AAUK Reply to Environmental Health

Azymuth Acoustics Noise Impact Assessment, Ref: AA0597, dated 28/05/25:

1.The survey periods (daytime 60 minutes at each monitoring location and nighttime 30 minutes at each location) constitute an inadequate dataset in order to demonstrate that the results are fully representative of existing noise levels at the site.

Azymuth are confident the noise survey data is representative of the existing noise levels of the site. Measurements were undertaken for 20mins within different hourly periods at each position, totalling 1hr at each position and 3hrs for all positions. We have also reviewed the standard deviations of the measured data and are confident that the measurement samples are statistically representative. Furthermore, Azymuth do not believe extending individual measurements to 1hr (totalling 3hrs at each position and 9hrs overall for all positions) would be particularly beneficial as this will not result in a significant difference in noise level. Moreover, assuming this is in reference to CRTN Shortened measurement procedure, which relates to L_{10} measurements this is not necessarily applicable in this case.

2.Confirmation should be included that the sound level meter used for the measurements holds a current calibration certificate.

The sound level meter used holds a current calibration certificate. See attached certificate number 2025-0461 for the SVAN 971 meter used (serial no. 131636).

3.The MCS 020 guidance utilised within the assessment applies to Permitted Development Installations only and is not appropriate for this application.

The MCS 020 guidance/assessment has been provided as an informative measure for reader context and does not constitute the main assessment.

4.The report makes a distinction between on and off-site receptors and utilises BS 8233 assessment methods for on-site receptors; again this is not an appropriate standard for a situation where external plant/equipment are being introduced to existing residential dwellings.

BS 4142 is broadly relevant to off-site receptors who are not in any way related to the ASHPs (notwithstanding the general point about the domestic nature of these units).

BS 8233 is relevant to on-site receptors as they are not completely separate from the ASHPs i.e. the units service these residents. The document states 'The standard is intended to be used routinely where ***noise sources are brought to existing noise-sensitive buildings****.'*

5.As per the CIEH/Institute of Acoustics Briefing Note - Heat Pumps, dated November 2022, heat pump installations requiring full planning applications require a more comprehensive noise assessment typically based on BS 4142:2014+A1:2019, and MCC's target criteria of 5dB below background levels would also apply. If these levels

are unachievable, then the Briefing Note states that "Where it is practical to do so, it is recommended that the installation sound rating level does not exceed 35dB at any noise sensitive façade of neighbouring residential premises. If it can be demonstrated that it is not practical to achieve this value, and the local context supports a relaxation, then a higher criterion may be suitable. Under those circumstances it is recommended that the reasons for the relaxation are fully set out and justified. Nevertheless, it is recommended that the sound rating level should not exceed 40dB." The nearest NSR would be the Apprentice Court flats.

It is not practical (or measurable) to achieve a sound level rating below 35dB at noise sensitive facades given the background sound levels were measured to be 41-52dBA (day) and 32-36dBA (night). Nonetheless the predicted noise level does not exceed 31dBA at off-site receptors. The recommended value of 40dB is exceeded on-site, however the assessment in this case is complex given each residents own ASHP will be equally as loud if not louder than neighbouring ASHPs on the same residential building. The document states 'The assessment should be proportionate and take into account the local circumstances and ***the nature of the installation****.' Given the context and nature of the installation, it is not feasible to subject Apprentice Court residents to the same criteria as off-site residents.*

6.Reference to a BS 4142 assessment is made within the report but, as per the above comments, is based on an inadequate dataset.

See previous comment.

7.The locations of the ASHP units in Figure 1 of the report do not fully match those shown in submitted Drawing No. ACH-MCC-XX-GF-DR-A-001, and it should be clarified whether this could affect the assessment.

Azymuth had not been provided this drawing at the time of assessment. The ASHP location changes are minor (~1-3m change in horizontal positions) and will likely have no effect on off-site receptor noise levels but may produce slight changes in on-site noise levels due to the slight change in proximity to receptors and cumulative levels.

8.Tonality is considered and discounted in the report, but no other noise penalties are considered. The CIEH/IOA Briefing Note states that there are a number of factors that can increase the potential for disturbance from heat pumps, including tonality as well as intermittency of operation, sound levels in reverse cycle, and structure borne sound and vibration transmission.

The list of factors in the briefing note is intended for permitted development MCS schemes as BS 4142 includes its own penalty system, nonetheless:

As per BS 4142 an intermittency penalty is applicable where the intermittency is clearly perceptible, which may not be the case at off-site receptors as the predicted noise level

lies below / close to the background sound level. An intermittency penalty is not applicable in BS 8233 assessments.

Azymuth have used the data available from the manufacturer, which does not specify reverse (ie defrost in colder weather) cycle operation sound power/pressure levels.

All heat pumps are to be located externally on the ground floor, which should provide sufficient absorption/insulation from structure borne sound and vibration transmission subject to good workmanship during pump installation (i.e. proper mounting).

9.When appropriate measurements are obtained, a nighttime Grid Noise Map should also be provided.

Day and night grid noise maps are identical as the ASHPs have been modelled to run at full capacity 24hrs per day. See figures below.

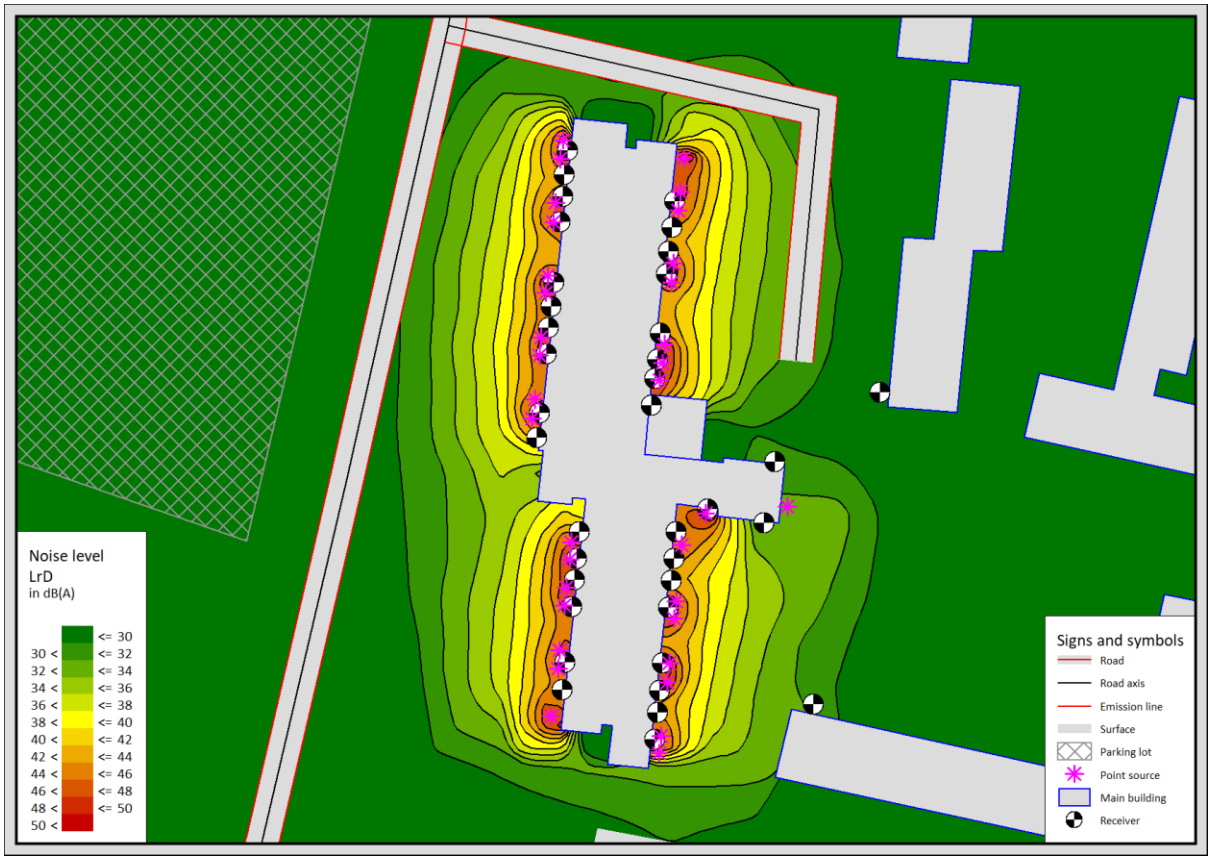


Figure 1 – Daytime GNM of proposed ASHPs at Apprentice Court

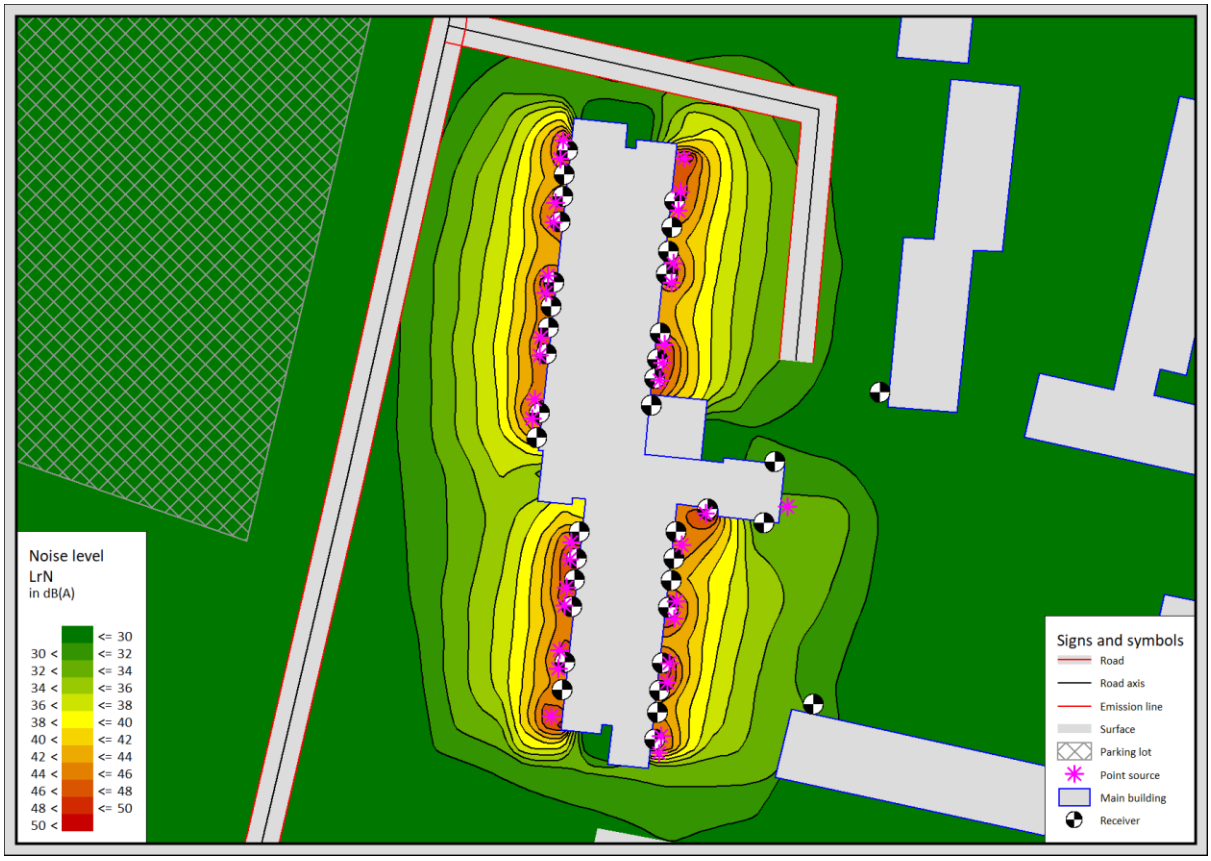


Figure 2 – Night-time GNM of proposed ASHPs at Apprentice Court

A night-time grid noise map where ASHPs are restricted to quiet-mode can be produced however this is subject to the availability of quiet-mode noise level data.

10.Depending on the outcome of an acceptable assessment, any recommended 'quiet-mode' restriction on units during night-time periods would need to be demonstrated as feasible.

This is up to the M&E engineer to confirm.