

Our Ref: Land to the north of Dalefield Way, Gravesend, Kent, DA12 2JH (west) -
Technical Note

Subject: Acoustic Barrier

Introduction

An Activity Noise Assessment was prepared for the site (25-15909 - Land North of Dalefield Way, Gravesend, Kent, DA12 2JH (West) - Activity Noise Assessment - Rev A), which found the rating noise levels to be 3 dB above the existing background noise levels.

The local authority has requested that a barrier be added around the south of the site to reduce the Noise Sensitive Receptors (NSRs) noise levels.

This technical note has been prepared to provide clarification on the expected acoustic benefit associated with the installation of a close-boarded timber fence along the site perimeter.

Acoustic Theory

Noise barriers reduce sound levels by interrupting the direct transmission path between a source and a receiver. The degree of attenuation achieved depends on factors including barrier height, relative source and receiver positions, and the frequency content of the noise.

A reduction of 10 dB is generally accepted as a reduction gained from a continuous close-boarded timber fence.

Proposed Mitigation Measure

The proposed mitigation comprises a continuous close-boarded timber fence to be installed along the site boundary. There is currently a permeable fence in this location, as shown in the image below.



Figure 1: Existing Fence

For acoustic effectiveness, the fence is confirmed to be:

- Of solid construction with no gaps or openings;
- A minimum surface mass of approximately 10–15 kg/m²;
- Installed with no air gaps at ground level; and
- Of sufficient height to fully break the line of sight between the noise source and the receptor.

Based on established acoustic principles and comparable installations, a close-boarded timber fence of the type described above is expected to provide an attenuation of approximately 10 dB, where the barrier fully screens the line of sight between the noise source and receptor.

Updated NSR Noise Level

Applying the reduction offered by a close-boarded timber fence to the NSRs reduces each NSR noise level by approximately 10 dB, as detailed in Table 1.

Noise Sensitive Receptor	Barrier Attenuated Receptor Noise Level L _{Aeq} (dB)
56-70 Fenners Marsh	32
61-70 Fenners Marsh	32
93-102 Fenners Marsh	30
103-106 Fenners Marsh	31
107-110 Fenners Marsh	32
1-14 Nobles Mead	35
15-24 Nobles Mead	34

Table 1: Updated NSR Noise Levels

Table 2 below summarises the barrier attenuated BS4142 assessment procedure carried out for the site using the worst-case noise level of 1-14 Nobles Mead.

Results	Worst Case Noise Sensitive Receptor 1-14 Nobles Mead
Measured Ambient Sound Level	58
Residual Sound Level	58
Typical Background Sound Level L _{A90} (dB)	42
Specific Sound Level	35
Acoustic Feature Correction	0
Rating Level L _{Ar} (dB)	35
Excess of Rating over Background Sound Level	- 7
Achievement of Local Authority Criteria	YES

Table 2: Updated BS 4142 Assessment

5. Conclusion

The installation of a continuous close-boarded timber fence along the site perimeter is expected to achieve a noise reduction of approximately 10 dB for screened receptors.

This level of attenuation represents a meaningful reduction in environmental noise levels and forms an appropriate mitigation measure for the site, bringing the site to 7 dB below existing background noise levels.

Written & approved by:

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Stephen Hale is a full member of the Institute of Acoustics (MIOA) and holds a Bachelor of Science degree in Sound Engineering with honours, backed by a decade of experience in the field of acoustics.

Specialising in environmental noise measurement, Stephen excels in providing expert acoustic consultancy services for residential and mixed-use planning applications, managing plant noise for large-scale industrial projects, and contributing to the innovative design of music studios.

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NOT FOR ISSUE