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**THE COPSE PHASE 2, WORTHING ROAD, HORSHAM,
WEST SUSSEX**

AIR QUALITY ASSESSMENT

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THE COPSE, WORTHING ROAD, HORSHAM, WEST SUSSEX

AIR QUALITY ASSESSMENT

CONTENTS

1	INTRODUCTION	2
1.1	Proposed Development	2
1.2	Site Location.....	2
2	LEGISLATION, POLICY AND GUIDANCE	3
2.1	Legislation	3
2.2	Planning Policy	3
2.3	Guidance	5
3	ASSESSMENT METHOD	8
3.1	Baseline method	8
3.2	Assessing Impacts of the Construction Phase.....	9
3.3	Assessing Impacts of the Operational Phase	9
3.4	Emissions Mitigation Assessment.....	10
4	BASELINE CONDITIONS.....	11
4.1	Air Quality Management Areas.....	11
4.2	Local Air Quality Monitoring	11
4.3	Background Concentrations.....	13
4.4	Summary	14
5	OPERATIONAL PHASE IMPACT ASSESSMENT.....	15
5.1	Traffic	15
5.2	Energy Plant	15
6	EMISSIONS MITIGATION ASSESSMENT	16
7	CONCLUSIONS	18
	Appendix A: Figures	19



1 INTRODUCTION

RF Environmental Ltd (RFE) has been commissioned to undertake an air quality assessment in support of a planning application for the proposed residential development at The Copse, Worthing Road, within administrative boundary of Horsham District Council (HDC).

The operational phase of the proposed development has the potential to cause air quality impacts on existing receptors from additional emissions.

The construction phase of the proposed development has the potential to cause temporary air quality impacts from dust-generating activities and construction vehicle exhaust emissions.

Emissions from road vehicles are a key source of air pollution. The main pollutants of health concern from road traffic are nitrogen dioxide (NO₂) and fine particles (PM₁₀ and PM_{2.5}). These pollutants have been considered in this assessment.

1.1 Proposed Development

The proposed residential development will comprise 23 no. properties, with 46 no. allocated residential parking spaces (excluding garage parking) and five visitor spaces. There will be one electric vehicle (EV) charging point allocated to each unit. Sheltered cycle storage sheds are included at each property, as well as cycle space in the garages.

The site access will be via Worthing Road to the east of the site.

The proposed development is a part of a wider scheme, involving a consented Care Home (DC/24/0622).

The red line boundary and site plan of the proposed development is presented in Figures A1 and A2 of Appendix A, which also includes the blue line boundary showing the consented Care Home.

The earliest proposed year of construction will be 2027 and the earliest anticipated operational year is 2028.

1.2 Site Location

The proposed development site is located to the north of the village of Southwater. The surrounding area is on the edge of an existing settlement. Worthing Road is situated approximately 140m to the east of the closest proposed property. The access road will join Worthing Road just below the roundabout connecting Worthing Road and Blakes Farm Road. Beyond Worthing Road, the A24 is located c. 270m to the east of the closest proposed residential property. The Hop Oast roundabout, connecting Worthing Road and the A24, is located c. 260m north of the proposed site access. The site is bound by residential dwellings to the east and green space immediately to the south, north and west.

The existing site comprises green space.

2 LEGISLATION, POLICY AND GUIDANCE

2.1 Legislation

The Environment Act 2021¹ makes provisions about targets, plans and policies about air quality. Part 1 of the Act requires the Secretary of State to set long-term targets for priority areas including air quality. Under the Act, the Secretary of State will need to set a target for PM_{2.5}. Part 4 of the Act amends the Environment Act 1995² and the Clean Air Act 1993³.

The UK government and the devolved administrations published the latest Air Quality Strategy (AQS) for England in April 2023⁴. The Strategy provides air quality standards and objectives for key air pollutants, which are designed to protect human health and the environment. The AQS sets out the actions the government expects local authorities in England to take in support of achieving the long-term air quality goals. The strategy provides a framework to enable local authorities to make the best use of their powers and deliver for their communities.

Part 4 of the Environment Act requires every local authority to carry out a review of the likely future air quality within the authority's area. Where, as a result of an air quality review, it appears that any air quality standards or objectives are not being achieved, or are not likely within the relevant period to be achieved, the local authority must designate an air quality management area (AQMA). If a local authority has designated an AQMA, the local authority must prepare an action plan in relation to that area.

Local authorities in England undertake review and assessment against the Strategy's national objectives prescribed in the Air Quality Regulations (2000)⁵, as amended⁶.

Environmental Protection Act (1990)

Section 79 of the Environmental Protection Act 1990⁷ allows local authorities to take enforcement action if dust emissions become a statutory nuisance.

2.2 Planning Policy

2.2.1 National Policies

National Planning Policy Framework (NPPF)

The National Planning Policy Framework (NPPF) (2025)⁸ sets out the government's planning policies for England and how these are expected to be applied. This revised framework replaces the previous National Planning Policy Framework published in March 2012, and most recently revised in February 2025.

¹ 2021 c.30. Environment Act 2021. HMSO.

² 1995 c.25. Environment Act 1995. HMSO.

³ 1993 c.11. Clean Air Act 1993. HMSO.

⁴ Defra, The Air Quality Strategy for England. April 2023.

⁵ SI 2000 No. 928. Environmental Protection, England. The Air Quality (England) Regulations 2000. HMSO.

⁶ SI 2002 No. 3043. Environmental Protection, England. The Air Quality (England) (Amendment) Regulations 2002. HMSO.

⁷ 1990 c.43. Environmental Protection Act. HMSO.

⁸ Ministry of Housing, Communities and Local Government. National Planning Policy Framework. February 2025.



Paragraph 110 refers to the promotion of sustainable transport and how this can contribute to improving air quality. It states that:

“The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making.”

Paragraph 199 focuses on how air quality should be considered during planning decisions. It 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”.

2.2.2 Local Policy

HDC Local Air Quality Management

A new Local Plan is currently under development for HDC. The Horsham District Planning Framework⁹ adopted in November 2015 is the current plan. Within the current plan, the Core Strategy is the overarching planning document for the Horsham district outside the South Downs National Park (SDNP). The framework sets out the vision for the future development of the area over the period to 2031. It sets out strategic objectives and key planning policies for the area.

Policy 24 on ‘Environmental Protection’ refers to air quality and states the following:

“...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:...”

“...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,

⁹ HDC, 2015. Horsham District Planning Framework. November 2015.



particularly where vulnerable people (e.g. the elderly, care homes or schools) would be exposed to the areas of poor air quality; and

7. Ensure that the cumulative impact of all relevant committed developments is appropriately assessed...”

2.3 Guidance

National Planning Practice Guidance

The government has revised and updated the national planning practice guidance¹⁰ to support the NPPF to make it more accessible. The guidance includes advice on: planning and air quality; the role of local plans regarding air quality; when air quality is likely to be relevant to a planning decision; what should be included within an air quality assessment; and how impacts on air quality can be mitigated. The guidance encourages early communication with local planning authorities, which has been included in the proposed development assessment work undertaken to date.

Construction Guidance

The Institute of Air Quality Management (IAQM)¹¹ has published guidance on the assessment of dust from construction and demolition. Based on this guidance, the main air quality impacts that may arise during construction activities are:

- dust deposition, resulting in the soiling of surfaces;
- visible dust plumes, which are evidence of dust emissions;
- elevated PM₁₀ concentrations, as a result of dust generating activities on site; and
- an increase in concentrations of airborne particles and nitrogen dioxide due to exhaust emissions from diesel powered vehicles and equipment on site.

Activities on construction sites are assessed to reflect their different potential impacts and the construction activities are sub-divided between demolition, earthworks, construction and trackout. The sensitivity of the area is considered and the assessment is used to define appropriate mitigation measures.

Operational Guidance

For operational impacts, the Environmental Protection UK (EPUK) and the IAQM produced guidance to ensure that air quality is adequately considered in the land-use planning and development control processes¹².

The guidance document is particularly applicable to assessing the effect of changes in exposure of members of the public resulting from residential and mixed-use developments,

¹⁰ Ministry of Housing, Communities and Local Government. 2019. Planning Practice Guidance: Air Quality. Available from: <https://www.gov.uk/guidance/air-quality--3>

¹¹ Holman et al (2024). IAQM Guidance on the assessment of dust from demolition and construction 2024. V2.2.

¹² Land-Use Planning & Development Control: Planning for Air Quality. Guidance from Environmental Protection UK and the Institute of Air Quality Management for the consideration of air quality within the land-use planning and development control processes. EPUK & IAQM. January 2017



especially those within urban areas where air quality is poorer. It is also relevant to other forms of development where a proposal could affect local air quality and for which no other guidance exists.

The Air Quality and Emissions Mitigation guidance for Sussex¹³ details steps required to assess and mitigate the impact that new developments in Sussex may have on local air quality. The guidance provides a screening checklist to determine the requirement for an emissions mitigation assessment and air quality assessment. The screening checklist asks if the proposed development is:

- *“a MAJOR development, as defined by Town and Country Planning (Development Management Procedure) Order (England) 2015.*
- *“within an Air Quality Management Area. Look this up at: <https://ukair.defra.gov.uk/aqma/maps> or contact the relevant Local Authority Air Quality Officer;*
- *“in relevant proximity to an Air Quality Management Area. Contact the relevant Local Authority Air Quality Officer;*
- *“in an area close to exceeding the Air Quality Objectives. Contact the relevant Local Authority Air Quality Officer;*
- *“B8 storage and distribution use class with a floorspace of 500m² or more. This is included due to the transport-related movements usually associated with this Use Class.”*

If the proposed development meets any of the above criteria then an air quality assessment and emissions mitigation assessment is required, unless otherwise agreed with the council's air quality officer.

Air Quality Criteria

A summary of the air quality objectives relevant to the proposed development, as set out in the UK Air Quality Strategy, is presented in Table 2.1 overleaf. These objectives apply to human receptors.

¹³ Sussex Air (2021). Air Quality and Emissions Mitigation guidance for Sussex. Version 1.1. April 2021.

Pollutant	Time Period	Objective
Nitrogen Dioxide (NO ₂)	1-hour Mean	200 µg/m ³ not to be exceeded more than 18 times a year
	Annual Mean	40 µg/m ³
PM ₁₀	1-hour Mean	50 µg/m ³ not to be exceeded more than 35 times a year
	Annual Mean	40 µg/m ³
PM _{2.5}	Annual Mean	20 µg/m ³ (12 µg/m ³ by 2028)*

TABLE 2.1: UK AIR QUALITY OBJECTIVES FOR NITROGEN DIOXIDE AND PARTICULATES

* The presented PM_{2.5} objective in brackets is an interim target prescribed in The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 and is the responsibility of national government and is not covered in Regulations aimed at the LAQM framework. Although local authorities have a role to play in delivering reductions in PM_{2.5}. The PM_{2.5} target of 20 µg/m³ is covered by the Air Quality Standards Regulations 2010 aimed at Local Authorities.



3 ASSESSMENT METHOD

3.1 Baseline method

A review of baseline conditions was undertaken to understand existing air quality in the area.

3.1.1 Data sources

3.1.1.1 Local Air Quality Management

The latest publicly-available air quality monitoring data managed by HDC are for 2024.

Monitoring data collected by HDC as part of their local air quality management (LAQM) duties was obtained to inform the baseline.

3.1.1.2 Defra Background Maps

Background pollutant concentrations across the study area have been defined using modelled national pollution maps published by Defra¹⁴. These cover the whole of the UK on a 1x1 km grid and cover each year until 2030.

Defra modelled data were used to predict future concentrations of NO₂, PM₁₀ and PM_{2.5} at the proposed development site, which provides an indication of the concentrations for the opening year of the proposed development and the predicted trend in background pollutants over time.

Predictions of total pollutant concentrations include contributions from local emissions sources (such as roads, chimney stacks, etc.) and local background concentrations.

3.1.2 Receptors

Human Receptors

The AQS objectives only apply where members of the public are likely to be regularly present for the averaging time of the objective. The IAQM guidance (2014) states that the annual mean objectives apply to all locations where members of the public might be regularly exposed. Defra technical guidance note TG22¹⁵ provides the following examples of where annual mean AQS objectives should apply:

- residential properties;
- schools;
- hospitals; and
- care homes.

The 24-hour mean objective applies to all locations where the annual mean objective would apply, together with hotels and gardens of residential properties.

¹⁴ Department for Environment, Food and Rural Affairs. (Defra). 2021. Background mapping for local authorities. <https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2021> (Accessed 15/12/25)

¹⁵ Defra. 2022. Local Air Quality Management. Technical Guidance TG22



Annual mean NO₂ concentrations over 60 µg/m³ are used as an indication of potential exceedances of the 1-hour mean NO₂ objective.

Online mapping and aerial photograph resources were used to identify existing receptors.

There will be new residential receptors, particularly vulnerable to areas of poor air quality, associated with the proposed development. Therefore, introduced receptors as well as existing receptors are relevant to the assessment.

Ecological Receptors

There is one ecological receptor, Newlane Wood, within 50m of the site access road; therefore, impacts on ecology will require consideration as a part of the construction phase assessment.

3.2 Assessing Impacts of the Construction Phase

There is the potential for fugitive dust emissions to occur during the construction-phase activities. As there are human within 50 m of potential construction dust sources, human health impacts, dust soiling and ecological impacts will require assessment.

The construction details are not currently available to inform an accurate dust risk assessment, therefore, it is proposed that an assessment of dust emissions from construction, assessed in accordance with the IAQM document 'Guidance on the Assessment of Dust from Demolition and Construction' is conditioned as part of the planning consent and carried out once information is available.

3.3 Assessing Impacts of the Operational Phase

The IAQM and EPUK guidance provides criteria for establishing whether a development will require an air quality assessment and, if so, what level of assessment. The criteria are set out in a two-stage approach:

To meet the criteria in Stage 1, the development must have:

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

This must be combined with any of the following:

- more than 10 parking spaces within the development; or
- the development has a centralised energy facility or combustion process.

The indicative Stage 2 criteria for requiring a detailed modelling assessment are:

- A change of LDV flows of:- more than 100 AADT within or adjacent to an AQMA- more than 500 AADT elsewhere.
- A change of HDV flows of:- more than 25 AADT within or adjacent to an AQMA - more than 100 AADT elsewhere.



- Where the change is 5m or more and the road is within an AQMA.
- Where a junction is added or removed close to existing receptors
- Where one or more substantial combustion processes, where there is a risk of impacts at relevant receptors.

The proposed development meets the Stage 1 criteria for requiring an air quality assessment. The proposed development will not introduce more than 500 AADT flows or more than 100 AADT HDV flows. It does not meet indicative Stage 2 criteria, so detailed assessment of road traffic has been scoped out. A qualitative assessment has been undertaken.

3.4 Emissions Mitigation Assessment

The purpose of this assessment is to quantify the health damage value associated with transport emissions from the proposed development. Transport emissions from the proposed development were estimated using Defra's Emissions Factor Toolkit¹⁶, which were then used to estimate the associated health damage cost using Defra's damage cost toolkit¹⁷.

The Sussex guidance provides a method for generating a development specific damage cost;

1. identify the trips/annum generated by the proposed development (this information will be available in the transport assessment, transport statement or TRICS database);
2. assume an average distance travelled of 10km/trip;
3. calculate the emissions of NO_x and PM_{2.5} (tonnes/annum) using the Emissions Factor Toolkit, and an assumption of an average speed of 50Km/H;
4. look-up the latest HM Treasury and Defra IGCB damage costs and multiply the outputs from 3. above to provide a value of the emissions health damage, for each pollutant;
5. quantify emissions over a five-year period; and
6. sum the NO_x and PM_{2.5} costs to provide a total health damage value.

¹⁶ Defra, 2025. EFT v13.1. Available at: <https://laqm.defra.gov.uk/air-quality/air-quality-assessment/emissions-factors-toolkit/>. Accessed 14/12/2025.

¹⁷ Defra, 2023. Air quality appraisal: Damage costs toolkit. February 2023. Available at <https://www.gov.uk/government/publications/assess-the-impact-of-air-quality>. Accessed 15/15/2024.

4 BASELINE CONDITIONS

The site is on the edge of an existing settlement. Worthing Road is situated approximately 140m to the east of the closest proposed residential dwelling.

4.1 Air Quality Management Areas

Two AQMAs have been declared in the district; in the village of Cowfold and the town centre of Storrington, both for the exceedances of the annual mean objective for NO₂.

The proposed development site does not sit within or near either of the declared AQMAs.

4.2 Local Air Quality Monitoring

Data were taken from HDC's 2025 air quality annual status report¹⁸.

HDC operates three automatic monitoring stations and measures NO₂ using passive diffusion tubes. The closest automatic roadside monitoring location (HO2) is located in Horsham, c. 2.8km northeast of the proposed development. PM_{2.5} was not monitored in the district, but estimated using the PM₁₀ results.

HDC undertook nitrogen dioxide monitoring across 47 diffusion tube sites during 2024.

The diffusion tube nearest to the site (Southwater 2) is located on the road adjoining the proposed site access, Worthing Road. It is situated in the village of Southwater, c 1.5km south of the site. It is located 1.5m from the kerbside. This diffusion tube has results for 2024 only, therefore, the next closest diffusion monitoring site (Southwater 1) which has results for all years, apart from 2024, has been presented.

The diffusion tube (Horsham 8N) is located c. 2.16km northeast of the site, and 1.8m from the kerbside of Worthing Road.

The closest NO₂ urban background monitoring location (3N) is in Horsham, c. 2.3km north of the site.

The results are summarised in Table 4.1 and the monitoring locations are shown in Figure A3 of Appendix A.

¹⁸ HDC 2025 Air Quality Annual Status Report. July 2025.

Site ID	Easting, Northing	Site Type	Annual Mean Concentration ($\mu\text{g}/\text{m}^3$)				
			2020	2021	2022	2023	2024
HO2	517485, 130590	Roadside (Automatic)	18.8	21.1	17.7	16.2	15.7
HO5	521356, 122553	Roadside (Automatic)	23.6	20.3	21.0	24.6	16.2
Southwater 2	515746, 127430	Roadside	-	-	-	-	13.5
Southwater 1	515639, 126599	Roadside	21.2	21.7	19.4	19.0	-
Horsham 8N	516647, 130221	Roadside	19.1	20.7	19.9	18.7	13.4*
3N	516010, 130484	Urban Background	9.5	9.9	8.8	7.6	7.2

TABLE 4.1: SUMMARY OF ANNUAL MEAN NO₂ MONITORING

Notes:

Exceedances of the NO₂ annual mean AQS objective of 40 $\mu\text{g}/\text{m}^3$ are shown in bold.

NO₂ annual means in excess of 60 $\mu\text{g}/\text{m}^3$, indicating a potential exceedance of the NO₂ hourly mean AQS objective are shown in bold and underlined.

* The results at Horsham 8N were lower than expected due to roadworks at the beginning of 2024. The road was shut so with fewer vehicles using the road during this period, traffic-related pollution was temporarily reduced. As a result, the NO₂ levels recorded at this site may appear lower than usual for those months, which could have slightly lowered the overall annual average.

Site ID	Easting, Northing	Site Type	Annual Mean Concentration ($\mu\text{g}/\text{m}^3$)				
			2020	2021	2022	2023	2024
HO2	517485, 130590	Roadside Automatic	15.7	17.5	19.3	20.5	16.1

TABLE 4.2: SUMMARY OF ANNUAL MEAN PM₁₀ MONITORING

Site ID	Easting, Northing	Site Type	Annual Mean Concentration ($\mu\text{g}/\text{m}^3$)				
			2020	2021	2022	2023	2024
HO2	517485, 130590	Roadside Automatic	11.0	12.3	13.1	14.6	10.1

TABLE 4.3: SUMMARY OF ANNUAL MEAN PM_{2.5} MONITORING

Notes:

PM_{2.5} results were not measured, but estimated from the PM₁₀ results by HDC

Monitoring data between 2020 and 2024, presented in Table 4.1, show that the long-term roadside and urban background sites remained within the AQS objective of 40 $\mu\text{g}/\text{m}^3$ for annual mean NO₂. The monitoring results tended to decrease between 2020 and 2024.



The measured diffusion tube monitoring concentrations show that the NO₂ concentrations at the proposed development and nearby existing receptors are likely to be well within the annual mean AQS objective of 40 µg/m³.

PM₁₀ concentrations showed no discernible trend. The measured monitoring concentrations show that the PM₁₀ concentrations are likely to be well within the annual mean AQS objectives of 40 µg/m³.

The predicted concentrations show that the PM_{2.5} concentrations are likely to be well within the annual mean AQS objectives of 20 µg/m³.

TG22 states that when the annual mean NO₂ concentration at diffusion tube locations is less than 60 µg/m³, the short term (one-hour) objective for NO₂ is unlikely to be exceeded. The data in Table 4.1 demonstrate that the one-hour objective is not likely to have been breached between 2020 and 2024.

Reductions in NO₂ levels in 2020 and 2021 are likely to have been caused by a combination of lower traffic levels during the Covid-19 pandemic and lower vehicle emissions from tighter vehicle emissions standards.

Over the next few years, Euro 6/VI vehicles will dominate the fleet and will lead to lower NO_x emissions. This will lead to lower future baseline NO₂ levels. Future baseline PM₁₀ and PM_{2.5} levels are also expected to be lower.

4.3 Background Concentrations

Estimated background concentrations at the proposed development have been determined for the baseline year of 2025. The year 2028 has been assessed using Defra's background maps¹⁹, representing the earliest assumed operational year of the proposed development. Concentrations of NO₂, PM₁₀ and PM_{2.5} have been used for the grid square centred on 515500, 128500, which overlays the site. The background concentrations are set out in Table 4.4. The background concentrations are all within the AQS objectives in 2025 and predict a downward trend for all pollutants through to 2028.

Site ID	2025	2028
NO ₂ (µg/m ³)	7.7	7.0
PM ₁₀ (µg/m ³)	10.4	10.1
PM _{2.5} (µg/m ³)	6.2	6.0

TABLE 4.4: PREDICTED ANNUAL MEAN BACKGROUND POLLUTANT CONCENTRATIONS

¹⁹ Department for Environment, Food and Rural Affairs. (Defra). 2021. Background mapping for local authorities. [online] <https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2021>. Accessed 14/12/2025

4.4 Summary

The proposed development will be introducing residential receptors to the area. The closest proposed residential property is c. 140m west of Worthing Road and does not sit within or near an AQMA. Annual mean NO₂ concentrations measured at the diffusion tube monitoring locations nearby to the site show that annual mean NO₂ concentrations are well within the AQS objective in all reported years. NO₂, PM₁₀ and PM_{2.5} concentrations tended to decrease between 2020 and 2024, driven by tighter vehicle emissions standards, although reductions in 2020 and 2021 are likely to have been made greater by lower traffic levels during the Covid-19 pandemic. The PM₁₀ concentrations measured at the automatic monitoring station are within the AQS objective in all reported years. The PM_{2.5} concentrations calculated from the automatic PM₁₀ monitoring results are within the AQS objective in all reported years.

Annual mean NO₂ concentrations recorded at the passive roadside diffusion tube monitoring locations are well below 60 µg/m³, which indicates the hourly mean NO₂ objective is unlikely to be breached. Mean hourly NO₂ concentrations recorded at the continuous roadside and urban background monitors did not exceed the 200 µg/m³ objective in all reported years.

Modelled Defra background annual mean pollutant concentrations at the 1km x 1km grid square overlaying the site predict that NO₂, PM₁₀ and PM_{2.5} pollutants currently meet the AQS objective and show a downward trend throughout future years.

Overall, the baseline data indicates that annual NO₂, PM₁₀ and PM_{2.5} objectives are currently being met at the proposed development site and will continue to do so.



5 OPERATIONAL PHASE IMPACT ASSESSMENT

The proposed development will comprise 23 no. residential properties, with 46 no. allocated parking spaces (excluding garage parking) and five visitor spaces. There will be one electric vehicle (EV) charging point allocated to each unit.

5.1 Traffic

The traffic data were screened against EPUK/ IAQM criteria. The transport consultant predicts a vehicle trip generation of 93 no. two-way light-duty vehicle (LDV) AADT flows and 8 no. HDV two-way heavy-duty vehicle (HDV) AADT flows associated with the residential development. Therefore, traffic associated with the proposed development does not meet indicative criteria in IAQM guidance for detailed assessment. Traffic is expected to have a negligible impact on local air quality when considered in accordance with IAQM guidance.

5.2 Energy Plant

The proposed development will use a renewable energy supply in the form of air source heat pumps (ASHPs) and solar panels. Therefore, no further assessment of energy plant is required and impacts from energy plant will be negligible in line with IAQM guidance.

6 EMISSIONS MITIGATION ASSESSMENT

In line with the Air Quality and Emissions Mitigation guidance for Sussex, a damage cost assessment was carried out using Defra's Damage Cost Appraisal tool. The assessment covers the five-year period from the earliest proposed opening year of the proposed development, of 2028. Annual emissions of NO_x and PM_{2.5} were calculated, from which damage costs were quantified.

The development traffic input data used in Defra's Emissions Factors Toolkit (v13.1)²⁰ is presented in Table 6.1 and the results are presented below in Table 6.2.

Road Type	AADT Traffic Flow	%HDV	Speed (kph)	No. of Hours	Link Length (km)	Flow Direction
Urban (not London)	101	8	50	24	10	Two-way traffic

TABLE 6.1: TRAFFIC INPUT DATA

Year	2028	2029	2030	2031	2032	Total Cost (Central Present Value)
Central Value NO _x	£209	£181	£157	£137	£120	£804
Central Value PM _{2.5}	£180	£175	£170	£165	£162	£853
Total						£1,657

TABLE 6.2: DAMAGE COST APPRAISAL

The damage cost appraisal shows that the indicative cost associated with five years of operation and the associated increase in emissions would result in a cost of £1,657. This number provides a basis for defining the minimum financial commitment required for offsetting emissions by implementing measures to reduce transport emissions.

The Sussex guidance states that *'the provision of EV charging points recommended by existing parking standards are in addition to the mitigation options identified and costed in an air quality mitigation statement'*.

Approved Document S²¹ of the Building Regulations requires new residential dwellings to have access to an EV charging point per dwelling. The development proposals meet this requirement. However, in line with the Sussex guidance, as these are not in addition to current requirements they are not counted towards offsetting the mitigation target.

²⁰ Defra, 2025. Emissions Factors Toolkit (EFT) v13.1, March 2025. Available at <https://laqm.defra.gov.uk/air-quality/air-quality-assessment/emissions-factors-toolkit/>. Accessed 14/12/2025.

²¹ HM Government, The Building Regulations 2010. Approved Document S. Infrastructure for the charging of electric vehicles, 2021.



One cycle storage shed per dwelling is included in the proposals. This has been estimated at £875 per storage unit²².

Mitigation	Mitigation Target = £1,657		
	£/unit	No. or m ²	Value (£)
Cycle stores	875	23	20,125
	Total Value		20,125

TABLE 6.3: EMISSIONS MITIGATION ASSESSMENT

Mitigation	Mitigation Target = £1,657		
	£/unit	No. or m ²	Value (£)
Cycle stores	875	23	20,125
	Total Value		20,125

Table 6.3 shows that the value of mitigation measures included in the design proposals far outweighs the mitigation target of £1,657. Designed-in mitigation meets and exceeds requirements in guidance.

²² Dunster House, 2025. Available at: https://dunsterhouse.co.uk/garden-sheds/bike-sheds/overlord-modular-bike-shed-w2-4m-x-d1-2m?infinity=ict2~net~gaw~cmp~614051898~ag~1140195326295123~ar~kw~mt~e~acr~6854345728&msclkid=95ff6268f8ea11783f3c0b562a0339b8&utm_source=bing&utm_medium=cpc&utm_campaign=Shopping%20%7C%20Catch%20All&utm_term=4574861749616886&utm_content=Shopping%20%7C%20Catch%20All%20%7C%20Generic. Accessed: 14/12/2025

7 CONCLUSIONS

The proposed development will introduce traffic emissions to the area. Baseline conditions indicate that NO₂, PM₁₀ and PM_{2.5} objectives are currently being met and will continue to be met in the earliest proposed operational year of 2028.

The construction works have the potential to create dust. It will therefore be necessary to adopt mitigation measures to minimise dust emissions. With the implementation of mitigation measures, the dust impacts from the construction phase will be negligible. As construction phase details are unavailable, it is proposed a dust risk assessment and management plan is conditioned as part of the planning consent.

The traffic associated with the operation of the proposed development is predicted to have a negligible impact on local air quality. The energy plant associated with the proposed development will have a negligible impact on local air quality.

The value of designed-in mitigation measures exceeds requirements in the Air Quality and Emissions Mitigation guidance for Sussex.

Appendix A: Figures



FIGURE A1: PROPOSED SITE BOUNDARY



FIGURE A2: PROPOSED SITE PLAN

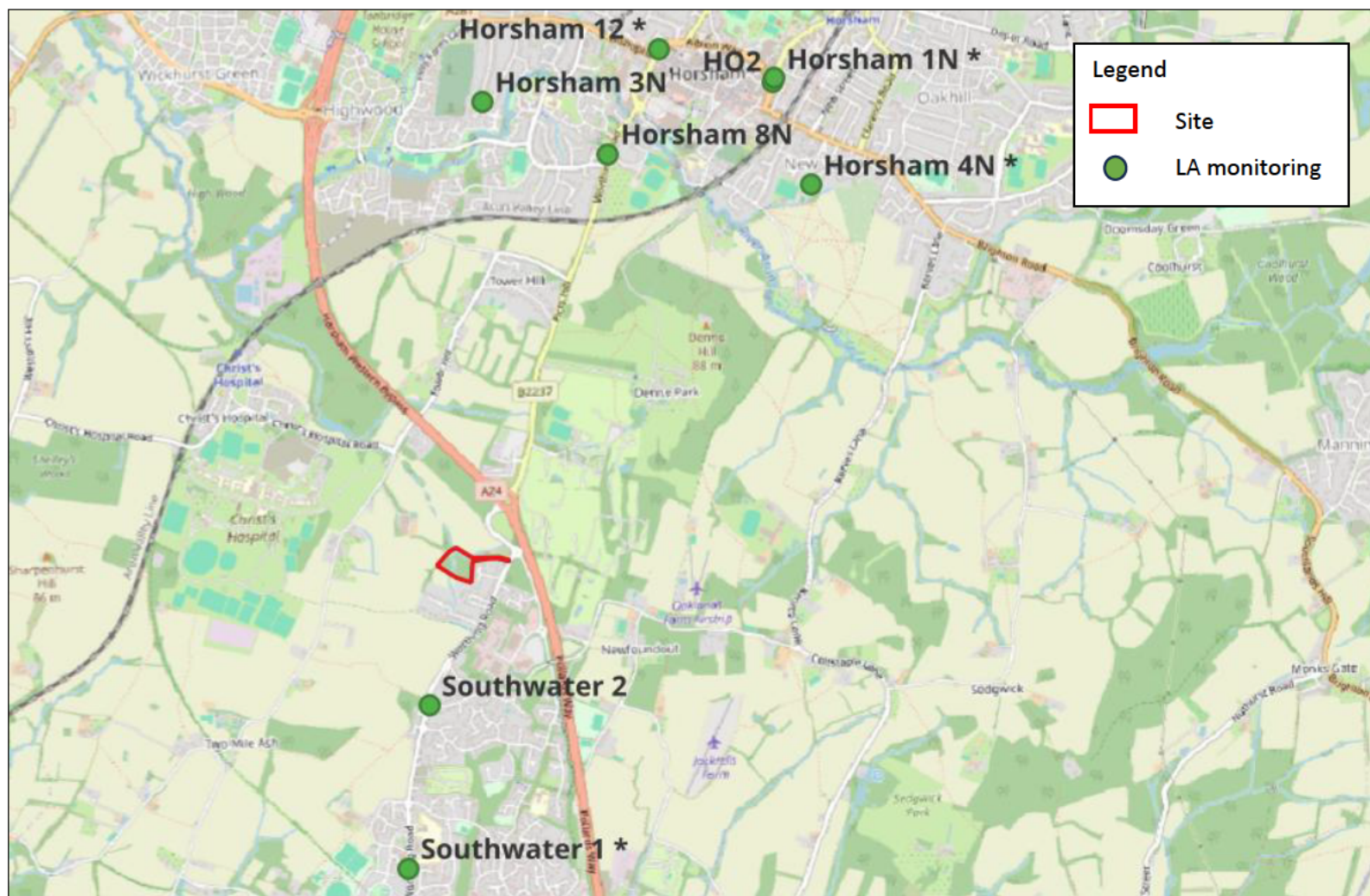


FIGURE A3: SITE LOCATION AND LA MONITORING LOCATION