with caution. However, data for 2022 is now considered representative of post-pandemic conditions. This is supported by the IAQM[13], who have adopted the following position:

> "ambient air quality monitoring data for the year 2022 and beyond is generally considered to represent the current post-pandemic baseline."

4.3.4 HDC do not undertake PM_{10} or $PM_{2.5}$ monitoring in the vicinity of the site.

4.4 Background Pollutant Concentrations

4.4.1 Predictions of background pollutant concentrations on a 1km by 1km grid basis have been produced by DEFRA for the entire of the UK to assist LAs in their Review and Assessment of air quality. The proposed development site is located in grid square NGR: 512500, 125500. Data for this location was downloaded from the DEFRA website[14] for the purpose of the assessment and is summarised in Table 4.

Table 4 Background Pollutant Concentration Predictions

Pollutant	Predicted 2024 Background Pollutant Concentration (µg/m³)
NO_2	6.75
PM_{10}	14.81

[13] Use of 2020 and 2021 Monitoring Datasets - IAQM Position Statement V1.1, IAQM, 2023.

[14] http://uk-air.defra.gov.uk/data/laqm-background-maps?year=2018.

Pollutant	Predicted 2024 Background Pollutant Concentration (µg/m³)
$PM_{2.5}$	8.46

4.4.2 As shown in Table 4, predicted background NO_2, PM_{10} and $PM_{2.5}$ concentrations are below the relevant AQOs and Interim Target at the development site.

5.0 ASSESSMENT

5.1 Introduction

5.1.1 There is the potential for air quality impacts as a result of the operation of the proposed development. These have been assessed in the following Section.

5.2 Potential Development Impacts Assessment

Stage 1 Screening Criteria

5.2.1 Any vehicle movements associated with the development will generate exhaust emissions on the local and regional road networks. The proposals have therefore been assessed against the IAQM[15] Stage 1 screening criteria detailed in Section 3.3. The development includes more than 1,000m^2 of floor space, coupled with more than 10 car parking spaces. As such, the Stage 2 Screening Criteria have been considered below.

Stage 2 Screening Criteria

5.2.2 Trip generation for the existing egg processing and packing station and the proposed B8 commercial storage building were provided by RGP, the Transport Consultants for the project. This is summarised in Table 5.

Table 5 Existing and Proposed Daily Vehicle Movements

Land Use	Total Daily Vehicle Movements (AADT)	
	LDV	HDV
Existing	156	42
Proposed	195	48
Net Change	+39	+6

15 Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.

5.2.3 As shown in Table 5, an increase of 45 vehicle movements is predicted from the proposed B8 commercial storage use when compared to the existing egg processing and packing station.

5.2.4 Based on the above, the development is not predicted to result in an increase of LDV flows of more than 500 AADT on any individual road link and there will not be the requirement for more than 100 HDV movements per day. Additionally, the proposals do not include significant highway realignment or the introduction of a junction. As such, potential air quality impacts associated with the operational phase road vehicle exhaust emissions are predicted to be **not significant**, in accordance with the IAQM[16] screening criteria shown in Section 3.3.

5.3 Air Quality and Emissions Mitigation Guidance for Sussex

5.3.1 The Sussex Air Quality Partnership has developed 'Air Quality and Emissions Mitigation Guidance for Sussex'[17] to improve air quality across Sussex and encourage emissions reductions to improve the environment and health of the population.

5.3.2 The guidance[18] requires an Emissions Mitigation Assessment to be completed as the proposals comprise B8 storage use class with a floorspace of 500m^2 or more. This is provided in the following Sections.

Emissions Mitigation Assessment

5.3.3 The guidance[19] sets out an Emissions Mitigation Assessment methodology in order to assess the local emissions from a development and determine the appropriate level of mitigation required to help reduce the potential effect on health and/or the local environment.

16 Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.

17 Air Quality and Emissions Mitigation Guidance for Sussex, Sussex Air Quality Partnership, 2021.

18 Air Quality and Emissions Mitigation Guidance for Sussex, Sussex Air Quality Partnership, 2021.

19 Air Quality and Emissions Mitigation Guidance for Sussex, Sussex Air Quality Partnership, 2021.

5.3.4 The first step is to undertake a calculation to identify the monetary value of predicted emissions from the proposals and detail the mitigation measures to control air quality impacts associated with the scheme.

5.3.5 The calculation uses the Emissions Factor Toolkit (EFT) to calculate the amount of transport related pollutant emissions the development is likely to produce. The output is then multiplied by the Interdepartmental Group on Costs and Benefits damage costs for the key pollutants oxides of nitrogen (NO_x) and $PM_{2.5}$, and finally multiplied by 5 to provide a five-year exposure cost value. This is the value of mitigation that is expected to be spent on measures to reduce the impact of the proposed development. This has been summarised in the following equation:

5 Year Exposure Cost Value = EFT Output x Damage Costs x 5

5.3.6 It should be noted that the calculation has been undertaken using the most recent damage costs released by DEFRA in March 2023[20].

5.3.7 The input data values used in the assessment are shown in Table 6.

Table 6 Emissions Assessment - Inputs

Data	Value
Daily Vehicle Movements Produced by Development	243
HDV Proportion (%)	19.75
Average Speed (km/h)	50
Average Trip Length (km)	10
NO_x Output (kg/year)[(a)]	231.09
$PM_{2.5}$ Output (kg/year)[(a)]	24.45
NO_x Output (tonnes/year)	0.23
$PM_{2.5}$ Output (tonnes/year)	0.024
NO_x Damage Costs (£/tonne)[(b)]	4,921
$PM_{2.5}$ Damage Costs (£/tonne)[(b)]	31,972

20 Air Quality Appraisal: Damage Cost Guidance, DEFRA, 2023.

Note: (a) Calculated for current operational year 2025.
(b) Road Transport Rural Central Damage Cost.

5.3.8 The calculation is shown in Table 7.

Table 7 Emissions Assessment - Calculation

Data	Value
Total Cumulative Cost of NO_x Emissions (£)	4,329
Total Cumulative Cost of $PM_{2.5}$ Emissions (£)	3,802
Total Cumulative Five Year Exposure Cost Value (£)	8,131

Mitigation

5.3.9 As shown in Table 7, the calculation determined the development should include mitigation measures to reduce air quality impacts from road traffic emissions equal to £8,131.

5.3.10 The guidance[21] provides a number of mitigation options that should be considered for inclusion within developments. These were reviewed and those to be incorporated within the proposals include the following:

- Nine Electric Vehicle charging points serving 30% of the available spaces. This is three spaces (10%) above the parking standards for West Sussex[22]; and,
- Eight secure cycle spaces to encourage the use of sustainable modes of travel. This provision is four spaces above the parking standards for West Sussex[23].

5.3.11 The costs for the above measures were provided by the Applicant. These are summarised in Table 8.

21 Air Quality and Emissions Mitigation Guidance for Sussex, Sussex Air Quality Partnership, 2021.

22 West Sussex County Council Guidance on Parking at New Development, West Sussex County Council, 2020.

23 West Sussex County Council Guidance on Parking at New Development, West Sussex County Council, 2020.

Table 8 Mitigation Measures and Associated Costs

Mitigation Measure	Cost (£)	Comment
Four secure cycle spaces[a]	824	To encourage the use of non-transport modes and assist with the reduction of development transport related emissions
Three EV charging points[a] with installation, including one double rapid charger and one 7kW charger	7,500	To encourage the use of low emissions vehicles

Note: (a) Spaces shown are those above the parking standards.

5.3.12 The total value of the mitigation shown in Table 8 is £8,324. This exceeds the calculated damage cost of £8,131.

5.3.13 In addition to the above, the following measures will be used within the proposed development:

- Two Euro 6 standard delivery lorries; and,
- The energy strategy for the proposed development will be through solar panels.

5.3.14 It is considered that the above measures are sufficient to minimise air quality impacts for a development of this scale. As such, no further mitigation is required.

6.0 CONCLUSION

6.1.1 Redmore Environmental Ltd was commissioned Kinswood Farm Ltd to undertake an Air Quality Assessment in support of a retrospective planning application for the change of use of an agricultural building to B8 storage at Orchard Farm, Emms Lane, Horsham.

6.1.2 The proposals have the potential to cause air quality impacts as a result of road traffic exhaust emissions associated with vehicles travelling to and from the site during operation. As such, an Air Quality Assessment was undertaken to determine baseline conditions and consider potential effects as a result of the scheme.

6.1.3 Potential impacts during the operational phase of the proposed development may occur due to road traffic exhaust emissions associated with vehicles travelling to and from the site. These were assessed against the screening criteria provided within the IAQM[10] guidance. This indicated road traffic exhaust impacts were predicted to be **not significant.**

6.1.4 Consideration was made to the 'Air Quality and Emissions Mitigation Guidance for Sussex'. An Emissions Mitigation Assessment was undertaken in accordance with the guidance and suitable mitigation measures identified in order to reduce potential impacts on air quality in the vicinity of the site.

6.1.5 Based on the assessment results, air quality factors are not considered a constraint to planning consent for the development.

7.0 ABBREVIATIONS

AADT	Annual Average Daily Trips
AQLV	Air Quality Limit Value
AQMA	Air Quality Management Area
AQO	Air Quality Objective
AQS	Air Quality Strategy
ASR	Annual Status Report
DEFRA	Department for Environment, Food and Rural Affairs
EFT	Emissions Factor Toolkit
HDC	Horsham District Council
HDV	Heavy Duty Vehicle
IAQM	Institute of Air Quality Management
LA	Local Authority
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 Policy Guidance
PM_{10}	Particulate matter with an aerodynamic diameter of less than 10µm
$PM_{2.5}$	Particulate matter with an aerodynamic diameter of less than

Figures



Legend

Site Boundary

Title
Figure 1 - Site Location Plan

Project
Air Quality Assessment
Emms Lane, Horsham

Project Reference
8147

Client
Kinswood Farm Ltd

Contains Ordnance Survey Data
© Crown Copyright and Database Act 2023

Redmore environmental
www.red-env.co.uk | 0161 7060075



Legend

Site Boundary

Monitor

Title
Figure 2 - Monitoring Location

Project
Air Quality Assessment
Emms Lane, Horsham

Project Reference
8147

Client
Kinswood Farm Ltd

Contains Ordnance Survey Data
© Crown Copyright and Database Act 2023

Redmore environmental
www.red-env.co.uk | 0161 7060075