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Our Reference: 2223/20160411
Your Reference: 2008/2148

Dear Mr McDermott,

Reply to Council Comments

Further to our initial noise impact assessment¹ for the development of 4 commercial units at Wentworth Park Industrial Estate, Arcus Consultancy Services (Arcus) have been asked to reply to comments from the Regulatory Services team at Barnsley Metropolitan Borough Council (MBC) regarding noise limits and the inclusion of an acoustic fence/bund.

It is advised that this document be read in conjunction with our initial noise assessment for the Development, which included information on the methodology, site survey and provided recommendations on noise limit.

Noise Limits

With regards to the noise limits suggested in the Arcus noise impact assessment, Barnsley MBC states:

'The report has suggested conditions limiting noise at the boundary of the closest property to 50dB between 0700 to 2300 and 45 dB between 2300 and 0700, based on BS4142:2014. When considering noise from fixed plant BS4142 allows penalties to be added where the noise is tonal. For the case of fixed plant such as fans/chiller etc I would say this is so the penalty can be applied. BS 4142 states a penalty of 4dB can be added where the noise is clearly perceptible. Therefore in this case I suggested we subtract that from the limits suggested. I would therefore suggest a limit of 40dB at the boundary of the nearest property.'

In response, the suggested noise limits provided in our report are **rating levels** of 50 dB, L_{Aeq} between 07:00 and 23:00, and 45 dB L_{Aeq} at all other times. Rating levels are described in BS 4142² as the "specific sound level plus any adjustment for the characteristic features of the sound". By specifying a rating level, acoustic features such as tonality, impulsivity and intermittency are accounted for by applying an appropriate penalty to the specific level (either measured or predicted) and then comparing these against the noise limit. As such it is

¹ Noise Impact Assessment, Wentworth Way, Arcus Consultancy Services, 2015.

² BS4142:2014 Methods for rating and assessing industrial and commercial sound. British Standards Institute, 2014.

considered that tonality (and other acoustic features) are already accounted for by specifying a rated noise limit, and there is no requirement to reduce the limits further, provided that the planning conditions explicitly state that the limits relate to rating levels.

In addition, we note in section 7 of our report that fixed plant items (such as air handling and cooling units) are likely to be the main sources of noise, although no information on the location, type or size of these units is available at this stage. In practice, depending on usage, there may not be any fixed plant items installed as part of the Development (or indeed the fixed plant units installed may not actually contain acoustic features), in which case lowering the noise limits may provide an unfair constraint on the Development.

Noise bund and Acoustic Fence

In relation to the noise bund and acoustic fence, Barnsley MBC states;

'The noise report also suggests noise from delivery vehicles including truck mounted cabs will likely be the main source of noise and that this can be included in the condition. However, I don't think this can as the business at the building may not have any control of what vehicles arrive at their site. I have noted in the original permission granted that information about a noise bund and acoustic fence should be submitted, I would suggest that this would be a better form of noise attenuation for controlling noise from delivery vehicles. Perhaps this can be included in any new submission?'

Please note that the scope of BS 4142:2014 includes at Section 1.1 d) "...sound from mobile plant and vehicles that is an intrinsic part of the overall sound emanating from premises or processes..."

It is considered that noise impacts from the Development can be sufficiently controlled by conditions limiting noise to below agreed levels, such as those specified in the Arcus report. If it is found that noise limits in the planning condition are being exceeded once the site is in operation, further mitigation measures could be considered, such as a noise bund or acoustic fence.

Due to the cost and potential impact on outlook from nearby properties, the construction and installation of a noise bund and acoustic fence before establishing whether there is likely to be a significant noise impact is on nearby properties is considered excessive. Depending on the source of the noise exceeding the limit, there may be cheaper and less disruptive mitigation measures available to reduce noise impact on nearby properties.

In conclusion, by specifying rating levels, acoustic characteristics such as tonality are accounted for by applying a penalty to the specific level, and assessing against this. In addition, the noise limits specified in the report, if included as part of the development's planning condition, allow the council to control noise emissions from the site, including that associated with vehicles. If the development is found to exceed these limits, mitigation measures can be specified to reduce the impact of noise at the nearby residential properties.

Yours sincerely,



Martin Stevenson

Senior Acoustic Consultant