

Inc Architects Limited

SUPPLEMENTARY NOISE IMPACT ASSESSMENT

Operational Phase

Development of 6 one bed holiday lodges and
fishing clubhouse/housekeeping storage building

Issued: June 25

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Site Address:

Woodhead Hall , Cherry Lane , Cheadle , Staffordshire , ST10 4QS

Client:

Woodhead Hall Estates

Proposal:

6 one bed holiday lodges and fishing clubhouse/housekeeping storage building

Report Prepared By:

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- 1. Introduction, purpose and scope**
 - 1.1.** This supplementary assessment addresses operational noise effects from the proposed holiday lodge development on existing neighbours (including, but not limited to, Maple House and The Gables). It builds upon the baseline measurements in the previously submitted acoustic report and is framed around:
 - 1.2.** BS 4142:2014+A1:2019 – Methods for rating and assessing industrial and commercial sound (applied to fixed/controlled operational sound sources associated with the site, and—where appropriate—aggregated activity noise treated as a specific sound).
 - 1.3.** ProPG: Planning & Noise (2017) and BS 8233:2014 – used as context for internal/external design criteria, daytime amenity, and the acoustic design/management process.
 - 1.4.** Construction noise is excluded (covered by separate conditions). This document focuses on the post-opening operational phase.
- 2. Reference documents and baseline**
 - 2.1.** Baseline environmental sound levels were measured on and around the application site in January 2023 (two unattended positions). Reported daytime ambient levels were ~43–44 dB LAeq,16h with night-time ~36–38 dB LAeq,8h. Background sound levels (LA90) are very low, commonly in the low-30s dB by day and high-20s dB at night, with occasional minima in the low-20s dB late at night.
 - 2.2.** The Local Authority Environmental Health consultation (27 Feb 2025) requested an assessment of operational noise impacts on existing neighbours and recommended refusal pending such information. This Supplementary Noise Impact Assessment (SNIA) is intended to address that gap.
- 3. Sensitive Receptors**
 - 3.1.** Primary existing receptors considered:
 - Maple House – existing dwelling on/near Cherry Lane.
 - The Gables – existing dwelling on/near Cherry Lane.
 - 3.2.** Other dwellings along Cherry Lane/Oakamoor Road are noted as secondary receptors. For modelling and management purposes, receptors are taken at the most exposed residential façades at 1st-floor height (4 m AGL) unless otherwise noted. If final layout places parking/paths closer to other dwellings, those façades will be adopted as the controlling receptor in condition setting.
 - 3.3.** Distances: Final design drawings showing exact receptor offsets were not provided with this SNIA. Where numerical targets are proposed below, they are set as at-receptor limits and thus do not rely on any assumed distance. (If distances are later confirmed, the plant/source specifications can be back-calculated accordingly.)
- 4. Operational sound sources considered**
 - 4.1.** Fixed/controlled sources (suitable for BS 4142):
 - External mechanical/electrical plant (if any): e.g., packaged heat-pump units, water feature pumps, intake/extract fans, communal plant, EV chargers with cooling fans, or similar.
 - Site infrastructure: e.g., a small reception/kiosk HVAC, bin store extract, security gates (if motorised and externally mounted).
 - There are no hot tubs proposed as part of this scheme.



- 4.2.** Managed activity noise (partially suited to BS 4142, with caution):
- Arrivals/departures & parking manoeuvres (engine idle, door closures, brief conversations, footsteps on gravel/boardwalks).
 - People using lodge decking/paths (speech at conversational/raised levels; short, intermittent bursts rather than steady noise).
 - Occasional on-site servicing (trolleys, housekeeping carts).

Applicability note: BS 4142 is primarily intended for industrial/commercial sound. Purely social/people noise is not always a perfect fit; however, it is common practice to use a BS 4142-style rating approach to aggregated activity noise when it is reasonably regular and controllable by management (e.g., curfews, quiet hours, surface selection). For sporadic impulsive maxima (e.g., a single door slam), LA_{max} controls/operational management are more appropriate than LA_{eq}-based rating.

5. Assessment methodology

5.1. Background sound levels:

Representative baseline for rating comparison (from 2023 monitoring): - Day (07:00–19:00): LA_{90,r} = 36 dB (typical); envelope 33–38 dB.
- Evening (19:00–23:00): LA_{90,r} = 33 dB (typical).
- Night (23:00–07:00): LA_{90,r} = 28 dB (typical); occasional minima ≈ 22–25 dB.

5.2. BS 4142 rating framework (fixed/controlled sources):

For each relevant source:

1. Determine the specific sound level L_{Aeq,T} at each receptor façade for the relevant reference period (day: 1-hr; night: 15-min).
2. Apply acoustic features corrections where appropriate: +2–6 dB for tonality/impulsivity/intermittency/other if perceptible.
3. Compare the resulting rating level L_{Ar,Tr} with the background LA_{90,r} for the same period.
4. Interpret per BS 4142: rating ≈ background → *low impact*; +5 dB → *adverse*; +10 dB → *significant adverse* (subject to context).

5.3. Aggregated activity noise – management-led limits:

Where LA_{eq}-based rating is less representative (e.g., people outdoors), at-receptor design targets are set to preserve amenity and avoid sleep disturbance:

- Daytime external amenity (gardens): Aim to keep total site-related contribution ≤ 50 dB LA_{eq,16h} at receptor gardens (aligning with BS 8233/ProPG desirable external criterion).
- Evening quiet-hours (after 21:00): Target site contribution at façades ≤ 35 dB LA_{eq,1h}; no clearly audible tonal/impulsive character.
- Night (23:00–07:00): Target façade contribution ≤ 30 dB LA_{eq,15min} *and* LA_{max,F} ≤ 45 dB inside bedrooms with windows ajar (proxy external trigger at façade ≈ 60 dB LA_{max,F} allowing ~15 dB window attenuation).

These limits are achievable through layout and management without relying on large barriers, given the low activity volumes expected for 6 lodges.

6. Outline calculations & design implications

6.1. Fixed plant (example specification method):

- Design rating limits at façades:

- Day: $L_{Ar,Tr} \leq 36$ dB
- Evening: $L_{Ar,Tr} \leq 33$ dB
- Night: $L_{Ar,Tr} \leq 28$ dB
(i.e., do not exceed representative background.)
- Feature corrections: If plant is tonal or intermittent, allow +4 to +6 dB correction in the design margin (i.e., size equipment such that *specific* L_{Aeq} is 6 dB below the limits above, or fit *verified* tonal mitigation and automatic night set-back modes).
- Back-calculation: Once distances/layout are fixed, supplier sound power levels (L_{WA}) shall be checked using hemispherical divergence (-8 dB at 2 m; then -6 dB per distance doubling), + barrier/ground effects as applicable, to meet the façade limits above with correction included.

6.2. Activity noise – arrivals/departures & outdoor speech:

- Provide parking and footpath routes away from the nearest façades, with surfaces selected for quiet pass-bys (bound gravel/resin or smooth tarmac rather than loose gravel; rubber buffers to gates).
- Where a deck faces a receptor within very short offsets (<20–25 m), orient the deck to face away and use close-board fencing on the receptor side.
- With the above and a modest arrival rate for a 15-lodge site, typical façade L_{Aeq} contributions in the evening *design hour* remain within the 35 dB $L_{Aeq,1h}$ target; individual door-slam maxima can be curtailed by quiet-hours and soft-close measures (see §7).

7. Mitigation and management package (commitments)

7.1. Quiet-hours policy (conditionable):

- 21:00–08:00: outdoor decks/paths used quietly; no amplified music outdoors at any time; no gatherings on decks after 23:00.
- 23:00–07:00: arrivals/departures discouraged; late check-ins by prior arrangement only and escorted to minimise noise.

7.2. Remote on-call site manager/warden with published 24/7 phone number for neighbours; incident log retained for LA inspection.

7.3. Parking bays and main circulation clustered centrally or screened; bound surfaces on drives/paths; rubber stops on gates/lids; soft-close ironmongery.

7.4. External plant not to operate above background at receptors (per §6.1). Use night set-back and inverter/EC fans; select low-tonality units; mount on anti-vibration pads; place behind the lodge mass or screens, not on the receptor side.

7.5. Collections and glass disposal 08:00–19:00 only; housekeeping carts with rubber wheels; no metal-on-metal impacts outdoors during quiet hours.

7.6. Clear “Respect Our Neighbours” messaging in each lodge and on booking confirmations; engine-off at parking; guidance on door closure; no fireworks and no outdoor PAs.

8. Post-completion verification & triggers

- 8.1.** Within 8 weeks of first occupation, undertake a short attended survey at the nearest façades during a representative evening hour and night 15-min period with a normal level of on-site activity. Confirm that:
- BS 4142 rating levels from any fixed plant do not exceed the background values adopted in §5.1 (or updated site-specific LA90 measured on the night).
 - Site-related LAeq contributions in the evening design hour are ≤ 35 dB at façades, and night LAmax at façades are ≤ 60 dB for typical manoeuvres/door closures.
- 8.2.** If any trigger is exceeded at a receptor, implement further measures (e.g., additional screening, relocating bays, revising quiet-hours) and re-test.

9. Conclusions

- 9.1.**
- The development lies in a low ambient sound environment; therefore, good design and active management are essential to protect neighbour amenity.
 - By limiting BS 4142 rating levels to at or below background at the nearest façades, and by adopting the quiet-hours, layout, and screening measures set out above, the operational phase is expected to result in low impact in BS 4142 terms, with acceptable external amenity consistent with BS 8233/ProPG guidelines.
 - The package is readily conditionable and can be verified post-occupation.
- 9.2.** Recommended conditions (summary):
- a. Fixed external plant rating levels at any existing dwelling façade shall not exceed measured background sound level (LA90) for the corresponding period, with penalties applied per BS 4142:2014+A1:2019.
 - b. A Site Noise Management Plan shall be submitted and approved prior to first use, covering quiet-hours, layout/screening, guest information, and supervision/complaints procedure.
 - c. A post-completion verification survey shall be submitted to the LPA demonstrating compliance with A and the design targets in §5.3.