



**Fieldfayre
The Street
Swallowfield**

Plant Noise Assessment Report

30 September 2025

For
Swallowfield Parish Council

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SUMMARY

A new condenser unit is proposed at Fieldfayre on The Street in Swallowfield.

The local authority, Wokingham Borough Council has external noise requirements for new items of building services plant, requiring a background noise survey and plant noise assessment to be undertaken.

A noise survey has been undertaken by **auricl** to determine background noise levels that are representative of the nearest noise sensitive properties.

External plant noise limits have been proposed, to be achieved at the nearest residential properties, based on the noise survey data and the Wokingham Borough Council requirements.

A noise assessment has been undertaken to predict noise emissions associated with the proposed plant at the nearest noise sensitive properties.

The predicted noise level at the nearest noise sensitive window correlates with a “*low noise impact*” during daytime and night-time periods, in accordance with the guidance given in BS 4142: 2014+A1: 2019.

Project Number	14957	Issue Date	30 September 2025
Document Reference	R/PNA/1/250930	Version	01
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1.0 Introduction

A new condenser unit is proposed at Fieldfayre on The Street in Swallowfield. The local authority, Wokingham Borough Council has external noise requirements for new items of building services plant, requiring a background noise survey and plant noise assessment to be undertaken.

auricl has been instructed to undertake a background noise survey and acoustic assessment of noise emissions from the proposed plant, in relation to the Wokingham Borough Council requirements.

This report presents the methodology and results of a noise survey to determine background noise levels that are representative of the nearest noise sensitive properties, as well as an acoustic assessment of the plant to address the Wokingham Borough Council requirements.

2.0 Description of Site and Proposals

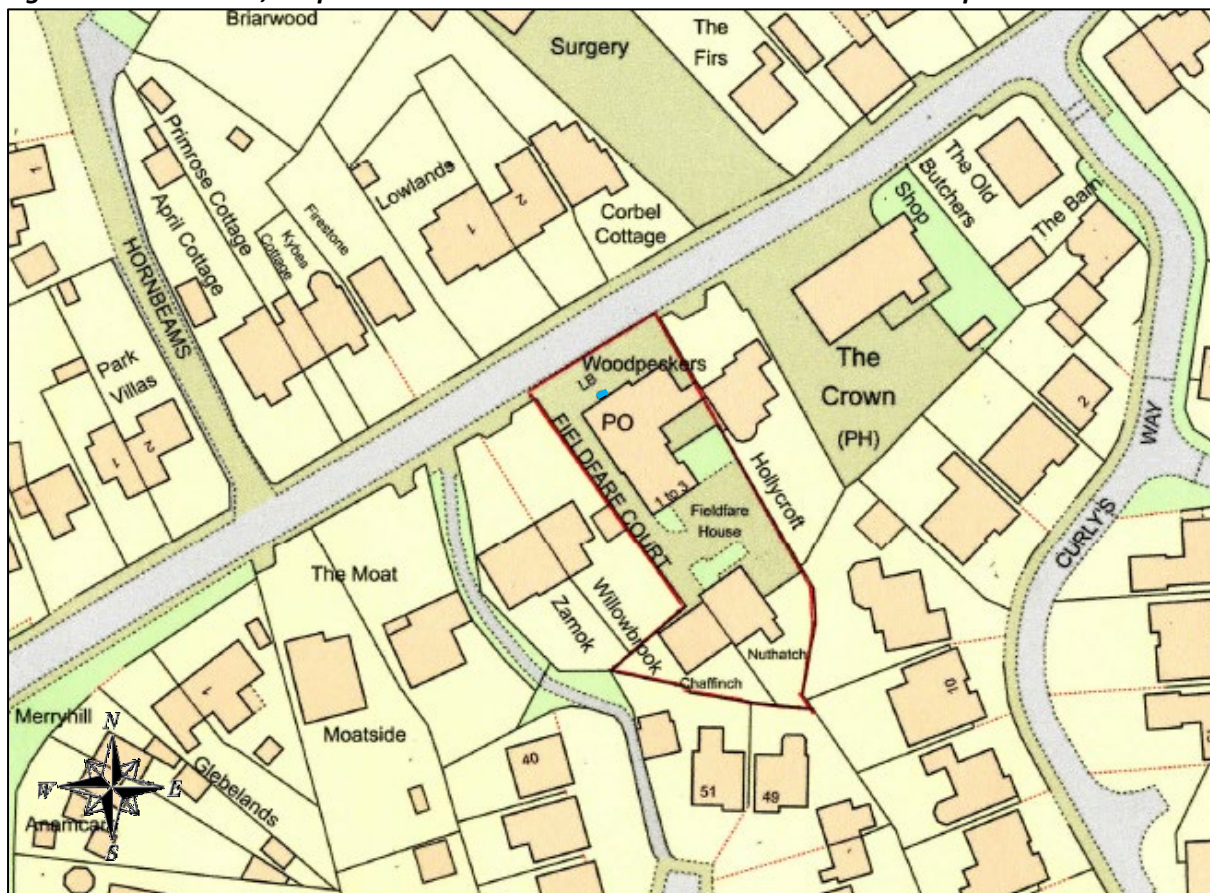
The site is located on the south-eastern side of The Street in Swallowfield and consists of a mixed-use building with a post office at ground floor level, a flat at first floor level and an adjoining house.

A condenser unit in an acoustic enclosure is proposed at ground floor level on the north-western side of the building. The condenser unit has the potential to operate during daytime and night-time periods

The nearest noise sensitive properties to the proposed condenser units are noted to be the adjacent house and residential flat at first floor level, the nearest window of each being approximately 3m from the proposed condenser unit.

Figure 2.1 shows the approximate site extent in **red** and the proposed plant location in **blue**.

Figure 2.1 Site Extent, Proposed Plant Location and Nearest Noise Sensitive Properties



3.0 Wokingham Borough Council Requirements

We understand Wokingham Borough Council's plant noise requirements are as follows:

"Appendices 1/ Annex 2: Information on Noise from Difference Sources

Noise from industrial and commercial developments

12. The likelihood of complaints about noise from proposed development can be assessed using guidance in BS 4142. Tonal or impulsive characteristics of the noise are likely to increase the scope for complaints and this is taken into account by the "rating level" defined in BS 4142. The likelihood of complaints is indicated by the difference between the noise from the new development (expressed in terms of the rating level) and the existing background noise.

The Standard currently states that: "A difference of around 10 dB or higher indicates that complaints are likely. A difference of around 5 dB is of marginal significance." Since background noise levels vary throughout a 24-hour period it will usually be necessary to assess the acceptability of noise levels for separate periods (e.g. day and night) chosen to suit the hours of operation of the proposed development.

Similar considerations apply to developments that will emit significant noise at the weekend as well as during the week. This can be appropriate if the existing ambient background levels are already above the NOEL outlined above."

BS 4142: 2014+A1: 2019 "Methods for rating and assessing industrial and commercial sound" is the industry standard procedure for the measurement and rating of noise levels from industrial and commercial noise sources. A methodology for predicting the likelihood of adverse impact is provided in the document.

The rating level ($L_{A,r,Tr}$) is defined in BS 4142: 2014+A1: 2019 and is used to rate the industrial source (known as the specific noise source) at the assessment location. This level is obtained by adding a correction of between 0 and 6 dB, for tonal noise sources, and a correction of between 0 and 9 dB for impulsive sources. Additionally, corrections of 3 dB can be made for other sound characteristics and intermittency of the noise source.

The method for predicting the likelihood of complaints is based on differences between the rating level and the background $L_{A90,T}$ noise level. The standard advises that:

- a) *"Typically, the greater this difference, the greater the magnitude of the impact.*
- b) *A difference of around +10dB or more is likely to be an indication of a significant adverse impact, depending on the context.*
- c) *A difference of around +5 dB is likely to be an indication of an adverse impact, depending on context.*

The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact depending on the context."

We will therefore base our survey methodology and assessment on the above criteria.

4.0 Noise Survey Methodology

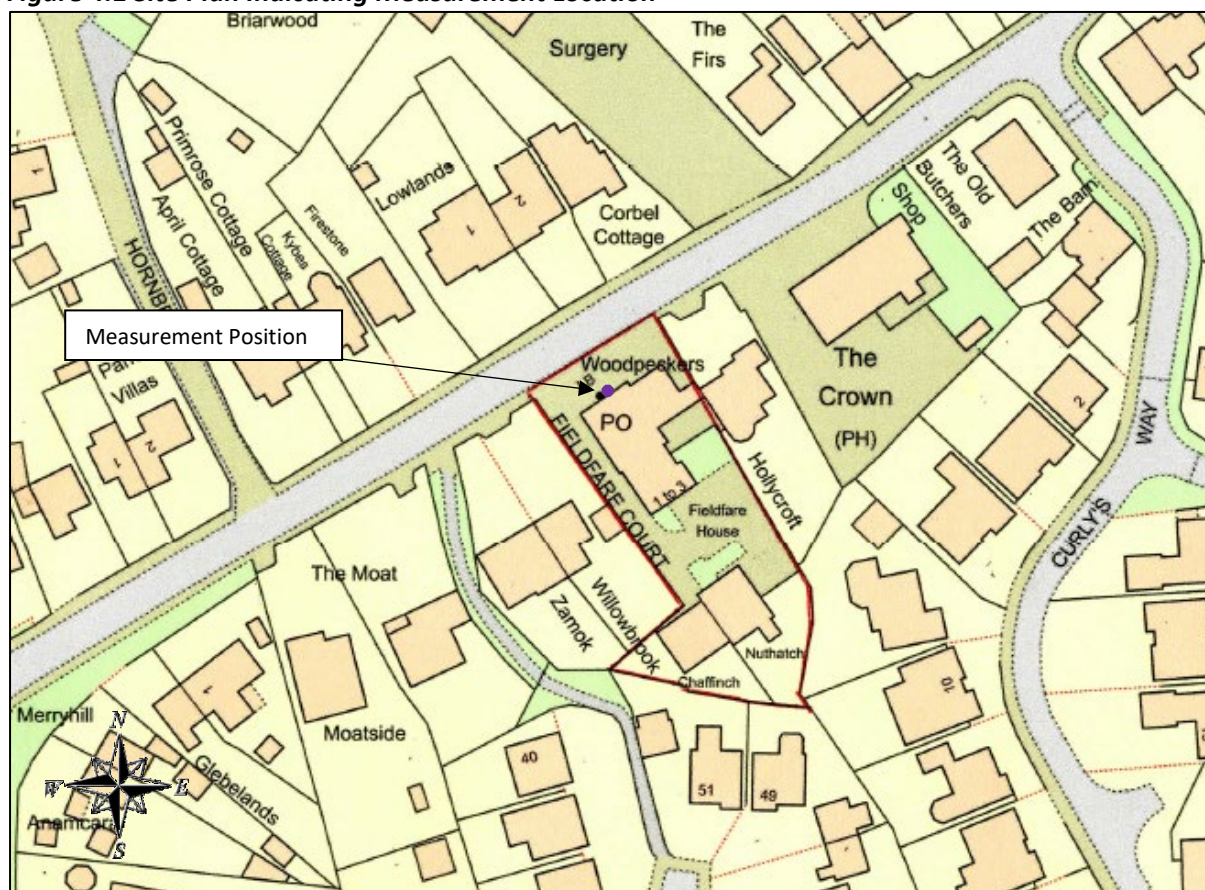
An unmanned environmental noise survey was undertaken at the site over a 4-day period between Thursday 11 September 2025 and Monday 15 September 2025, to assess existing background noise

levels at a position considered representative of the nearest noise sensitive properties to the proposed plant.

L_{Aeq} and L_{A90} sound pressure levels were measured throughout the noise survey over contiguous 15-minute intervals.

Noise levels were measured with the measurement microphone attached to a pole protruding from the north-western façade of the building, as indicated approximately in **purple** on Figure 4.1.

Figure 4.1 Site Plan Indicating Measurement Location



The equipment used for the noise survey is described in Table 4.1.

Table 4.1 Description of Equipment used for Noise Survey

Item	Make & Model	Serial Number
Type 1 sound level meter	Norsonic 140	1406016
Type 1 ½" microphone	Norsonic 1225	168116
Calibrator	01 dB CAL31	86020

The noise monitoring equipment was calibrated before and after the noise survey period. No significant change was found. Laboratory equipment calibration certificates can be provided upon request.

Due to the nature of the noise survey, i.e. unmanned, we are unable to comment on the weather conditions throughout the entire noise survey period. However, at the beginning of the survey period, there was noted to be minimal cloud and dry, still conditions. These conditions are understood to be representative of the majority of the survey period and are considered appropriate for undertaking environmental noise measurements.

5.0 Noise Survey Results

As the measurement position was located within 1m of an existing façade, the noise survey results have been converted to free-field levels by applying a correction of -3 dB, in accordance with BS 8233: 2014 and BS 4142: 2014+A1: 2019.

Appendix B presents a time history graph showing the L_{Aeq} and L_{A90} sound pressure levels measured throughout the noise survey (shown as 15-minute intervals).

The typical (modal) measured background noise level was **45 dB L_{A90} (1 hour)** during daytime periods (07:00 – 23:00 hours) and **37 dB L_{A90} (15 min)** during night-time periods (23:00 – 07:00 hours).

We would consider the measured levels to be reasonable, taking into account the location of the measurement position and the dominant nearby noise sources.

During both daytime and night-time survey periods the noise climate at the measurement position was noted to be dominated by occasional road traffic noise along The Street.

6.0 Plant Noise Emissions

This section presents our assessment and calculations of noise emissions from the proposed plant, in relation to the South Gloucestershire Council requirements.

6.1 Proposed Plant and Nearest Noise Sensitive Properties

The proposed condenser unit is a J&E Hall Model JEHR-0100 operating at a sound pressure level of 28 dBA at 10m according to the manufacturer's published data.

The unit is to be fitted in an Environ acoustic enclosure, capable of reducing the noise emissions to 35 dBA at 1m.

The nearest noise sensitive properties to the proposed condenser unit are understood to be the residential flat and the adjoining house, the nearest window of each being at a distance of approximately 3m.

The condenser unit is unlikely to be tonal or impulsive and is not expected to operate intermittently, therefore no unfavourable corrections will apply in the calculation.

6.2 Plant Noise Predictions

Our plant noise emission calculations are presented in Table 6.1.

Table 6.1 Plant Noise Calculations

Element	Level (L_{pA} dB)	
Individual Unit Sound Pressure Level L_{pA} at 1m	35	
Acoustic Reflections	+3	
Distance Attenuation	-10	
Predicted Sound Pressure Level at Nearest Noise Sensitive Window	28	
Typical Background Noise Level	45 Daytime	37 Night-time
Difference	-17 Daytime	-9 Night-time

It can be seen that the predicted noise level at the nearest noise sensitive window correlates with a “low noise impact” during daytime and night-time periods, in accordance with the guidance given in BS 4142: 2014+A1: 2019.

Appendix A – Acoustic Terminology

Parameter	Description
Decibel (dB)	A logarithmic scale representing the sound pressure or power level relative to the threshold of hearing (20×10^{-6} Pascals).
Sound Pressure Level (L_p)	The sound pressure level is the sound pressure fluctuation caused by vibrating objects relative to the threshold of hearing.
A-weighting (L_A or dBA)	The sound level in dB with a filter applied to increase certain frequencies and decrease others to correspond with the average human response to sound.
$L_{Aeq,T}$	The A-weighted equivalent continuous noise level over the time period T (typically T= 16 hours for daytime periods, T = 8 hours for night-time periods). This is the sound level that is equivalent to the average energy of noise recorded over a given period.
L_{A90} (15 min)	The noise level exceeded for 90% of the time (also referred to as the background noise level), measured over a 15 minute period

Appendix B – Time History Graph

