



Case Study

Redmore Environmental



Overview

How Redmore Environmental, a specialist air quality consultancy providing atmospheric emissions support throughout the UK, installed EarthSense's Zephyr® air quality monitors to deliver a detailed air quality assessment of the potential site of a new bus station in Worthing, Sussex.

The Challenge

Redmore provided multi-stage support throughout the planning process. The initial involvement was to produce a detailed Air Quality Assessment, using EarthSense Zephyrs to establish baseline conditions on site and to assess potential impacts at nearby sensitive locations.

Following a successful submission, Worthing Borough Council approved the application with an operational lifetime of three years. At the end of this period, a further application was submitted to secure permanent use of the bus depot.

At this stage, concerns were raised from local residents about existing air pollution levels at the site, which could be adversely affected by the continued operation of the bus depot. Worthing Borough Council subsequently requested that Air Quality Monitoring be undertaken to

At this stage, Redmore Environmental was re-engaged to provide technical support, liaise with the council, and develop a programme of monitoring to characterise air quality conditions at the site under existing operations.

An Air Quality Assessment was initially undertaken to establish baseline conditions and assess potential impacts at nearby sensitive locations.

This included analysis of impacts from fugitive dust emissions during construction and road traffic exhaust emissions associated with vehicles travelling to and from the site, as well as within the depot itself, during operation.

Air Quality Monitoring Programme

Worthing Borough Council advised that reliance on the original assessment would be insufficient to support the new application and requested on-site Air Quality Monitoring.

In response, Redmore Environmental designed and delivered a three-month programme to investigate concentrations of Particulate Matter (PM) and Nitrogen Dioxide (NO₂) at the adjacent residential properties.

This involved:

- Installation of the EarthSense real-time air quality monitor, considering meteorological conditions and receptor proximity
- Measurement of PM₁₀, PM_{2.5} and NO₂ concentrations
- Implementation of trigger alerts to notify the site of any short-term exceedances
- Preparation of monthly Air Quality Monitoring reports

Upon completion, results were annualised in line with DEFRA Guidance for direct comparison with the relevant Air Quality Objectives and Concentration Target.

The analysis confirmed that annual mean NO₂, PM₁₀ and PM_{2.5} concentrations, as well as short-term one-hour mean NO₂ and 24-hour mean PM₁₀ concentrations, were all below the relevant standards at the site.

Outcomes

The construction dust assessment considered impacts associated with earthworks, construction and track out using the relevant Institute of Air Quality Management (IAQM) guidance 'Assessment of dust from demolition and construction 2024 V2.2'.

It concluded that use of good practice control measures would provide suitable mitigation for the development and reduce potential impacts to an acceptable level.

Dispersion modelling was carried out using ADMS-Roads software to predict pollutant concentrations as a result of vehicle emissions both with and without the development in place. The results indicated that air quality impacts were not predicted to be significant at any sensitive location in the vicinity of the site.

As such, the site was considered to be suitable for the proposed end-use from an air quality perspective and the application was subsequently approved by Worthing Borough Council with an operational lifetime of three years.

The updated monitoring data and supporting technical report were submitted alongside the full planning application (reference: AWDM/0068/25) for permanent use of the depot.

The Environmental Health Officer at Worthing Borough Council confirmed that measured concentrations were consistent with both local reference data and the original Air Quality Assessment, reinforcing the conclusion that air quality objectives and target values would not be exceeded.

Long-term Benefits

Following the temporary period, a new application was submitted to authorise permanent use of the bus depot. During the renewed planning process, Worthing Borough Council received representations from local residents raising concerns over existing air pollution levels at the site, which could be adversely affected by the continued operation of the bus depot.

Redmore Environmental was therefore re-engaged to consult with the Local Planning Authority and determine a suitable approach to characterise air quality conditions at the site under existing operations.

Following review at a recent planning committee, Redmore was delighted to hear that the application for permanent use of the bus depot has now been formally granted.

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