

Appendix B - Noise

Additional supporting evidence - Suitability of the sound barriers

Residents in the Church Road area of Sevington are provided with numerous forms of sound barriers which are discussed below.

The Chairman of the Parish Council has observed that noise from similar sources from the south are not perceptible to the same level as noise from the IBF. Noise sources to the south are:

- a) 24Hr DVLA HGV inspection centre - screened via earth bund.
- b) 24Hr use railhead with visiting diesel locomotives - screened via a combination of concrete barriers and profiled acoustic treatment with noise absorbent core.
- c) High speed 1 – screened via profiled acoustic barrier with noise absorbing core.



Examples of mass and absorptive nature of other noise barriers employed in the area (areas not generally visible and should not be considered representative of acceptable visual styles).

The above forms of noise barrier appear significantly more effective than the timber screens used at the Inland Border Facility.

During early discussions with the developer Gallagher, & DfT representative Kyle Cliff, large planted earth bunds were presented to local residents as the proposed visual and noise barrier to the site.

Earth bunds, other than minor massing at the base of the barriers, do not appear to be used near to Church Road.

Timber screens are used, which considering mass law and attenuation, will result in reduced effectiveness at the low frequencies being experienced by local residents. Their reflective nature is believed to further reduce the attenuation due to secondary reflections from buildings and hard sided HGV's projecting the noise over the barrier.

The Transport Research Laboratory testing of similar timber barriers demonstrated a significant reduction in actual performance against claimed, with tests also demonstrating very low effectiveness at low frequencies.

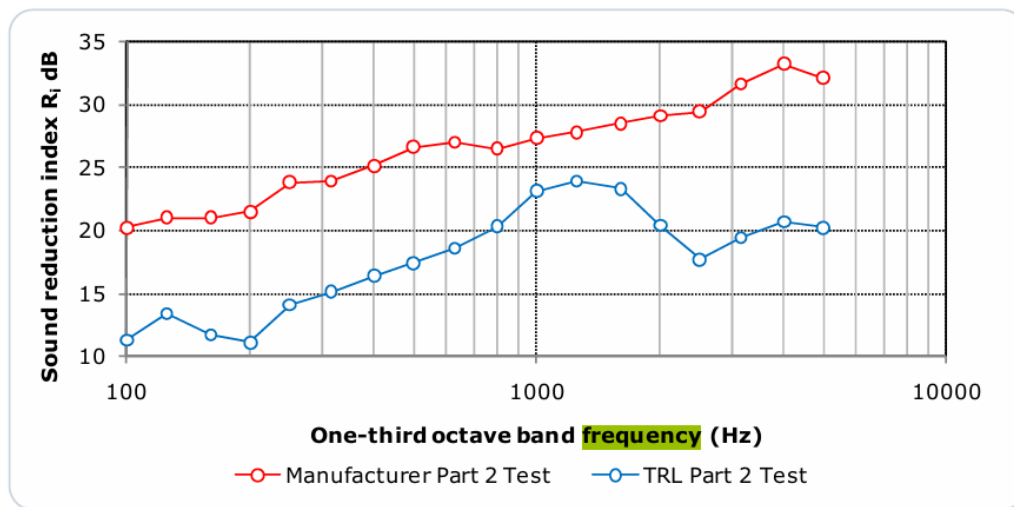


Figure 5.4: Comparison of manufacturer and TRL Part 2 sound reduction index spectra for a single-leaf reflective timber barrier

Extract from PPR490 'The acoustic durability of timber noise barriers on England's strategic road network' by P.A.Morgan – May 2010

The effectiveness of timber barriers also reduces with age:

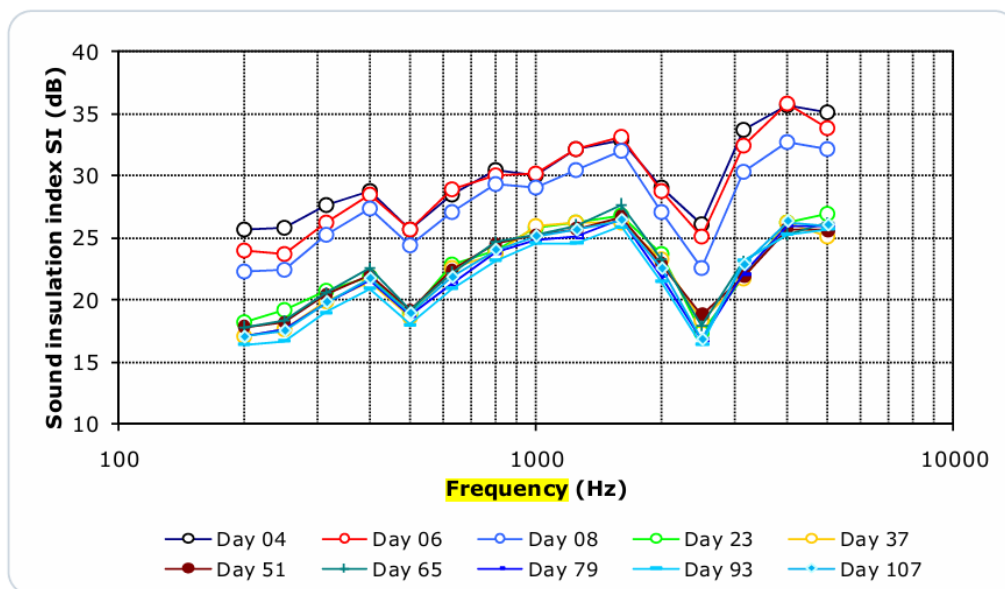


Figure 7.4: Sound insulation spectra assuming a 4 m high barrier

Extract from PPR490 'The acoustic durability of timber noise barriers on England's strategic road network' by P.A.Morgan – May 2010

The low frequency sound energy from the site should not be underestimated when the site is experiencing higher demand. The drone of HGV's accelerating along the site road nearest to Church Road is a common cause of complaint, with one resident reporting that it makes their windows vibrate.

Refrigerated trailers also cause a nuisance, with the emission of a similar low frequency noise. The diesel engines used to power the refrigeration systems are understood to not be subject to noise restrictions. Studies by RWDI Consulting Engineers in Canada on common refrigerated trailers including Carrier (also common in the UK) showed very high noise levels particularly at low frequencies, observing that exhaust noise is emitted at the top of the unit, further reducing effectiveness of the barriers provided.

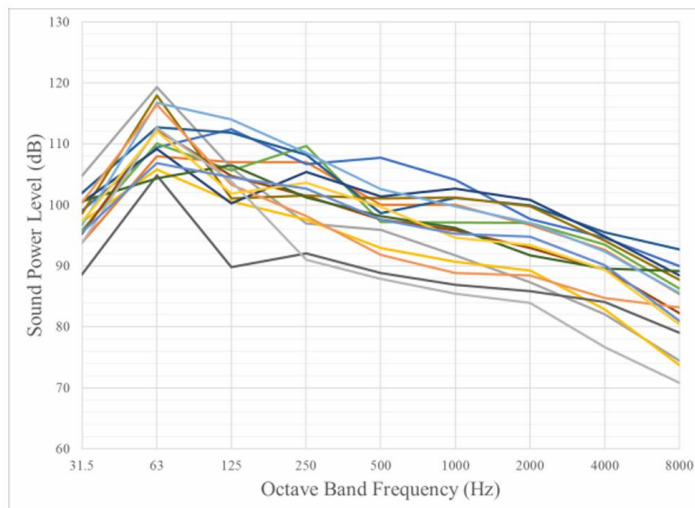
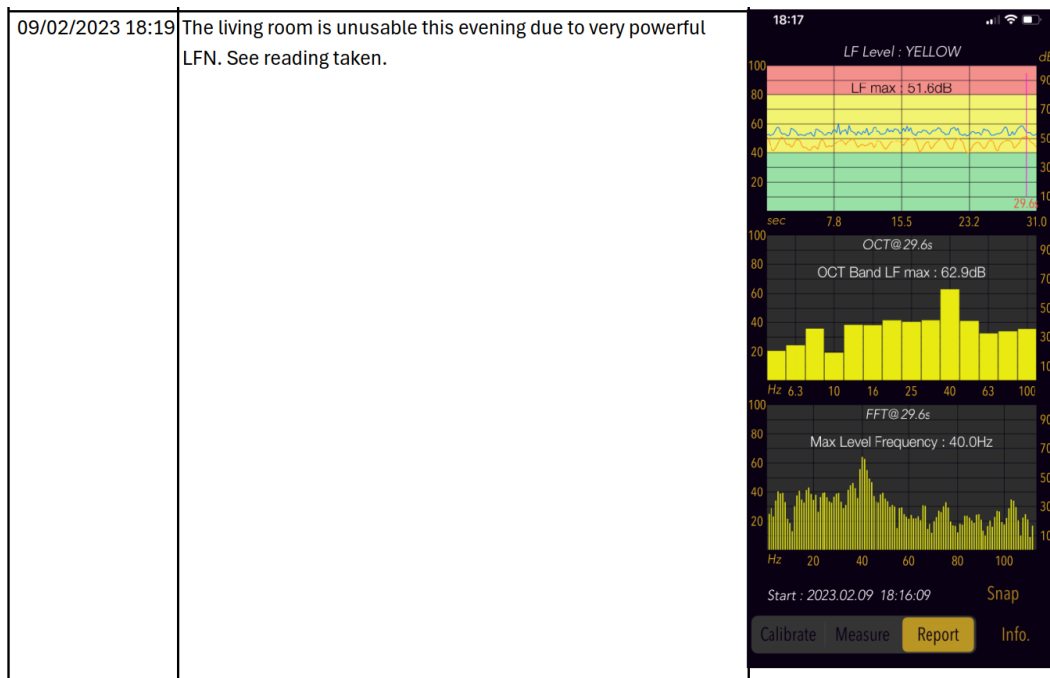


Figure 3: Trailer refrigeration unit sound power levels

Extract from '*SOUND POWER LEVELS AND DIRECTIVITY PATTERNS OF REFRIGERATED TRANSPORT TRAILERS*' by Jessie Roy & Peter VanDelden demonstrating an opposite frequency characteristic from the barriers provided.

When numerous refrigerated trailers are operating, the peak tonal frequencies, when combined, can cause constructive and destructive interference, resulting in varying or pulsing noise, as recorded inside my home, a listed dwelling near the site in the example below:



Extract from a log of noise disturbances.

The impact on local residents appears to vary with sleep disturbance being the most common complaint. Personally, the continuous tones and LFN are fine for a short period, but after 1-2 hours can become frustrating with a growing need for respite and after 24 hours becomes unbearable to the point of becoming confined in the two rooms of the house where it can be heard least. Continuous tonal or LFN have continued for more than a week during previous significant noise events.

It is acknowledged that noise issues have reduced following action by the operator to reduce the noise sources. This is only possible during off-peak times.

The issue has resulted in our seeking options to re-locate as well as using mass and acoustic materials to improve acoustics in the house at my own expense.

Additional supporting evidence - Suitability of the noise impact assessment

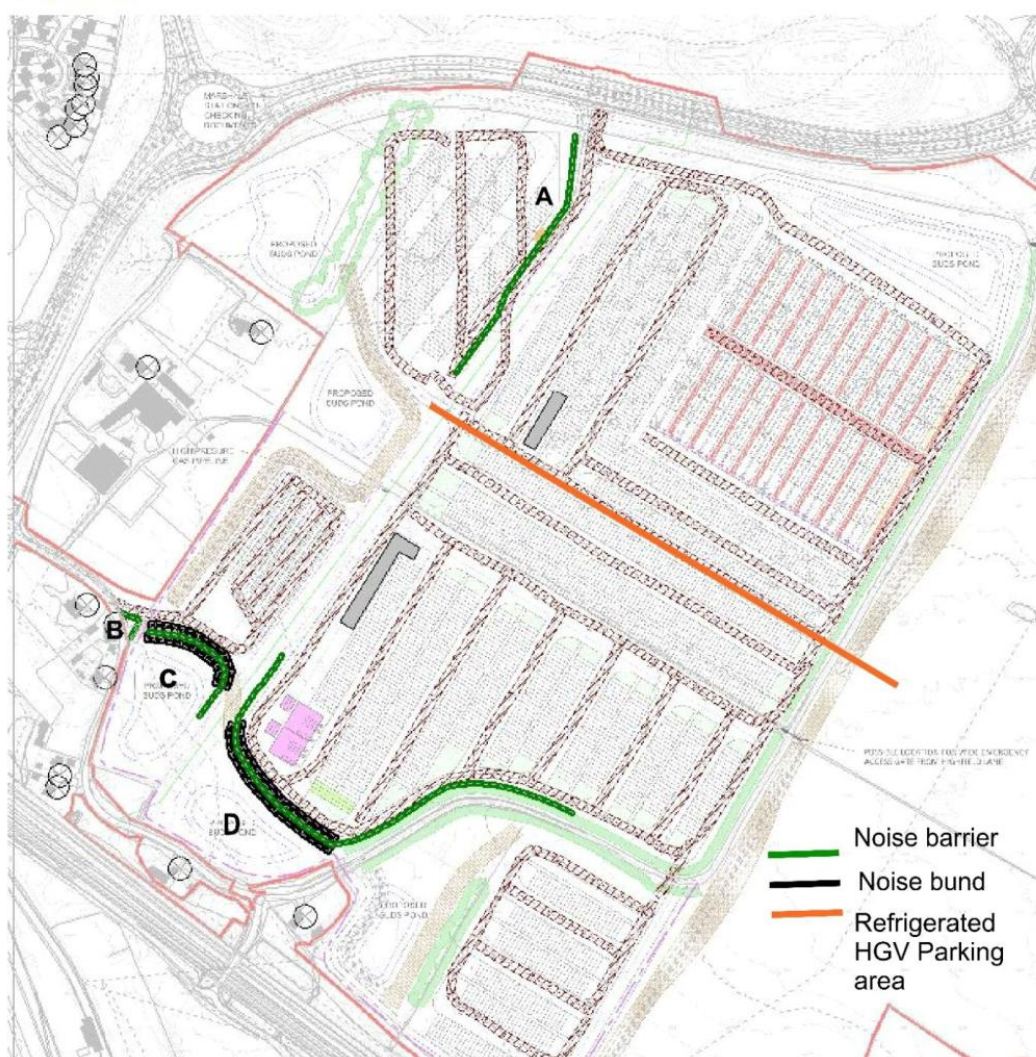
The noise impact assessment as submitted makes no reference to tonal or low frequency noise disturbance and makes no commitment to any operational measures to mitigate.

In addition, the assessment as submitted does not adequately consider the location or use of refrigerated transport trailers on the site.

The assessment as submitted is therefore less thorough than the noise report undertaken for the temporary submission, which identified such risks and required refrigerated trailers to be parked to the north of the site.

- A: 5m barrier
- B: 4.5m barrier
- C: 5m barrier represented by the green line only and a 2m bund + 3m barrier represented by the black + green line
- D: 5m barrier represented by the green line only and a 2m bund + 3m barrier represented by the black + green line

Figure 3:2: A plan of the mitigation assumed in place for the operational noise assessment



Extract from page 22 & 23 of the noise impact assessment completed for the Special Development Order and subsequently made public after the development became operational following freedom of information requests. The bunds do not appear to have been constructed to 2m high.

Introduction of food check facilities to the south of the site has resulted in the requirement for refrigerated trailers to park south of the line identified in the original noise report.

Whilst tonal and low frequency noise may not be specifically referenced in the NPPF, Guidance on noise at [Noise - GOV.UK](https://www.gov.uk/guidance/noise) in relation to managing potential impacts in new developments, notes the consideration of low frequency and tonal noise when considering what factors could cause a concern. The guidance also notes that local arrangements of buildings, surfaces (such as existing barriers previously mentioned which may capture and increase noise to residents) and green infrastructure should be considered. The noise report does not appear to consider such matters adequately.