Shared Regulatory Services
Gwasanaethau Rheoliadol a Rennir

COFNOD / MEMORANDUM

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Adran / Dept:	**Planning Department**	**Ein cyf / Our ref:**	**RA1-2215/17**
Dyddiad / Date:	**04 May 2018**	**Ffôn / Tel:**	**0300 123 6696**
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SUBJECT: VARIATION TO CONDITION 5 OF PLANNING PERMISSION 2015/00031/OUT TO INCLUDE FIRE TANK AND BUILDING AS WELL AS RELOCATION OF PARKING
PLANNING APPLICATION NO: 2017/01080/FUL
STREET RECORD, DAVID DAVIES ROAD, BARRY, VALE OF GLAMORGAN

I refer to your memorandum received by this department on 01 November 2017, this department has comments to make regarding the above application.

There are some concerns when looking at the Environmental Noise Impact Assessment undertaken by Sol Acoustics (ref: P1714-REP02-Rev A-SJF – dated the 14th July 2017). Concerns mainly revolve around background and predicted noise levels and the noise impact on existing residential and the future residential development site at Cory Way, Barry.

Acoustic Features

The Sol Noise Impact Assessment has not independently considered tonality, impulsivity, or intermittency when referring to the standard. When considering all three acoustic features, totalled, they can give a combined acoustic penalty of 15dB.
It is stated that a penalty of +3dB has been given in order to allow for all acoustic features. Each acoustic feature must be judged on its own merits and not given a combined penalty. It is not of the essence of the standard to give a rating in this way. If the acoustician decides that it is not necessary to consider the above factors, reasons and justification for omitting must be made.
However, due to the acoustic features not being individually considered, this means that the initial assessment of noise impact described in Section 6.0 has possibly been underestimated by up to 12dB.

Uncertainty

Section 10 of BS4142:2014 describes how an assessment needs to consider the level of uncertainty involved with the data and associated calculations that could affect the conclusion of the report. The Environmental Noise Impact Assessment makes no mention of the uncertainty involved with the data collection or the associated calculations. As a result, it is not certain whether the assessment presented by Section 6.0 is accurate or what the margins for error are.

As a result, it is possible that the results of the assessment presented in Section 6.0 are an overestimation of the true value, but equally the results could be an underestimation. In relation to the magnitude of the over or underestimation, it is likely to be at least 1dB due to the uncertainty involved

with Class 1 Sound Level Meters, however is likely to be more due to the other steps involved in the calculation and assessment process.

Background

When referring to BS4142: 2014 The Sol Environmental Noise Impact Assessment has not compared the lower rating level (as advised in the British Standard) to the measured background sound level.

When looking at typical background noise, if the Environmental Noise Impact Assessment had considered the worst case *typical* background noise level per site, the background noise level would have been 2-3dB lower than reported. This equates to a potential overestimation of the background noise levels by 2-3dB and a subsequent underestimation of the assessment of the impacts in in Section 6.0 by 2-3dB per site.

By comparing the *typical* background noise level for each site with the $L_{A90,\ 15min}$ plot there appears to be considerable periods where the measured background levels drop below *typical* background noise level for a many hours at a time and by a considerable margin. This raises question as to the validity of choosing such *typical* levels.

For example, if the process is repeated for graph B1 it can be seen that the measured background levels drop below the *typical* background noise levels for 10 of the 12 night-time periods, again sometimes for 4-5 hours at a time, sometimes dropping by as much as 5-10dB below the “typical” background noise level.

If the process is repeated for graph B2 it can be seen that the measured background levels drop below the *typical* background noise levels for every one of the 11 night-time periods, again sometimes for 4-5 hours at a time, sometimes dropping by as much as 12-13dB.

Again, if the *typical* background noise level is plotted on to graph B3 it can be seen that for the night time periods the measured background noise levels dropped below the *typical* background noise levels for 8 out of the 12 night-time periods, sometimes for 4-5 hours at a time, dropping by as much as 5-10dB below the “typical” background noise level.

As a result of these points it can be said that the *typical* background noise levels that have been chosen are not actually representative of the noise environment at sites 1, 2 and 3 given the context of the area. It could be argued, in fact, that the background noise level could be 5dB lower than the *typical* background noise levels chosen, possibly more. Subsequently, it could be argued that the assessment of impacts has been considerably underestimated in Section 6.0, perhaps by 5dB, maybe much more.

Low Frequency Noise

There are also concerns about the potential for Low Frequency Noise affecting nearby noise sensitive receptors.

Appendix E of the Environmental Noise Impact Assessment provides the expected noise levels of each piece of equipment, including octave band levels, and the mitigation measures that are to be installed. Appendix F of the Environmental Noise Impact Assessment provides the expected Sound Reduction Index for each building element for each of the new buildings that are to be installed.

Appendix G takes the information from Appendices E and F and provides details of the composite Sound Reduction Index for the buildings and details the expected reverberant Sound Pressure Level that would exist within the building when the site is operating.

By comparing the expected reverberant sound pressure level and the composite Sound Reduction Index it is possible to predict the likely noise breakout from the building. There are concerns that the low frequency noise, in particular that in the 63Hz and 125Hz Octave Bands have not been adequately considered at the measurement positions.

For example, Appendix G examines the noise breakout for the Reception Building. Page 69 states that the composite Sound Reduction Index for 63Hz ranges between 8 and 9dB for the facades and the roof. For the 125Hz Octave Band the composite Sound Reduction Index (SRI) ranges between 12-15dB. However, page 71 states that the corrected Reverberant Sound Pressure Level (SPL) for 63Hz is 81dB and for 125Hz is 71dB. This means that the machinery noise immediately outside of the building is likely to be between 72- 73dB in the 63Hz Octave Band and between 56-59dB for the 125Hz Octave Band.

A similar pattern is found for the Main Process Building (corrected reverberant SPL of 83dB in 63Hz octave band and 77dB in 125Hz octave band but a composite SRI of 12-16dB for the 63Hz octave band and 13-20dB for the 125Hz octave band).

Again, the same pattern is present for the lean to building (corrected reverberant SPL of 100dB in 63Hz octave band and 100dB in 125Hz octave band but a composite SRI of 13-16dB for the 63Hz octave band and 13-19dB for the 125Hz octave band).

The pattern is also present for the Turbine Building (corrected reverberant SPL of 75dB in 63Hz octave band and 75dB in 125Hz octave band but a composite SRI of 11-14dB for the 63Hz octave band and 14-19dB for the 125Hz octave band.)

As a result of the above points the Environmental Noise Impact Assessment must compare the predicted noise levels in the different octave band levels at each measurement position, especially the 63Hz and 125 Hz octave bands, with the measured background noise levels in the different octave bands. This will allow the assessment to fully understand the context of the noise and allow a better understanding of what mitigation measures may be needed to control the noise from site. As it currently stands, low frequency noise is likely to have a detrimental impact on amenity.

Conclusion

Having reviewed the Environmental Noise Impact Assessment this department has concerns about the conclusions presented in Section 6.0 as such believes that there will be a detrimental impact on amenity. Whilst we do not object to the application, this memo identifies concerns with noise break out and in particular, low frequency noise.

1. The initial assessment of the likely impact of the site appears to significantly underestimate the initial assessment of impact, potentially up to 19dB.

2. Low frequency noise has not been appropriately considered and likely to have a detrimental impact.

3. There appears to be insufficient consideration of the context after the initial assessment of the impact, meaning that the impact assessment presented is incomplete.

4. As the proposed mitigation measures cannot be considered appropriate at this stage it cannot be said that Best Available Techniques have been used to mitigate the noise from the site.

5. Due to the levels of expected noise from the site, the measured background noise levels and the currently proposed mitigation package it has to be concluded that Statutory Nuisance enforcement would be likely if the site were to operate as planned.

Prior to full commissioning of the site, the developer shall provide the local planning authority with a scheme of works, agreed by the authority, identifying the above concerns and how they will mitigated. Once all works have been completed and agreed by the authority, can full commissioning commence.

REBECCA ATHAY, NEIGHBOURHOOD SERVICES OFFICER