



Air Quality and Odour Context Report for Pre-Application

Land West of Woodgate
Nurseries, Lidsey Road,
Woodgate

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Introduction

Phlorum Limited has been commissioned by Hanbury Properties Limited to prepare a short report, outlining the proposed scope of air quality assessment and summarising the status of odour assessment work undertaken at the application site, in support of pre-application discussions with Arun District Council (ADC).

The application site is located on land to the west of Woodgate Nurseries, Lidsey Road, Woodgate, and east of Lidsey Landfill. It is understood that the proposed development is to comprise the construction of approximately 220 homes, with associated access and landscaping. The proposed Illustrative Masterplan is provided in Figure 1.

Air Quality

The focus of the air quality assessment will be to assess the suitability of the site, in air quality terms, for the introduction of new, sensitive receptors, as well as to assess the potential for traffic generated by the proposed development to impact local air quality.

The assessment will also consider the potential for dust nuisance and soiling impacts to occur during the construction of the proposed development, offering recommendations for suitable mitigation to reduce the possibility of such impacts occurring.

Local Air Quality Context

The application site is located in a largely rural area, where air quality might reasonably be expected to be below relevant UK Air Quality Standard (AQS) concentrations. ADC has not declared an Air Quality Management Area (AQMA) within their authoritative boundary.

The main sources of air pollution in the vicinity of the application site are vehicles travelling on the local road network. Lidsey Landfill is an additional source of local air pollution, with gas from the site collected and combusted within three generators to produce electricity, operated by Infinis Energy.

An assessment of baseline air quality conditions will be carried out in the air quality report for the planning submission. This will include a review of relevant national and local air quality policy, local guidance, recent Local Air Quality Management (LAQM) annual status reports and air quality action plans. Appropriate existing local monitoring data and estimated background concentrations from the UK Air Information Resource (UK-AIR) website¹ will be collated and discussed.

Scope of Air Quality Assessment

Construction Phase Dust Risk Assessment

A construction dust risk assessment will be undertaken following the best practice IAQM construction guidance². With regard to emissions of dust from the construction phase, there is the potential for impacts where:

- human receptors are located within 250m of the site boundary, or within 50m of routes used by construction vehicles up to 250m from the site entrance(s); and

¹ Defra: UK-AIR. www.uk-air.defra.gov.uk

² IAQM. (2024). Guidance on the assessment of dust from demolition and construction.

- sensitive ecological receptors are located within 50m of the site boundary or 50m of routes used by construction vehicles, up to 250m from the site entrance(s).

While the application site is currently understood to be well distanced from any nearby human or ecological receptors, the site is adjacent to two committed residential developments (Refs: AL/129/21/OUT and AL/70/23/OUT) and a further residential planning application which remains undecided (Ref: AL/89/24/OUT). All three sites will be given appropriate consideration within the construction dust risk assessment.

Once the risk of construction dust effects has been determined, an appropriate level of dust mitigation measures shall be recommended, in line with relevant guidance². These measures will be set out in the report and can be secured within a Construction Environmental Management Plan (CEMP) via Planning Condition.

Operational Phase Air Quality Impacts

Vehicle emissions will arise from the combustion of fossil fuels in vehicle engines and their subsequent release to atmosphere via tailpipe exhausts. The most significant pollutants released by cars and other vehicles are nitrogen dioxide/oxides of nitrogen (NO₂/NO_x) and particulate matter (PM₁₀ and PM_{2.5}). Vehicle movements will be the primary source of air pollutant emissions associated with this proposed residential development.

To determine the effects on local air pollution concentrations from the operation of the proposed development, emissions from local roads will be assessed using a detailed atmospheric dispersion model.

The model used in this assessment will be ADMS-Roads (version 5.1), which is produced by Cambridge Environmental Research Consultants Limited (CERC) and has been validated and approved by Defra for use as an assessment tool for calculating the dispersion of pollutants from traffic on UK roads. The latest Defra Emissions Factor Toolkit (EFT) version 13.1 will be used to estimate vehicle emissions within the model.

Discrete model receptors will be positioned at the façades of predominantly existing residential dwellings (i.e. local sensitive human receptors), closest to the main pollution sources (i.e. local roads). The model domain will comprise all road links where the EPUK & IAQM screening criteria³ (500 Light-Duty Vehicles (LDVs)/ 100 Heavy-Duty Vehicles (HDVs)) are exceeded. The significance criteria for the ADMS-Roads (modelling) assessment are derived from the EPUK & IAQM guidance³.

Irrespective of whether the impact assessment determines the proposed development's air quality effects to be not significant, and noting that ADC is a member of the Sussex-Air Partnership, an Emissions Mitigation Assessment will still be undertaken to determine the associated 'Damage Cost' for the proposed development; in line with Sussex-Air guidance⁴. The 'Damage Cost' will subsequently be required to be offset through the adoption of appropriate mitigation measures.

The Suitability of the Site

It is necessary to consider whether the application site will be suitable for the introduction of residential receptors, from an air quality perspective. The key sources of air pollution

³ EPUK & IAQM. (2017). Land-Use Planning & Development Control: Planning for Air Quality

⁴ Sussex Air Partnership. (2021). *Air Quality and Emissions Mitigation Guidance for Sussex*.

locally are vehicles travelling on the local road network and the combusted gas at the adjacent landfill.

As all proposed residences will be located over 300m away from the nearest major road, Lidsey Road, it is reasonable to anticipate that the local road network will not significantly contribute to air pollution at proposed sensitive receptors.

Air pollutant emissions from the landfill gas generators, which are located over 100m to the southwest of the application site, were assessed by Phlorum^{5,6} for the adjacent application (Ref: AL/70/23/OUT). The assessment included pollutant concentration contour plots which show that neither NO₂ nor sulphur dioxide (SO₂) emissions from the generators will cause exceedances of any UK AQS within this application site.

On this basis, the application site is likely to be considered suitable for the introduction of residential receptors, from an air quality perspective. This will be discussed in the air quality assessment.

Odour

Odour Context

Lidsey Landfill is filled and capped, and odours are controlled through an Odour Management Plan (OMP) associated with the landfill's Environmental Permit⁷. The permit states the following, with respect to odours:

"Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour."

Consequently, it is reasonable to assume that the landfill site is unlikely to frequently generate significant odours beyond its boundary. Nonetheless, given the application site's proximity, it is important to consider whether any odour emissions from the landfill site could affect the amenity of future occupants at the proposed development.

Completed Odour Studies

An odour assessment was undertaken as part of the adjacent outline application (Ref: AL/70/23/OUT)⁸. The assessment comprised three odour surveys (sniff tests) between May and June 2023, with the assessor following the perimeter and vicinity of the landfill. The methodology adhered to that prescribed in the Institute of Air Quality Management (IAQM) guidance⁹. During two of these surveys, the assessor detected strong odours at the perimeter near the gas-fuelled generators. The odours were described as either sulphurous or similar to 'household gas'.

⁵ Phlorum (2023). Air Quality Assessment Ref: 10946B (AQ) v1.

⁶ Phlorum (2023). Air Quality Assessment Addendum Ref: 10946F (AQ Addendum) v1.

⁷ Environment Agency (2018). Lidsey Landfill Site. Permit Number EPR/CP3735SM.

⁸ Phlorum (2023). Odour Assessment Ref: 10946 (OD) v2.

⁹ IAQM (2018). Guidance on the assessment of odour for planning V1.1. Available at <https://www.iaqm.co.uk/text/guidance/odour-guidance-2014.pdf>

In the context of this proposed development, none of these odours were detected within the application site. However, to increase the robustness of the 2023 odour assessment findings, a further three sniff tests were conducted in May 2025.

The assessors again detected no odours within the application site. However, strong, earthy and sour odours were detected up to 130m downwind of the entrance to the landfill site, when assessing in the field directly south of the application site. Odours at this distance were very infrequent, so were considered to pose a 'slightly adverse' odour risk to residential receptors, which is not significant, according to IAQM odour guidance⁹. 'Moderately adverse' (potentially significant) odours were detected up to 70m downwind of the landfill site.

The exact source of the odours was unclear, but they were exclusively detected downwind of either the landfill site's entrance, or the landfill's gas generators to the south of the site entrance. Based on the findings of all six sniff tests undertaken in 2023 and 2025, Phlorum has recommended that no proposed highly sensitive land use (i.e. residences) be located within 70m of either the landfill's site entrance or its gas generators. The applicant has adhered to this recommendation, as shown in the Illustrative Masterplan (Figure 1). This should reduce the risk of future occupants at the application site detecting odours which are any worse than 'slightly adverse', which is not significant, according to IAQM odour guidance⁹.

Figure 2 shows the *Small* and *Medium* IAQM *Odour Exposure* scores in the vicinity of the Landfill site (*Negligible* odour exposure scores are not shown). According to IAQM guidance, scores of *Medium* can be considered significantly adverse.

Conclusions

An Air Quality Assessment shall be conducted to determine the impacts of the development during its construction and operation. Based on the Air Quality Assessment findings of the adjacent application sites, it is considered likely that air quality will not pose a constraint on the planning process, and that there will be no cumulative impacts with the aforementioned neighbouring developments.

Phlorum believes the odour assessment work undertaken to date is sufficient enough to confidently conclude that landfill odour emissions will not significantly impact proposed future amenity at the site. Full methodologies and results of the work undertaken to date will be provided in detail within an Odour Assessment report, which will be submitted with the associated planning application, separate to the Air Quality Assessment.



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Figure 2: IAQM Odour Exposure Scores

Contains Google Eath Imagery © Airbus (2025).

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