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Mrs C Reynolds  
Arun Council Environmental Health

Dear Carol



## **VA2987 THE LAURELS, DAPPERS LANE, ANGMERING**

### **Noise Impact Across Site**

Further to our recent conversation, we have reviewed the calculations and noise data and are pleased to provide the following summary.

It was agreed that due to the lack of control of operational hours of the adjacent units, the background noise level of  $L_{A90}$  38dB rather than  $L_{A90}$  40dB would be used for the purposes of the assessment.

The Council has highlighted concerns about noise from the businesses to the north of the site, namely SG Tanks and Thatcher Motors.

It is understood that both of these businesses operate in the external areas, and so additional assessments of noise from these have been undertaken based upon the layout provided. Due to the complexity of the number of different scenarios, the building interaction in this locale and the likelihood of noise both reflecting off and being screened by the surrounding buildings, 3D noise mapping was implemented to ensure the most accurate prediction of plant noise levels at the nearest noise sensitive receivers.

This process uses several different calculation protocols to derive accurate noise analysis predictions. Noise propagation and barrier attenuation are calculated in accordance with ISO 9613-1:1993 *Acoustics - Attenuation of sound during propagation outdoors - Part 1: Calculation of the absorption of sound by the atmosphere* and ISO 9613-2:1996 *Acoustics - Attenuation of sound during propagation outdoors - Part 2: General method of calculation*.

### **SG Tanks**

We understand that SG Tanks have stated that they hammer seams on metal tanks constantly for 2 to 3 hours per day, every day, with Thatcher Motors undertaking much of their bodywork preparation externally to the building.

We have modelled the noise from SG Tanks in this manner, assuming that the hammering would be constant for 75% of the hour, with 25% between strikes, with the hammering taking place on the hardstanding outside the front of the roller door.

With the hammering undertaken in this manner noise levels at ground floor level are predicted to be 40dB(A) at the most affected receiver with no mitigation measures. When assessed with penalties for the intermittency and impulsivity (+9dB), this would equate to a BS4142 rating level of +11dB above the background level, an indication of adverse impact.

We would however, state the following qualifications about the amount of loud activity reported at SG Tanks. Review of the survey data for a noise source would be expected to show a period of altered time history, which is not apparent during this survey.

It is also understood that the existing resident of the Laurels has never noted period of extended loud banging, which would be expected to be clearly audible at their houses. Indeed, the predicted noise levels at their house would be expected to be at a level which when rated under BS4142 would result in a rating level of +8dB, and so if this is the case, could be tending towards a level at which it might be considered a nuisance to existing dwellings.

It is understood that the scheme for Crete Nursery to the west has been given outline permission and reserved matters without any considerations for noise, although it is expected to be exposed to similar levels of noise as the existing dwelling at the Laurels.

If noise from this location is prominent, it would be useful to know if there is a history of noise complaints associated with the site, and what they relate to, as we do not have access to such information. It would also be useful if the planning use of the SG tanks premises could be confirmed alongside any relevant planning history.

### **Thatcher Motors**

An assessment has also been undertaken for Thatcher Motors, for works in the same pattern as assumed for the restoration garage to the south in our original report, and again, all activities are assumed to be occurring externally in front of the garage.

The predicted hourly noise level at the most affected receiver would be 34dB(A), which when modified with the maximum penalty of 9dB attributed from these activities in the report, would be 43dB(A) (+5dB rating level).

### **Mitigation**

As per the report, the noise calculations and assessments have been repeating incorporating a 3m high fence around the south, east and north boundaries.

In addition to this, noise levels from each location, as well as a cumulative assessment has been undertaken, with the summary shown below in Table 1.1.

Addition of BS4142 penalties, which are character correction factors intended to be applied once to a cumulative sound level, convert a Specific Sound Level into a Rating Level. The Rating Levels are not in the form of sound pressure levels and do not have a defined method of addition. The cumulative levels shown below are logarithmic sums of the individual rating levels and may indicate a higher level of impact than would actually be expected, but have been included as requested.

It should also be noted that all assessments have been undertaken with the sources being external, which may well not be the case (and is why paint spraying has been excluded in this set of

calculations). Noise levels from internal activities would be expected to be lower, even with roller doors left open.

| Source              | Most Affected Receiver, $L_{Aeq}$ | BS4142 Penalty | Rating Level above background ( $L_{A90}$ 38dB) | Most Affected Receiver, $L_{Aeq}$ With Mitigation | BS4142 Penalty | Rating Level above background ( $L_{A90}$ 38dB) |
|---------------------|-----------------------------------|----------------|-------------------------------------------------|---------------------------------------------------|----------------|-------------------------------------------------|
| SG Tanks            | 40                                | 9              | 11                                              | 38                                                | 9              | 9                                               |
| Thatcher Motors     | 34                                | 9              | 5                                               | 33                                                | 9              | 4                                               |
| Grinder             | 33                                | 3              | -2                                              | 33                                                | 3              | -2                                              |
| Buffing             | 19                                | 7              | -12                                             | 18                                                | 7              | -13                                             |
| Hammering           | 25                                | 9              | -4                                              | 25                                                | 9              | -4                                              |
| Rust Motors         | 60                                | 9              | 31                                              | 45                                                | 9              | 16                                              |
| Grinder             | 60                                | 3              | 25                                              | 45                                                | 3              | 10                                              |
| Buffing             | 37                                | 7              | 6                                               | 28                                                | 7              | -3                                              |
| Hammering           | 46                                | 9              | 17                                              | 36                                                | 9              | 7                                               |
| Thatcher + Rust     | -                                 | -              | -                                               | 45                                                | 9              | 16                                              |
| Grinder             | -                                 | -              | -                                               | 45                                                | 3              | 10                                              |
| Buffing             | -                                 | -              | -                                               | 28                                                | 7              | -3                                              |
| Hammering           | -                                 | -              | -                                               | 36                                                | 9              | 7                                               |
| SG, Thatcher + Rust | -                                 | -              |                                                 | 41                                                | 11             | 14                                              |

**Table 1.1 – Noise Assessments**

## Internal Noise

BS4142 specifically excludes the assessment of internal noise levels in dwellings. A comparison of the external noise levels has been undertaken from activities on site and the likely internal noise levels in dwellings. At ground floor level, all units, with the exception of plot 9 would be expected to meet the internal noise levels stated in BS8233 for daytime use with windows open, allowing for a loss of 10dB for an open window, as requested. However, it should be noted that this would be likely audible against the existing background.

With the inclusion of glazing providing a minimum performance of  $R_w$  36dB, as per our previous report, internal noise levels in the most affected living room and bedroom from the loudest activity associated with the surrounding sites could be controlled to comfortably below 30dB(A) internally during the events, so 5dB lower than the guideline internal noise level for resting, dining and daytime sleeping stated in BS8233 2014.

## Summary

The scheme has been re-assessed with regards to noise from the various surrounding premises, and recommendations made regarding potential mitigation measures. For the loudest sources on site, the level of exposure that the new dwellings would experience is not very different to the levels currently predicted at the Laurels, an existing dwelling, which would suggest the impact in reality is not as great as this robust assessment may suggest.

We trust the above to be of assistance. Don't hesitate to contact me should you have any queries.

Yours sincerely  
on behalf of Venta Acoustics

**Jamie Duncan**

