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Date: 8th June 2023
Reference: 10123-1 Rev 0

Dear Peter,

Re: Land off Pines Hill, Stansted – Noise Review for Application UTT/23/0966/PINS

Further to the recent comments from Uttlesford District Council's Environmental Protection Officer (Jane Mann), in relation to Climate Acoustics report CLI0239/R1/Rev.D dated August 2021, please see our comments below.

1.0 NOISE ASSESSMENT REVIEW

1.1 The assessment undertaken by Climate Acoustics examines noise arising from three sources, namely:

Railway (West Anglia Main Line) to the south east
Pines Hill (B1383) road to the west
R&N Engineering workshop to the south

1.2 Noise from the road and railway line is seen as lower risk, though will require an appropriate assessment during any reserved matters stage application.

1.3 Concern has been raised by Uttlesford District Council regarding the veracity of the assessment of noise from R&N Engineering. The Climate Acoustics noise assessment appears to suggest that a rating outcome of +26 dB is likely at the nearest proposed plots, when assessed using BS 4142. The assessment was based upon short term burst tests of individual tools such as plate puncher, disc sander, disc cutter etc as measured circa 10m from R&N Engineering's workshop, in RNE's external area. It was noted that some tools are used very occasionally (eg, once every 3 weeks).

1.4 A valid rating of +26 dB would give genuine cause for concern. There are, however, existing residential properties in the vicinity of R&N Engineering (eg, Pines Hill Cottage) and it is understood no noise complaints from activities at R&N have been made.

1.5 The rating of +26 dB appears to have been calculated in error. It is based upon a stated daytime background noise level of 52 dB LA90 from which 5 dB has been deducted (based on Uttlesford's criterion for the control of noise from new plant and equipment) to give a target rating level of 47 dB. This figure would be appropriate for the control noise from new plant affecting existing properties. For new residential properties located near to commercial

premises, a value of up to +5 dB is often used and is considered lower than SOAEL. This value is consistent with the NPPF and PPG definitions of maintaining an impact to below SOEAL.

1.6 The assessment in the report uses a target rating level of 37 dB. This has the effect of overstating the impact by 10 dB. Further, if assuming a target level of + 5 dB over background (ie, a level of 57 dB L_{Aeq}), the impact level reduces by another 10 dB to + 6 dB. Additionally, the assessment was based upon a series of short-term noise tests which are very unlikely to occur at the same time, at all times throughout the day. It is considered that the final measurement shown in Appendix A3, lasting approximately 15 minutes and comprising hammering, is likely to be most representative of noise from the workshop and avoids the assumption that all tools are always in use. This value was 53 dB L_{Aeq} and measured inside the boundary of R&N Engineering (see Figure 1).

1.7 BS 4142 states the following:

A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.

A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.

The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

1.8 Conservatively, using the measured level of 53 dB L_{Aeq} above and taking no loss for additional distance to the nearest plots and a pessimistic reduction of 12 dBA for a proposed 2.4m boundary noise barrier, to units 24 and 25, would give a resultant level of 41 dB L_{Aeq} . The daytime background noise level at this location was typically 45 dB L_{A90} . It may be appropriate to add a character correction for impulsivity, though this will depend on the extent to which the character of the sound is discernible at the receptor location, after distance and barrier losses.

1.9 A preliminary BS 4142 assessment would therefore be as follows:

Specific noise level from R&N Engineering	41 dB L_{Aeq}
Character correction	+3 dB
Rating level	44 dBA
Background noise level	45 dB L_{A90}
Excess over background	-1 dB

1.10 If a lower background noise level were used (eg, 42 dB L_{A90}), the excess over background outcome would be +2 dB. It should be noted that this assessment does not include a correction for residual noise which would have the effect of reducing the specific noise level. Both of these outcomes are lower than +5 dB which is an indication of a low impact.

1.11 It is relevant to note also that R&N Engineering's planning consent (UTT/1071/93/FUL) includes condition C.8.3 which states that "there shall be no outdoor working of machinery of any kind at any time".

1.12 On this basis, noise from R&N Engineering will be at a level considered acceptable.

Use of BS 4142: 2014 for New Residential Developments

1.13 There is some debate as to whether using BS 4142 to assess the impact on new residential developments is sufficiently robust, for the following reasons below.

- a) The rating assessment methodology in BS 4142: 2014 does not distinguish between new commercial sources affecting existing residential properties and new residential development affected by existing commercial sources. In noise terms these are two distinct scenarios with the former tallying with subjective response and historically within the scope of BS 4142.
- b) For instances where a new noise sensitive receptor is introduced, paragraph 8.5 of BS 4142: 2014 states the following, confirming that alternative guidance can more be appropriate:

"Where a new noise-sensitive receptor is introduced and there is extant industrial and/or commercial sound, it ought to be recognized that the industrial and/or commercial sound forms a component of the acoustic environment. In such circumstances other guidance and criteria in addition to or alternative to this standard can also inform the appropriateness of both introducing a new noise-sensitive receptor and the extent of required noise mitigation."

- c) Noise from R&N Engineering forms a component part of the existing acoustic environment, and therefore use of paragraph 8.5 from BS 4142 and use of alternative guidance (i.e. BS 8233) would appear to be appropriate.
- d) The assessment method in BS 4142 does not distinguish whether the noise is continuous throughout the day (such as a factory) or occasional (such as R&N Engineering). This is a significant weakness of the standard and why – given that the document was formed based on continuous noise affecting communities - it is not a robust indicator of subjective response for occasional noise events.

1.14 In summary, use of rating noise levels under BS 4142: 2014 may well provide an insufficiently robust assessment outcome. This is not to say that undertaking an assessment is not warranted, as the values often help to provide some context.

1.15 It is recommended that, in addition to not exceeding a Rating Level of +5 dB, the following criterion be used in this assessment (these are 5 dB better than the recommended values in BS 8233):

- 30 dB $L_{Aeq, 1 \text{ hour}}$ for lounges, living rooms and bedrooms during the daytime
- 45 dB $L_{AMax, f}$ for bedrooms at night (applicable to transportation sources)

1.16 It is also important to note that the above criterion is determined over a shorter time period (1 hour for daytime) compared to the standard periods of 16-hour (daytime). The proposed criteria are considered robust for this application.

Agent of Change

1.17 The Planning Practice Guidance (PPG) on Noise expands on the 'agent of change' principle and provides guidance on how the risk of conflict between new development and existing businesses can be addressed, including where mitigation is required. Paragraph 009 of the PPG states the following regarding the mitigation of noise from existing businesses:

"The agent of change will also need to define clearly the mitigation being proposed to address any potential significant adverse effects that are identified. Adopting this approach may not prevent all complaints from the new residents/users about noise or other effects, but can help to achieve a satisfactory living or working environment, and help to mitigate the risk of a statutory nuisance being found if the new development is used as designed (for example, keeping windows closed and using alternative ventilation systems when the noise or other effects are occurring)."

- 1.16 It should be noted that noise arising from R&N Engineering is not considered to amount to SOAEL. Nevertheless, mitigation in the form of enhanced glazing and a noise barrier has been provided for plots 24 and 25. It is recommended that these units be enhanced through use via a MVHR (Type 4) system. This is considered an appropriate mitigation strategy and in line with the current guidance from the PPG.

Planning Conditions

- 1.17 The following conditions (as proposed in 2021) are recommended:

Prior to any above ground development a scheme shall be submitted for the protection of the dwellings hereby approved from noise from the road, railway and adjacent commercial units, for approval in writing by the Local Planning Authority. The scheme shall ensure that reasonable internal and external noise environments are achieved in accordance with the provisions of BS8233:2014 and BS4142:2014.

No dwellings shall be occupied until the scheme providing protection for those dwellings has been implemented in accordance with the approved details and has been demonstrated to achieve the required noise levels to the satisfaction of the Local Planning Authority. The approved scheme shall be retained in accordance with those details thereafter.

- 1.18 It is recommended that the reserved matters assessment be undertaken using UDC's Noise Assessment Technical Guidance (June 2017) and any detailed noise surveys of road, rail and R&N engineering be carried out for at least 72 hours.

2.0 SUMMARY

- 2.1 Noise from R&N Engineering has been re-assessed is considered very unlikely to cause disturbance at the nearest proposed dwellings.
- 2.2 Proposed conditions have been given which will ensure that noise from road, rail and R&N Engineering, when properly assessed and mitigated will be acceptable.

I trust the above is in order – please call if you have any queries.

Yours sincerely
For 24 Acoustics Ltd

Steve Gosling BEng (Hons) MIOA MAES FRSA
Principal Consultant

FIGURE 1 – SITE PLAN SHOWING NOISE MEASUREMENT LOCATION AND NOISE BARRIER

