Accrington Stanley Football Club
Planning Review and Technical Report

Technical Report

31017/RP-1

16 January 2024

For:
Hyndburn Borough Council
Scaitcliffe House
Accrington
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Hann Tucker Associates

Technical Report
Report 31017/RP-1

Document Control

Rev	Date	Comment	Prepared by	Authorised by
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Technical Report
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Attachments

1.0 Introduction

This Report relates to ongoing noise dispute between Accrington Stanley Football Club (ASFC) and nearby residential properties. It is understood that ASFC constructed an extension to the side of their existing stadium which includes 2No. hospitality premises that operate amplified music events. It is events from these venues that have been subject to noise complaints by nearby residents.

A Noise Abatement Notice was issued by Hyndburn Borough Council on the 4 October 2022 following attendance of a Council Noise Officer to a nearby property to investigate the noise from an event on 24 September 2022. The event observed was deemed to be a noise nuisance.

Since the issue of Noise Abatement Notice, there has been correspondence from 3No. different companies regarding the noise issues, 2No. of which included Noise Management Plans and suggested acoustic criteria.

Hann Tucker Associates (HTA) was appointed by Hyndburn Borough Council on 13 September 2023 to undertake a review of the planning history associated with the development and prepare a Technical Report setting out the findings. HTA received a supplementary appointment on 22 September 2023 and 9 November 2023 to undertake noise monitoring across 3No. separate events at the premises as well as within nearby residential premises (including gardens) to further inform subsequent assessments.

This Report therefore sets out a review of the planning/site history, a technical review of relevant available information prepared by others, any assumptions/limitations of the information received/reviewed, and ultimately determines suggested noise limits with consideration to the aforementioned points and the findings of our recent noise survey.

2.0 Acoustic Terminology

For an explanation of the acoustic terminology used in this report please refer to Appendix A enclosed.

3.0 Qualifications

This report has been prepared by Tom Bonnert, on behalf of Hann Tucker Associates. Individual qualifications/accreditations are confirmed below, alongside company specific accreditations.

Name:	**Mr Tom V Bonnert**
Position:	Senior Associate (Manchester)
Experience:	8 years
Qualifications:	BEng (Hons) Acoustics Engineer – 2:1 Classification
	Member of the Institute of Acoustics (MIOA)
Company Credits:	UKAS accredited for Sound Insulation Testing (No. 4083)
	Members of the Association of Noise Consultants (ANC)
	Sponsor members of the Institute of Acoustics (IOA)
	ISO 9001 accredited
	Members of the Institute of Environmental Management & Assessment
	Members of the UK Environmental Law Association
	CHAS Accredited Contractor

4.0 History and Context

4.1 Relevant Documents

4.1.1 Decision Notice (Application ref 11/20/0172)

Planning permission was granted for the proposed development, which was described in the notice as follows:

> *"Demolition of existing building and associated turnstiles, entrances and temporary buildings to rear of South Stand; Construction of replacement / upgraded player and manager areas, offices, hospitality areas, supporters bar and turnstiles; and new high level television camera gantry"*

There were a number of planning conditions (and reasons) stipulated for the consented scheme, with Planning Condition 2 stating that:

> *"The development shall be carried out in accordance with the following plans and documents:*

…….

Noise Assessment Mill Goodall 102332 June 2020

……

Reason: For the avoidance of doubt and to enable Hyndburn Borough Council to adequately control the development and to minimise its impact on the amenities of the local area and to conform with Policies Env6 & Env7 of the Hyndburn Core Strategy"

4.1.2 Miller Goodall Noise Assessment Report, Report Number: 102332, dated 9 June 2020

The Noise Assessment report referenced in Planning Condition 2, was prepared as part of the supporting information associated with the initial planning application. For clarity, the initial application allowed for a single "venue" and this is what was assessed as part of the Millier Goodall Report.

The Report was prepared during the summer of 2020, during a time of national COVID restrictions. As such, no environmental noise survey was undertaken and, instead, an alternative assessment method was proposed based on typical Manchester City Council (MCC) planning guidance. This method is based on 'absolute' criteria, where music noise levels are compared to fixed noise levels rather than compared to the existing background noise. As such, the approach presented in the report was not reliant on a noise survey, and the completion of one would not affect the outcome of the assessment.

The proposed internal noise limits included in the Miller Goodall Report are based on achieving 5 dB below MCC guidance of 47dB and 41dB at 63Hz and 125Hz respectively (which originate from the DEFRA NANR 45 study). This 5 dB reduction of the typically used criteria was noted *"given the uncertainty of existing background sound levels at noise sensitive receptors (NSRs) and to add some degree of safety into our assessment"*.

Miller Goodall suggested these limits would be *"likely to ensure that internal entertainment noise from the proposed south stand redevelopment would be 'inaudible or virtually inaudible' within the receptors at any time of the day or night, and therefore time restrictions to limit entertainment noise breakout may not be considered necessary."*

The Miller Goodall assessment limits set at 42 dB at 63Hz and 36 dB at 125Hz internally were suggested to be achieved provided the external noise level due to music noise be no more than 52 dB at 63 Hz and 46 dB at 125 Hz assuming 10 dB of attenuation from an open window.

An assessment of noise break-out from the proposed development was carried out using Noise modelling prediction software based on the following assumptions/design considerations:

- Internal level within the ASFC venue(s) of 95 dBA with a suitable octave band spectrum for live music;
- External walls being lightweight cladding with block internally;
- Roof being lightweight with mass barrier ceiling;
- Double glazing to North elevation being R_w 37 dB;
- Direct access doors rated at R_w 50 dB with a note suggesting that this door space is "very high" and would need specialist design;
- Lobbied doors rated at R_w 30 dB.

The conclusions to the Miller Goodall Report determined that the suggested noise limits within the NSRs could be achieved with the above noise mitigation/management measures in place.

The acoustic criteria, and approach to the noise impact assessment adopted by Miller Goodall is considered to be robust in its basis, and we would agree that if complied with should provide sufficient protection against music noise impact (subject to appropriate site management). The limitation of their approach, however, was that there were no mid-frequency noise limits suggested.

4.1.3 Readstone Construction Management Plan, Revision A, dated 24 November 2021

No acoustic comments relevant to this Report.

4.1.4 Letter from Hyndburn Council to Campbell Driver Partnership (Architects), dated 9 September 2022

Following a meeting between ASFC and various persons from Hyndburn Council, held on 1 September 2022 to discuss the issues of noise, a letter was issued on 9 September 2023 setting out Council concerns about the development.

This letter raised two primary points.

- A mass barrier ceiling shown as part of the application (within the Miller Goodall Noise Assessment, and within drawing reference 014A) has not been provided. On this point, the letter went on to conclude that:
    - *"The development of the south stand has not been undertaken in accordance with the approved plans / sections nor the recommendations in the Noise*

Assessment, the construction of the roof and ceiling being the most apparent departure. The ceiling has been constructed without plasterboard and without insulating material (mineral wool) in the void. Whilst I agree that the interior of the building looks good and is a pleasant place to visit, the construction does not provide sufficient acoustic insulation meaning that sound within the building can be heard outside the building."

- The east side of the south stand was developed into further hospitality areas rather than player changing and a club shop as shown on the approved plans (planning permission 11.20.0172). On this point, the letter went on to conclude that:
    - *"A new, full, planning application should therefore be submitted with all the necessary supporting plans and statements. It should also include details of the television gantry that has been erected since this is different to the one that was approved. The key to the determination of this application will be the extent to which you are able to demonstrate that noise from the development will be successfully mitigated."*

This letter also acknowledged that Miller Goodall had been reapproached by ASFC, and were to prepare a supplementary Noise Breakout Assessment as part of determining options to mitigate the noise breakout (ie combination of management and/or noise enhancement options).

4.1.5 Noise Abatement Notice, reference 006403

Noise Abatement Notice and accompanying cover letter Issued on 4 October 2022. Council Noise Officer attended a nearby residential property to observe noise emanating from the premises on noise on 24 September 2022. They deemed the observed music noise to be a statutory nuisance hence the issue of the abatement notice.

4.1.6 Email Chain titled *"Coleys Bar – Abatement Notice"*

Email chain between 4 November 2022 and 14 November 2022, with the first email in the chain noting a breach in the Abatement Notice during an event observed on 29 October 2023, and requesting an update on timescales for the Miller Goodall Noise Breakout Assessment.

The Miller Goodall high-level review of the situation is included within the email dated 11 November 2022, where they note that the predicted internal noise levels within nearby dwellings due to music noise breakout would exceed the recommended noise criteria included in the original planning assessment as the mitigation measures originally assessed have not been provided.

They go on to note that a reduction in operational noise level (reduced to circa 83 dBA) would be necessary to comply with the planning criteria, or an alternative approach of enhancing the building structure to limit the level of noise break-out (notably enhancements to the roof structure) could be investigated.

Finally, the Miller Goodall high-level summary suggests some practical management tactics to assist in reducing the noise impacts. The suggestions presented in their summary are considered reasonable.

4.1.7 Artnovation Acoustic Recommendation, dated 10 February 2023

Artnovation prepared a Report recommending the addition of sound absorbent treatment to reduce the reverberation time in the bar area. Their Report, however, does suggest any sound insulation advice and would unlikely reduce the levels noise break-out.

Based on a letter sent from Hyndburn Borough Council, which appears to be in response to the retrospective planning application (ref 11/23/0060), the Artnovation Report was submitted as part of the supporting acoustic assessment. There was, however, concerns regarding the contents of this Report from a planning perspective, and its applicability to typical planning noise policies and assessment methods. In our view, the Report does not provide any notable assessment relating noise breaking out of the venue and is not applicable as supporting information from a planning perspective.

4.1.8 GB Integrated Systems, Sound Levels, dated 18 May 2023

A document titled “ASFC Sound Level Test 20230518” has been provided which sets out noise levels measured over the course of an event held on 18 May 2023. It refers to 3no. locations where noise levels were measured, Point 'A' (Internal), Point 'B' (External Entrance) and Point 'C' (External Fence).

There is however no information provided in this document to indicate what equipment was used to undertake the measurements, nor any information on the personnel who undertook the measurements.

There is no assessment to any proposed criteria, so notwithstanding the lack of equipment/personnel information which reduces the reliability of the data (unless clarifications is provided), the document only provides a high-level summary on likely noise levels. We would suggest this information is treated with some caution unless further clarification is provided.

4.1.9 Wardell Armstrong Noise Management Plan, dated 21 July 2023

Wardell Armstrong prepared a Noise Management Plan (NMP) to determine noise criteria to be met during events at Coley's. Their Report does not make reference to events within the 1968 Lounge.

The basis of the assessment criteria referenced within the Wardell Armstrong NMP was the guidance set out in the "Noise Council's Code of Practice on Environmental Noise Control at Concerts (1995), proposing the following criteria (both absolute and relative):

> *"The recommended music noise limit for 1-3 events per year is 75dB LAeq,15min.*
>
> *For 4-12 events per year, the recommended music noise limit is set at 15dB(A) above the background noise level over a 15-minute period.*
>
> *The live event noise is expected to start around 19:00 and end between 22:30 and 23:00. Typical background noise levels between at these times has been measured as 39dB LA90,t.*
>
> *The music noise criteria to be met at the nearest residential receptors are as follows:*
>
> - *Three events in any 12-month period 75dB LAeq,15min*
> - *Remaining nine events in any 12-month period 54dB LAeq,15min*
>
> *Music noise events at ASFC on non-matchdays, that fall outside the 12 identified annual functions, would be controlled such that the music noise at the nearby receptors does not exceed the background noise level, plus 5dB 44dB LAeq,15min"*

The acoustic criteria, and approach to the NMP adopted by Wardell Armstrong is likely too relaxed in its assessment of music in this context. As the Code states, *"this Code is not designed to address the question of environmental noise arising from discotheques, clubs and public houses"*. Whilst the ASFC ground is an open air stadium, the music events are held in small internal venues that have been constructed with this use in mind.

As such, we feel the proposal of limits based on Noise Control at Concerts Code of Practice would unlikely be suitable in this scenario where noise complaints have already been raised, and an Abatement Notice issued.

4.1.10 Wardell Armstrong Letter, dated 19 September 2023

Wardell Armstrong prepared a letter to provide further information to HBC on noise emissions from Coley's bar (the venue) during non-matchday events. From a review of the letter, nine points had been raised by HBC in which Wardell Armstrong have provided responses.

Point 1 relates to what data and evidence has been used to demonstrate the recommended thresholds applied by the Concerts Code can be achieved. Wardell Armstrong have made reference to the levels measured by GB Integrated Systems (see Section 4.1.8). We have highlighted that further information should be provided on the GB Integrated Systems survey to confirm how these levels have been measured/obtained, and whether they can be relied upon as a means to demonstrate compliance (ie was it performed with calibrated reference equipment to a procedure).

Point 2 relates to applicability of the standards Wardell Armstrong have suggested (ie Concert Code). We would agree with Wardell Armstrong's statement that WHO is not an appropriate guide for this scenario, however they go on to note the following (our comments on each statement are also provided):

- "*the venue can occasionally operate as a public house, during which internal noise levels would not be audible outside*"
    - This statement is very absolute, and based on observations from site visits conducted by HTA, we would question whether public house events would be "inaudible outside" particularly given the audibility of patrons observed.
- "*venue occupies in the town of Accrington as a Stadium*"
    - The venue is defined by Wardell Armstrong as the Coleys bar. It is considered tenuous to refer/define this as a stadium. It may be attached to a football stadium, but the Coleys demise operates as a bar, with the noise complaints originating from its use as a premises hosting live music or amplified music events, a venue that has been constructed with this use in mind.
- "*that a Stadium venue, holding a limited number of events per year to be assessed in accordance with the Noise Council Code of Practice*".
    - As per our comment in Section 4.1.9, the Code is note intended to address "*noise arising from discotheques, clubs and public house".*

Points 3 relates to the roof enhancements and the Artnovation finishes treatment, though Wardell Armstong do not provide response in their letter.

Point 4 relates to the acceptability to ASFC of planning conditions limiting noise levels after 23:00, and how Wardell Armstrong feel this would work outside the 12no. events per year. Wardell Armstrong state "all live music will end at or before 23:00, and that during the night-time period "any music played in the venue would be at background level which would not be audible outside the venue". The latter is not what we have observed during our site attendance so would question whether this is a realistic statement/approach.

Point 5, no further comment from Hann Tucker.

Point 6 relates to events expected within the 12no. events, and above the 12no. events. Wardell Armstrong suggest the 12no events would include events with a live band and events with a DJ. Above the 12no. events they suggest would include "*quizzes, awards dinners, memorial dinners, birthdays dinners, exhibitions, charity events and small indoor sports events. Such events would typically be afternoon and early evening events, with regulated background music and occasional announcements over the indoor PA system. Music noise would be unlikely to be audible externally or at sensitive receptors*". For regular events, such as dinners/birthday parties, we have observed that they are clearly audible during our site attendance, so again, we would question whether this is a realistic statement/approach.

Point 7 relates to the acceptability to ASFC of noise monitoring during events, to which Wardell Armstrong confirm. This is positive, thought the agreed limiting levels still need to be suitably determined/enforced.

Point 8 relates to low frequency noise and why this was not included in the Wardell Armstrong Noise Management Plan. Wardell Armstrong note that low frequency noise will form part of the monitoring, and have then discussed the Miller Goodall 2020 application which referred to the DEFRA NANR 45 guidance, notably stating that the Miller Goodall Report is likely overly onerous due to a lack of baseline data. We would agree in light of the detailed noise surveys conducted by HTA (herein within this Report) that there is arguably scope to relax these limits suggested by Miller Goodall, but it is important that they do exist at an appropriate level.

Point 9 relates to BS 4142 and why this has not been used. We have no further comment to add to the Wardell Armstrong response.

5.0 Executive Summary of Past Correspondence

Based on the review of the information set out in Section 4.0 we have compiled a summary most pertinent technical acoustic points for consideration. These directly relate to the suitability of the assessments completed to date so the relevance should be of note.

Planning permission for the original planning application (application ref 11/20/0172) was granted subject to a number of planning conditions, with Condition 2 referencing the Miller Goodall Report. This report provided a noise breakout assessment to the worst affected noise sensitive receptors, setting out noise insulation measures required to achieve objective limits (low frequency only) whilst also allowing an appropriate operational noise levels for the venue. The objective limits were reduced by 5dB below typical limits suggested by other LPAs (ie Manchester City Council), so arguably there is scope to relax these slightly.

From the subsequent correspondence between HBC and ASFC, it is clear that insufficient acoustic insulation provisions have been incorporated in the now operational facilities, and that the operational facilities are larger than the original planning application consent.

A retrospective planning application has since been made (application ref 11/23/0060) to reflect the as built buildings, and was accompanied by 2No. Noise Reports (Artnovation and Wardell Armstrong). The Artnovation Report does not include relevant planning based assessments so is not considered sufficient to adequately assess noise in this context. Whilst the Wardell Armstrong NMP contains an assessment that considered the prevailing noise levels at the site, it relies upon criteria that is ultimately considered overly lenient given the site context and scenario.

As such, there is likely a middle ground to be struck between the completed noise assessments, which can be supported by the noise monitoring exercise undertaken by Hann Tucker during 3No. events at ASFC, completed in October and December 2023.

6.0 Noise Impact Assessment

6.1 Survey Overview

Noise monitoring was undertaken by Tom Bonnert, Senior Associate, BEng(Hons) MIOA and Michael Hartley, Senior Consultant, MEng MIOA, over the course of 3No. evening/night-time periods. The evenings surveyed were Friday 13 October 2023, Saturday 14 October 2023, and Friday 1st December 2023.

The following events were held in each of the respective venues:

- Friday 13 October - Coleys bar - Oom-pah Band event with amplified music in between sets.
- Saturday 14 October - 1968 Lounge - Private function with 80's disco event (amplified music).
- Friday 1 December – Coleys Bar & 1968 Lounge – Private Christmas Parties in both venues (amplified music).

An Environmental Control Officer was in attendance during the events on Friday 13 October and Saturday 14 October, and during the events on Friday 1 December. Each time, the officers were in attendance to make observations of the noise impact at receivers.

The purpose of the surveys was to establish noise levels at a number of locations during event operations (see below list). The residential receptors surveyed during October were as determined and advised by HBC, and in the case of the receptor for the survey of the 1968 Lounge on Saturday 14 October, it was not the nearest residential receptor. As such, on Friday 1 December the residential property surveyed was a property in closer proximity to the 1968 Lounge:

- Internally within the 2No. venues at ASFC (ie Coleys and the 1968 Lounge);
- at the end of the residential gardens (boundary);
- at 1m from the facades of the residential receptors;
- and internally within a rear room (ie facing the venues) of the residential receptors.

The microphone at each location was attached to a tripod, approximately 1.2 metres above ground level. Each sound level meter was located in an environmental case with the microphone connected to the sound level meter via an extension cable. Each microphone was fitted with a windshield.

The instrumentation used during the survey is presented in the table below:

Description	Manufacturer	Type	Serial Number	Calibration
Type 1 Data Logging Sound Level Meter	Larson Davis	LxT	5104	Calibration on 30 May 2023
Type 1 Data Logging Sound Level Meter	Larson Davis	LxT	5111	Calibration on 30 May 2023

Description	Manufacturer	Type	Serial Number	Calibration
Type 1 Data Logging Sound Level Meter	Larson Davis	LxT	4086	Calibration on 26 May 2023
Type 1 Data Logging Sound Level Meter	Svantek	971	72540	Calibration on 31 May 2023
Type 1 Sound Level Meter	Bruel & Kjaer	2250	2600445	Calibration on 5 December 2022
Type 1 Sound Level Meter	Bruel & Kjaer	2250	3025397	Calibration on 5 September 2023
Type 1 Calibrator	Larson Davis	CAL200	3083	Calibration on 27 March 2023
Type 1 Calibrator	Bruel & Kjaer	4231	2115545	Calibration on 5 December 2022
Type 1 Calibrator	Bruel & Kjaer	4231	2271905	Calibration on 5 September 2023

Each sound level meter, including the extension cable, was calibrated prior to and on completion of the surveys. No significant changes were found to have occurred (no more than 0.3 dB).

6.2 Noise Impact Overview

Our technical assessments following the completion of the noise monitoring are summarised in the following sections. The assessment provides suggested operational noise limits within the AFSC venues with a view to abating the noise nuisance.

The suggested operational noise limits have been determined following objective calculation methods. It is, however, acknowledged that there is no clearly defined method in determining what constitutes a noise nuisance (ie no truly objective method), so the suggested operational noise levels should still be viewed as a 'way forward/starting point'.

It is important to note the subjective nature of nuisance, and it would not be unreasonable to expect that it may be possible that the suggested operational noise limits could be developed and relaxed through on-site calibration of a noise limiter, for example. In our experience a cooperative approach during the commissioning of the electronic noise limiter is best practice.

Detailed calculations have been excluded in the interest of brevity; however, a summary of key assessment approach has been provided.

6.3 Relevant Literature

6.3.1 Statutory Noise Nuisance

S79(1)(g) of the Environmental Protection Act 1990 defines a statutory nuisance as *"noise emitted from a premises so as to be prejudicial to health or a nuisance".* A duty is placed on the Local Authority to serve an abatement notice under S80 if it becomes satisfied that a statutory nuisance exists.

When considering a noise nuisance, the following factors should generally be considered:

- If straining to hear something it is generally considered not a nuisance, however,
- Time, duration, type of noise, frequency, location, continuous or repetitive, and based on current rather than historical experience are all factors referred to judging nuisance;

Although there is no clearly defined method in determining what constitutes a noise nuisance (ie no objective method), to inform the objective theoretical exercise covered in this Report reference has been made to the relevant literature as summarised in the following sections.

6.3.2 Defra NANR45: Assessment of Low Frequency Noise Complaints

This document aims to recommend an objective method for assessing low frequency noise suitable for use by Environmental Health Officers in the UK. Criteria already in use in Germany, Sweden, Denmark, Netherlands and Poland were reviewed and compared against the experience from these countries in applying the criteria, which was found to be generally positive.

The above study was supplemented by field and laboratory studies to subsequently inform the proposed criteria (Moorhouse Curve) in third octave bands between 10 Hz and 160 Hz.

For the assessment of low frequency music noise through external building fabric, it is generally more practical to consider the 63 Hz and 125 Hz octave bands due to the difficulty in obtaining third octave band sound insulation performance data for various construction materials.

When logarithmically summed, the Moorhouse Curve concludes the following limits:

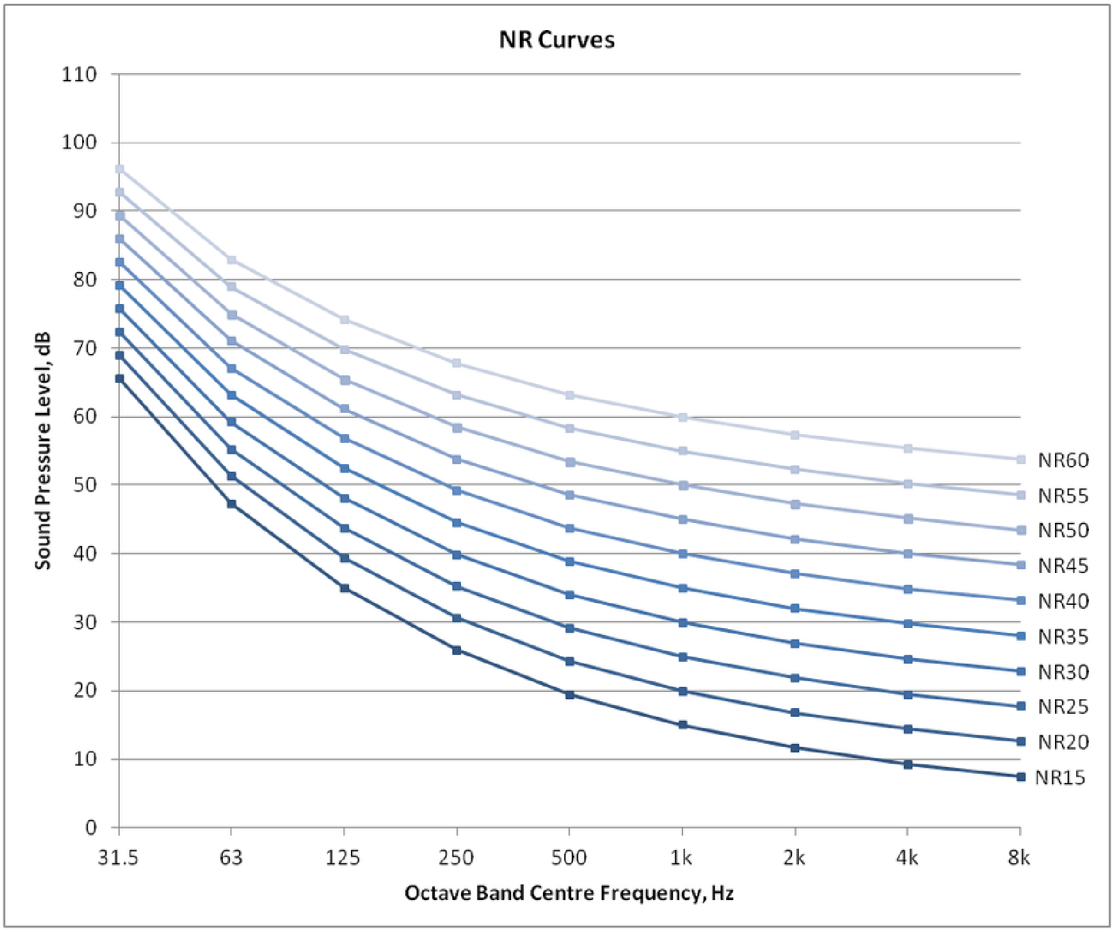
- 65 dB L_{eq} at 31.5 Hz;
- 47 dB L_{eq} at 63 Hz;
- 41 dB L_{eq} at 125 Hz.

It is recognised that the scope of this paper does not technically cover entertainment noise but in absence of any other guidance it is widely used for this purpose by local planning authorities.

In the absence of objective methods in determining noise nuisance, and given that the above limits are commonly used in noise assessment of residential toward music noise, the above limits applicable in receiver locations (ie bedrooms) are considered to be a 'reasonable' basis to inform suggested noise limits within a source location (ie venue).

6.3.3 Noise Rating (NR) Curves

NR curves provide a method of assessing the frequency dependent sound levels within a space. It enables a single figure result to be established based upon a weighting curve roughly in line with the equal loudness curves. The following figure sets of NR reference curves.



Noise Rating (NR) Reference Curves

The relevance of NR curves to this Report is that they can be used to define limits at different octave bands, enabling character of noise to be defined or controlled.

6.3.4 ProPG Gym Acoustic Guidance Document

Although this guide is intended to provide guidance on noise and vibration assessments, this is the most recent formalised guide that extends to cover music noise as well.

The guide utilises G Curves, which allow 1/3 octave control toward music noise. There does, however, remain the over-riding point that the selected G Curve used to inform subsequent assessments (ie background within residential demise in this context) is subject to user interpretation.

Loosely based on the NR curve, when log-summed for each centre band frequency the G Curve would approximate to the NR value (G Curves being within 0.3 to 1.8 dB, depending on octave band centre frequency).

The guide does suggest example criteria that can form the basis for impact assessment, which covers airborne noise (ie music noise), and covers receptor types of residential status. See below excerpt.

Table 2: Guidance Internal Sound Target Criteria for Gym Activity – Residential & Other Areas

Receptor type	**Guide Criteria** (for third octave band values plots against the stated G curve - see Figure 2)	
	Airborne Sound (e.g., music) $L_{eq,T}$ (31.5Hz to 8kHz)	Heavy Impact Sound $L_{max,F}$ (31.5Hz to 8kHz)
Commercial Offices	G25-G35	G35-G45
Retail Areas	G30-G45	G35-G50
Residential Areas	G15-G25 (day) G10-G20 (night)	G20-G25 (day) G15-G20 (night)

6.3.5 HSE Health and Safety Topics: Noise

The UK Government's Health and Safety executive website states the following in regard to noise for audiences at events:

> "*Unlike workers, there is no specific legislation setting noise limits for the audience exposure to noise. However, HSE strongly recommends that the A-weighted equivalent continuous sound level over the duration of the event ($L_{Aeq,T}$) in any part of the audience area should not exceed 107 dB, and the C-weighted peak sound pressure level should not exceed 140 dB.*"

6.4 Proposed Noise Limits

6.4.1 Considering Internal Noise Within Receptors – Windows Closed

The starting point to the objective approach presented herein is to establish objective targets within the residential demise. Considering the research into the perception of low frequency noise complaints (Defra NANR 45 Paper), and typical internal noise targets within bedrooms, the suggested internal noise targets within the residences are presented below.

	Octave Band Frequency, Hz								
	31.5	**63**	**125**	**250**	**500**	**1k**	**2k**	**4k**	**dB(A)**
Residential Internal Noise Target (dB, $L_{eq,T}$)	65	47	41	26	19	15	12	9	**30**

The above limits consider the typical "uncapped" events taking place within the venues. The limits consider an 'absolute' assessment method, whereby music noise is assessed to a fixed noise limit/target. However, it should be noted that in quiet bedrooms, the above noise levels are still likely to be audible.

6.4.2 Considering External Noise at 1m from Windows to Receptors

An alternative to the approach set out in Section 6.4.1, which assesses to internal noise targets with windows shut, is to consider the external noise level at 1m from the window of a residential receptor. This approach is more common when considering introduction of a noise emitter to an area with existing and established residential receptors.

Considering the research into the perception of low frequency noise complaints (Defra NANR 45 Paper), and typical background (L_{90}) noise levels measured in the absence of music noise, the suggested external noise targets at 1m from the window of the residences are presented below.

	Octave Band Frequency, Hz								
	31.5	**63**	**125**	**250**	**500**	**1k**	**2k**	**4k**	**dB(A)**
External Noise Target at 1m from Window of Residential Receptor (dB, $L_{eq,T}$)	75[1]	57[1]	51[1]	33	33	34	27	18	**41**

Note 1 External noise limits at these frequencies are suggested to be increased considering the measured backgrounds are unnecessarily onerous. They are therefore based on the internal noise targets noted in Section 6.4.1, with the attenuation of a partially open window added to them (ie 10 dB)

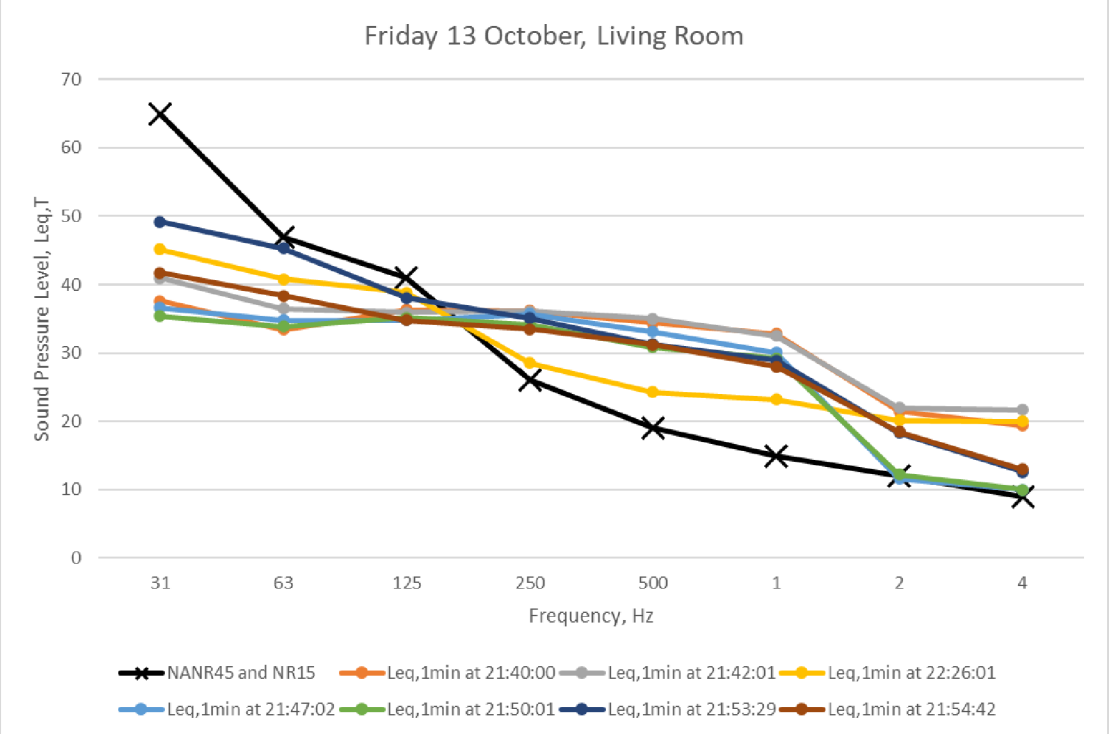
The above limits consider the typical "uncapped" events taking place within the venues. These limits consider a 'relative' assessment method, whereby music noise is assessed to the prevailing background noise level. For capped events, up to 30No per year, the proposed limits could be relaxed by up to 5dB per octave band, including overall dBA.

6.5 Measured Internal Noise Levels within Residential Receptors

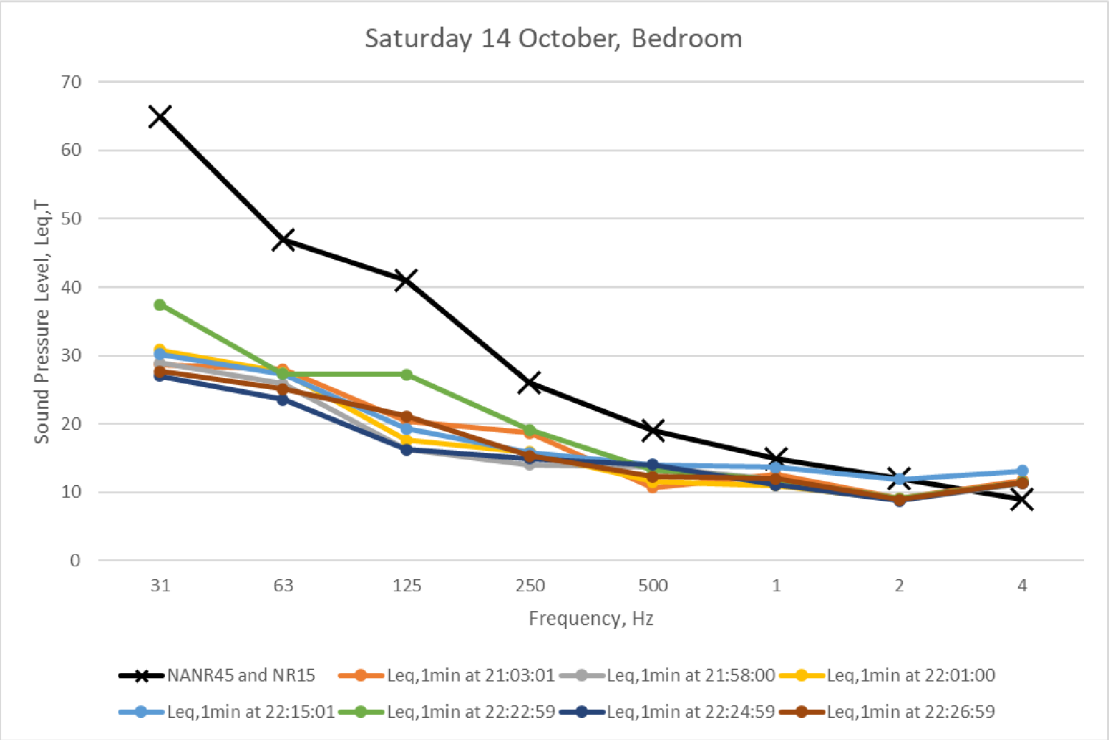
Considering the internal noise targets noted in Section 6.4.1, the following graphs plot internal noise levels measured within the residential dwellings with windows closed during the events held at the ASFC venues. Noise levels have been averaged over 1 minute periods, which were considered to be equivalent to that of a 5 minute level as normally used for music noise. The shorter duration also assisted in reducing extraneous noise from non-music sources.

A summary of what the following graphs present is as follows:

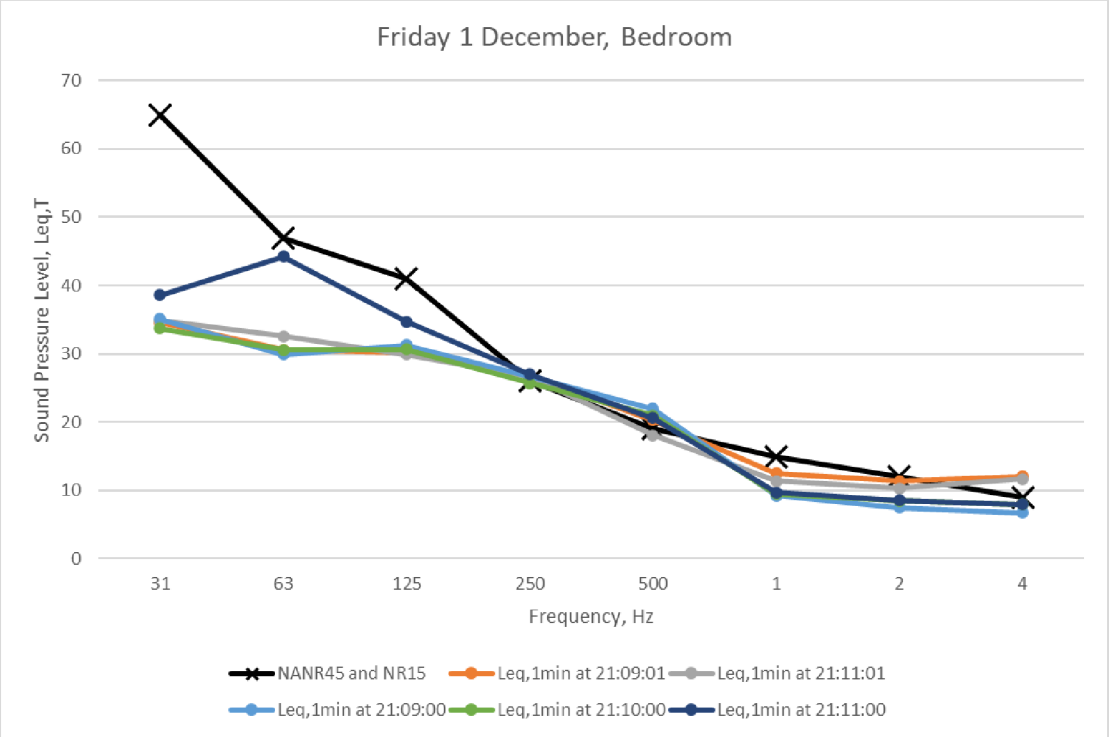
- Friday 13 October 2023 is an event held in Coleys bar, during an Oom-pah Band event.
- Saturday 14 October 2023 is an event held in 1968 Lounge, during a private function with 80's disco event.
- Friday 1st December 2023 is events held in both the 1968 Lounge and Coley's Bar simultaneously, these events were both Private Christmas parties.



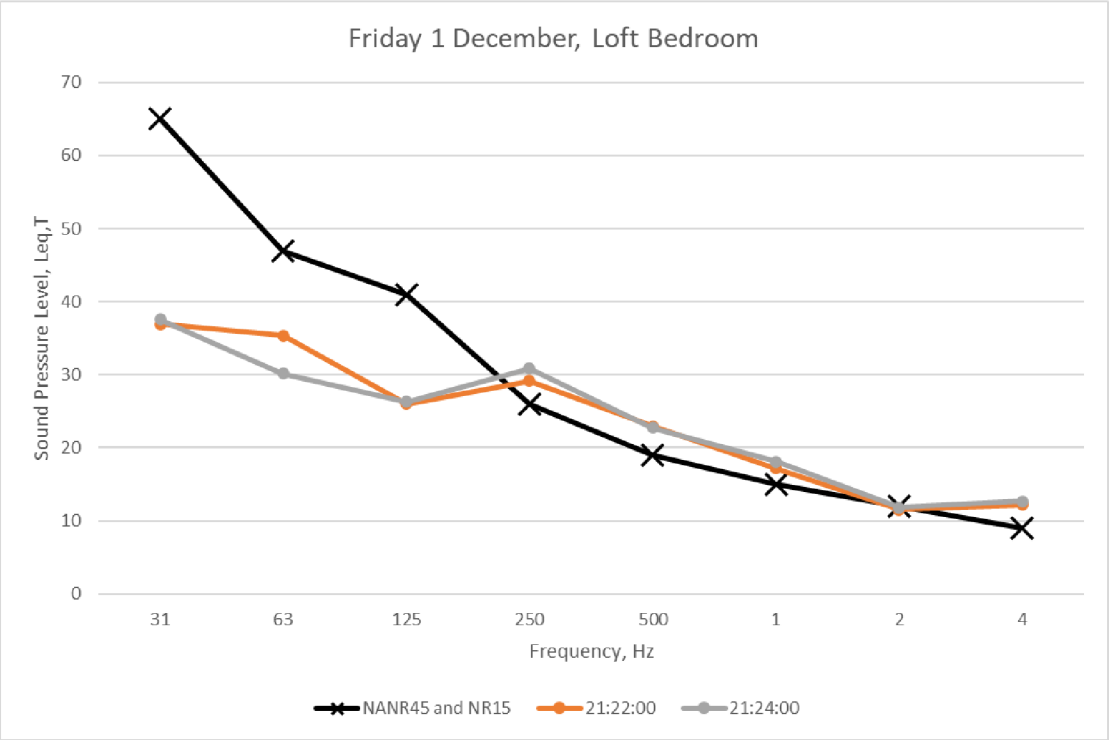
Measured internal noise levels compared to bedroom targets (Friday 13 October 2023)



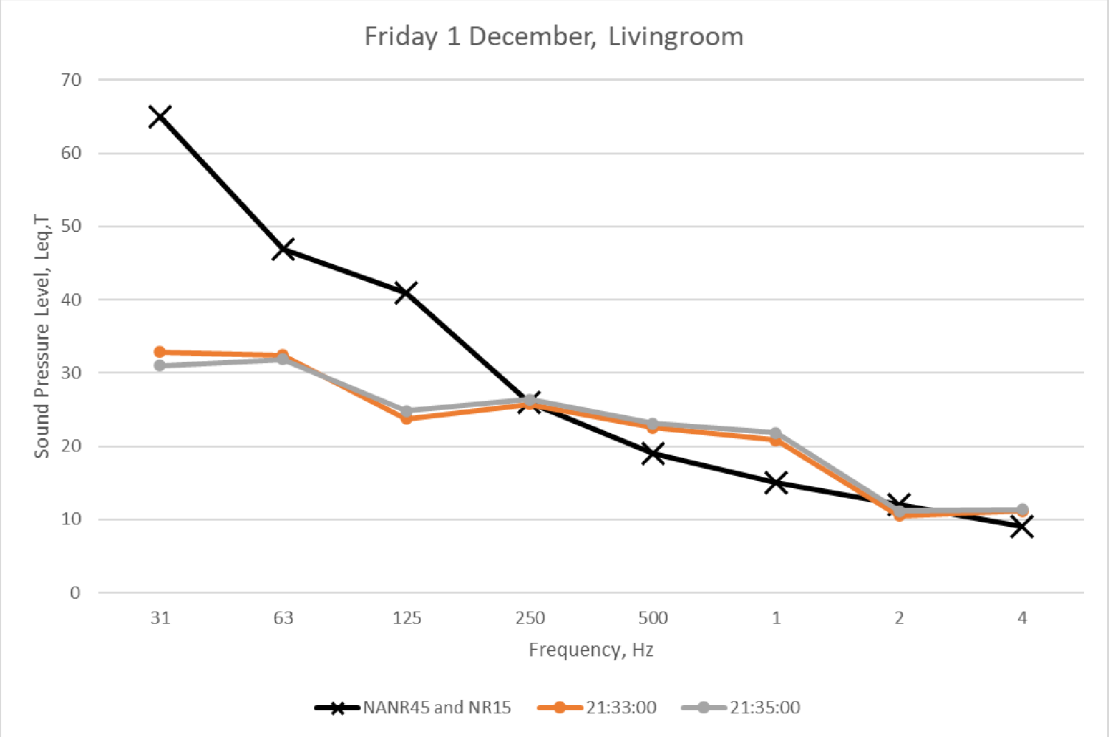
Measured internal noise levels compared to bedroom targets (Saturday 14 October 2023)



Measured internal noise levels compared to bedroom targets (1 December 2023)



Measured internal noise levels compared to bedroom targets (1 December 2023)



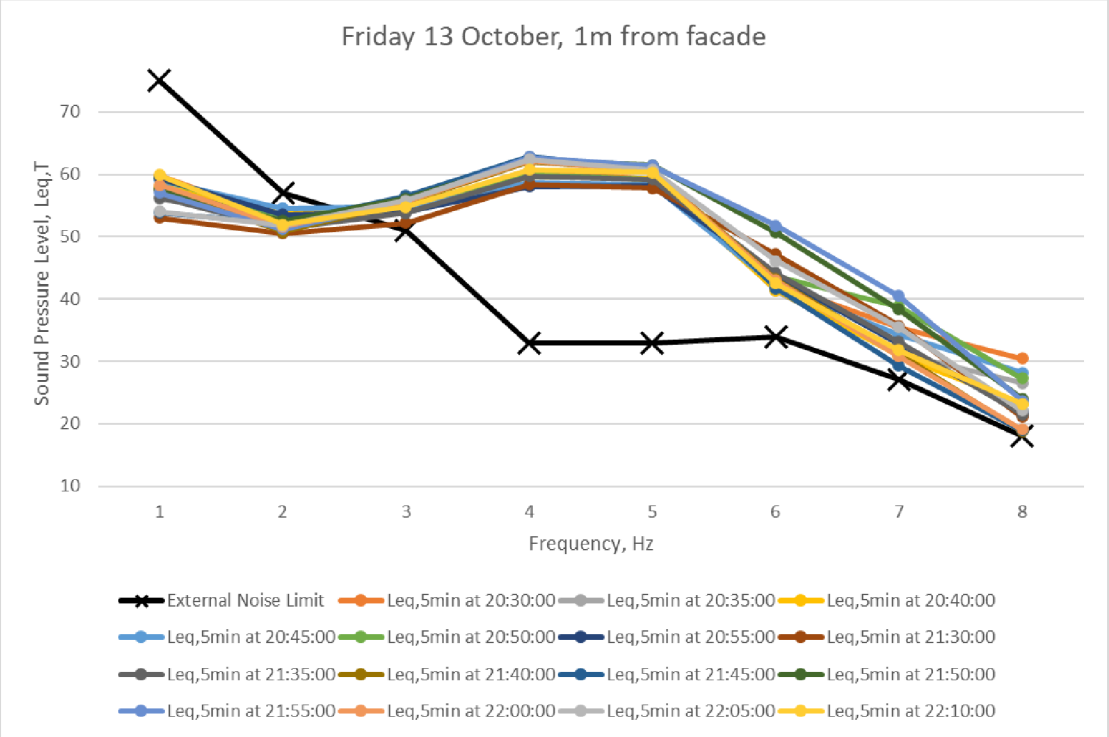
Measured internal noise levels compared to bedroom targets (1 December 2023)

6.6 Measured External Noise Levels at Residential Receptors

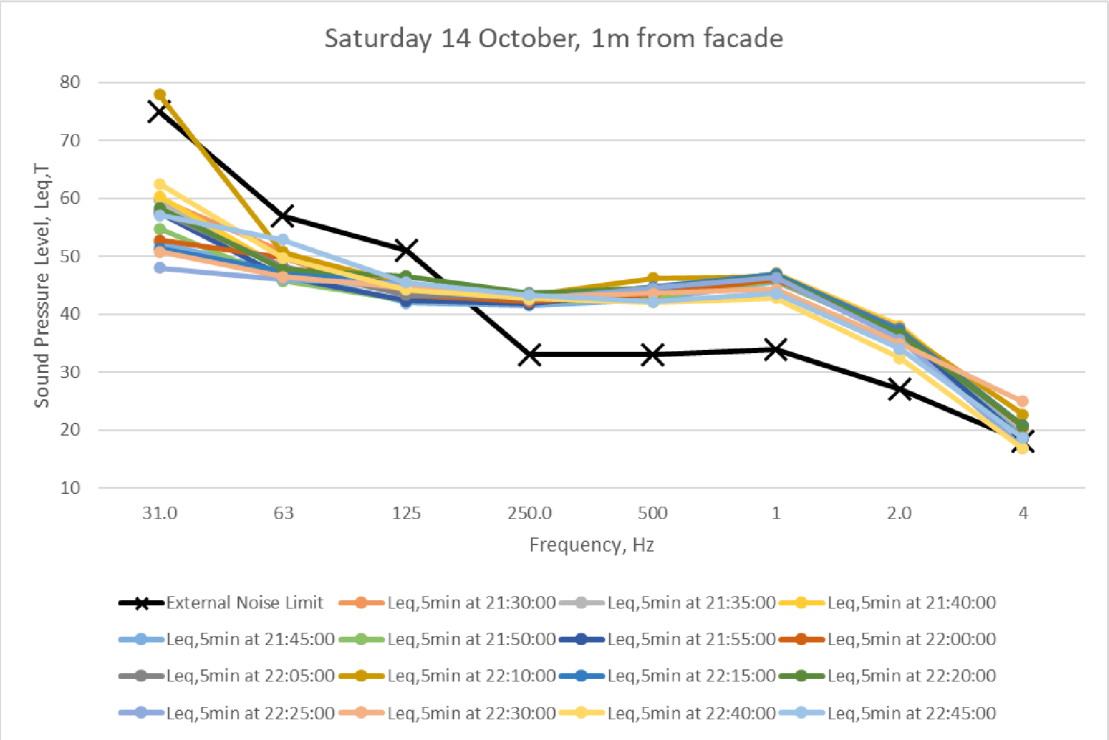
Considering the external noise targets noted in Section 6.4.2, the following graphs plot external noise levels measured 1m from the window of the residential receptors during the events held at the ASFC venues.

- The graph for Friday 13 October 2023 is for an event held at the Coleys bar, during an Oom-pah Band event.
- The graph for Saturday 14 October 2023 is for an event held at the 1968 Lounge, during a private function with 80's disco event.
- The graph for Friday 1 December 2023 is for events held in both the 1968 Lounge and Coley's Bar simultaneously, these events were Private Christmas parties.

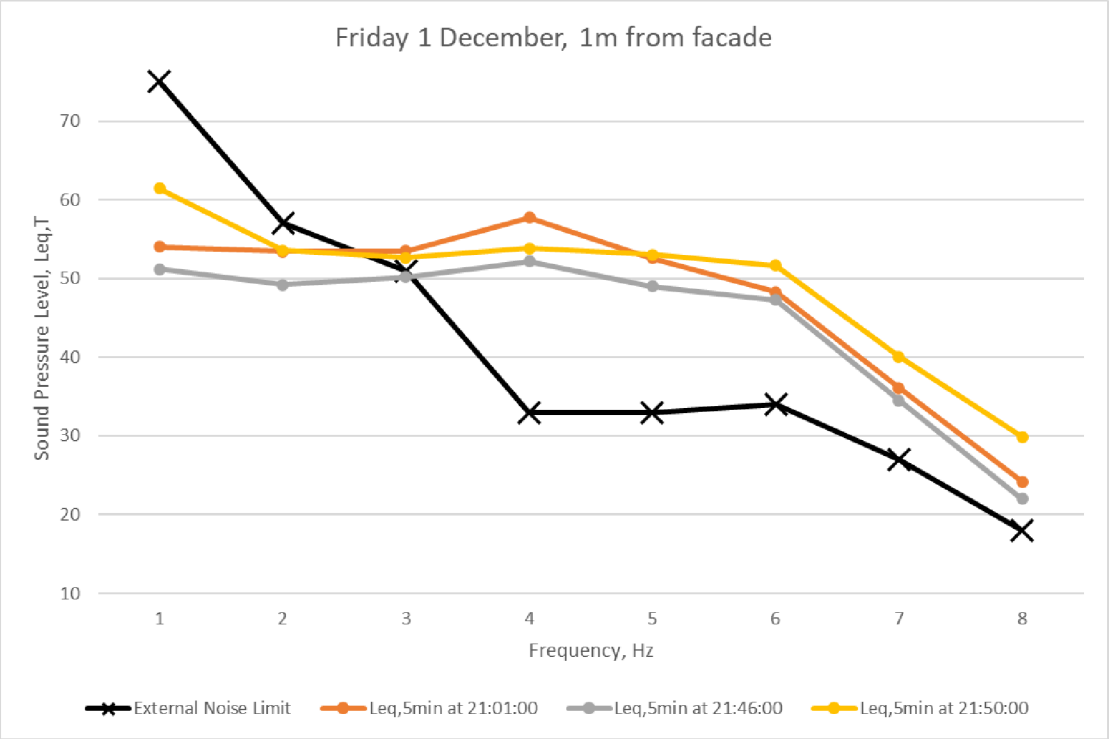
Measurements were also carried out at the boundary of each garden. These have been omitted for brevity, however, could be included in a revision to this Report following discussions between HTA and HBC.



Measured external noise levels compared to external noise targets (Friday 13 October 2023)



Measured external noise levels compared to external noise targets (Saturday 14 October 2023)



Measured external noise levels compared to external noise targets (Friday 1 December 2023)

6.7 Measured Noise Levels in Coleys and 1968 Lounge

Sections 6.5 and 6.6 present the measured noise levels internally at the residential receptors, as well as at 1m from windows externally to the receptors, and compares to suggested noise limits applicable to regularly occurring (uncapped) events.

Internal noise loggers were also situated within Coleys and the 1968 Lounge for the three surveyed event periods, with the following operational noise levels measured.

Friday 13th October 2023:

- Within Coley's, during the live band, noise levels ranged between $L_{Aeq,5min}$ 96 dB and $L_{Aeq,5min}$ 101 dB;

Saturday 14th October 2023:

- Within the 1968 Lounge, during the amplified music, noise levels ranged between $L_{Aeq,5min}$ 85 dB and $L_{Aeq,5min}$ 91 dB.

Friday 1st December 2023:

- Within Coley's, during the amplified music, noise levels ranged between $L_{Aeq,5min}$ 85 dB and $L_{Aeq,5min}$ 87 dB.
- Within the 1968 Lounge, during the amplified music, noise levels ranged between $L_{Aeq,5min}$ 92 dB and $L_{Aeq,5min}$ 96 dB.

6.8 Discussion of Measured Noise Levels

6.8.1 October Events – Livingston Road Residents

From a review of the measured noise levels internal to the residential receptors, those measured on Friday 13 October 2023 are in excess of the suggested internal noise targets. This correlates with the subjective observations made during the attending engineers visit, in which the event operated in the Coleys bar was clearly audible within the residential dwelling.

While those measured on Friday exceed internal noise targets, the measured noise levels on Saturday 14 October 2023 broadly fall within the targets suggested with windows closed. This, again, correlates with the subjective observations made by the attending engineer, in which the event operated in the 1968 Lounge was only faintly audible.

Although the event on Saturday 14 October 2023 was measured to be within the suggested bedroom noise limits at the receptor, it remained faintly audible. This was considered to be due to the very low background noise present, which does increase the risk of music becoming a nuisance. Any noise limits within the residences will need to be balanced with consideration to the low background noise.

Of the two surveyed events, an attending Environmental Control Officer carried out an independent assessment of noise to judge the level of noise impact. Although at the time of writing we have not had sight of his formal Report/Statement from Environmental Health, from discussions on site it was understood that the event on Friday 13 October 2023 was judged to be a noise nuisance, whereas the event on Saturday 14 October 2023 was judged to be acceptable. It should be noted that these discussions were centred around internal noise levels within the dwellings with windows shut, rather than external noise levels, and related to the specific dwelling assessed rather than all dwellings in the vicinity.

Considering the internal measurement within the residential receptors, and the observations noted by the attending personnel, there is a noise level that was deemed acceptable and noise level that was not. This gives a "cause and effect" relationship between the venue and the receiver to inform subsequent mitigation advice.

It is also important to note that subjective assessment made by the attending officer had windows shut. Therefore, it is important to consider that although some instances were considered acceptable internally, noise levels measured externally exceeded the suggested external noise limits. This is an indication that with windows open, the resulting music noise impact will increase and may be deemed a nuisance.

6.8.2 December Events – Whalley Road Residents

From a review of the measured noise levels internal to the residential receptors, those measured on Friday 1 December 2023 are marginally in excess of the suggested internal noise targets in all observed room with windows closed. This correlates with the subjective observations made during the attending engineers visit, in which the events operated in both the 1968 Lounge and Coley's bar were audible, and each event individually identifiable within the residential dwelling.

During the events on Friday 1 December it is understood that Hyndburn Council received comments from other complainants (different receptors as surveyed in October 2023) that the noise levels were reduced when compared to previous events operated, but still audible within the properties. It is unknown whether the occupants had windows open or closed.

During the surveyed events, the attending Environmental Control Officer carried out an independent assessment of noise to judge the level of noise impact. From discussions on site it was indicated that the event on Friday 1 December 2023 was judged to be a Statutory Nuisance, and subsequent to the site visit Environmental Health has confirmed that in their opinion they witnessed a Statutory Nuisance. It should be noted that noise levels were largely observed with windows closed, with some periods of noise being observed with windows opened. These discussions also relate to the specific dwelling assessed rather than all dwellings in the vicinity.

It is also important to consider external noise which also exceed the suggested external noise limits. This is an indication that with windows open, the resulting music noise impact will increase.

7.0 Determination of Limits within Coley's Bar/The 1968 Lounge

The operational noise limits set out in the following sections are based on the existing separation between ASFC venues and the residential properties surveyed during this survey.

Based on the noise data obtained we have determined a level exceedance per octave band with respect to the suggested internal and external noise targets. Effectively, where measured levels exceeded, or "complied" with the suggested targets, the noise levels within the venue(s) could be decreased or increased accordingly.

The following table sets out the exceedances of the proposed internal and external noise targets based on the HTA noise survey data.

	Octave Band Frequency, Hz							
	31.5	63	125	250	500	1k	2k	4k
Coleys Exceedance inside residence	-24	-9	-5	8	12	14	6	6
Coleys Exceedance External to residence	-20	-3	-1	19	25	23	15	14
1968 Exceedance inside residence	-35	-21	-21	-10	-6	-3	-3	3
1968 Exceedance External to residence	-19	-11	-10	7	8	9	7	1
Both Venues Exceedance inside residential	-32	-18	-13	4	4	6	0	3
Both Venues External to residential	-17	-6	-1	18	17	15	10	9

7.1 Suggested Operational Noise Limits

7.1.1 October Events – Livingston Road Residents

Based on the levels measured at the residential receptors both internally and externally, and the measured exceedances of the suggested criteria, it is clear to see that the mid-to-high frequencies are the main concern (i.e. between 250 Hz and 4000 Hz).

After the October 2023 survey there were a few elements of uncertainty in the assessment, including:

- The type of events monitored,
- Of the 2No. receptors, a single event at each venue has been surveyed, with one receiver not considered the "worst affected" to 1968 Lounge (ie not nearest),
- The variability of the noise sources assessed (ie music with no noise limiter at source).

As such, we would suggest that operational noise limits for the time being considered in terms of an overall reverberant sound pressure level, which should be developed (tuned) into octave bands during install and commissioning of a noise limiter.

Noise was therefore proposed to be reduced as follows for any regular, uncapped, events:

- If reliant on residential windows being closed, the reverberant sound pressure level within the ASFC venues should be controlled to be no more than:
    - Coleys – $L_{Aeq,5min}$ 85 dB
    - 1968 Lounge – $L_{Aeq,5min}$ 91 dB
- If considering noise impact with residential windows open, which would be a more robust/suitable assessment, the reverberant sound pressure level within the ASFC venues should be controlled to be no more than:
    - Coleys – $L_{Aeq,5min}$ 75 dB
    - 1968 Lounge – $L_{Aeq,5min}$ 82 dB

For infrequent events, up to 30no. per year, there is basis to allow relaxations of the above noise limits, with the majority of existing music assessment guides suggesting music noise can exceed the background noise levels by up to 5dB (ref IOA Noise from Pubs and Clubs Annex). For these events, the following internal noise limits within the venues could be appropriate subject to further test, and are not reliant/contingent on residential windows being kept shut:

- Coleys – $L_{Aeq,15min}$ 80 dB
- 1968 Lounge – $L_{Aeq,15min}$ 87 dB

7.1.2 December Events – Whalley Road Residents

From the results of our survey on Friday 1 December, Coleys Bar was operating at a level of approximately $L_{Aeq,5min}$ 85 dB and the 1968 Lounge operating at a level of up to $L_{Aeq,5min}$ 96 dB. This was a reduction in noise for Coleys Bar but an increase in noise for the 1968 Lounge when compared to the October 2023 survey.

We have been informed that complainants at different receptors (as surveyed in October 2023) judged noise levels to be reduced on 1 December 2023 when compared to previous events operated, but still audible within the properties. This is supportive toward the operational noise levels operated during on Friday 1 December being a good starting point, but when factoring in nearer receptors require some further reductions as set out below. This is why the December 2023 survey was undertaken to better understand impact at nearer receptors to this premises as well as gain further information on operational noise levels during events.

Our assessment indicates that noise levels from the 1968 Lounge during the event surveyed on 1 December 2023 should be reduced further to achieve the suggested criteria proposed by HTA, and reduce the impact of operational noise breakout affecting the residents.

With this in mind, and following the additional survey and feedback from residents, we would suggest operational noise be reduced as follows for any regular, uncapped, events:

- If reliant on residential windows being closed, the reverberant sound pressure level within the ASFC venues should be controlled to be no more than:
    - Coleys – $L_{Aeq,5min}$ 85 dB
    - 1968 Lounge – $L_{Aeq,5min}$ 89 dB
- If considering noise impact with residential windows open, which would be a more robust/onerous assessment, the reverberant sound pressure level within the ASFC venues should be controlled to be no more than:
    - Coleys – $L_{Aeq,5min}$ 75 dB
    - 1968 Lounge – $L_{Aeq,5min}$ 80 dB

For infrequent events, up to 30no. per year, there is basis to allow relaxations of the above noise limits, with the majority of existing music assessment guides suggesting music noise can exceed the background noise levels by up to 5dB. For these events, the following internal noise limits within the venues could be appropriate subject to further test, and are not reliant/contingent on residential windows being kept shut:

- Coleys – $L_{Aeq,15min}$ 80 dB
- 1968 Lounge – $L_{Aeq,15min}$ 85 dB

The above will need to be looked at in full octave bands as part of any validation exercise on-site (ie during install and commissioning of a noise limiter) but should pose as a reasonable starting point for consideration of all parties. It is worth highlighting that noise levels would still likely be audible in the nearby bedrooms even with the above limits achieved. This is due to the fact the background noise levels in the bedrooms are very low and even the faintest amount of music noise would likely be auditable.

It is not without acknowledgement, however, that the above limits pose a limitation in operational noise level and flexibility of the venues, which is a strong indication that noise mitigation to improve the building structure is a necessary consideration to allow sufficient flexibility in the venue operation and relax any future limitations.

7.2 Enforcement Limits

To assist in any subsequent on-site assessments undertaken by the council, and ultimately to assist in any enforcement of the "to be agreed" noise limits, we have determined octave band noise limits applicable at the boundary between ASFC and any neighbouring residential receptors. These are set out below applicable at garden boundaries to make it simple for HBC to enforce.

	Octave Band Frequency, Hz								
	31.5	**63**	**125**	**250**	**500**	**1k**	**2k**	**4k**	**dBA**
External Noise Limit at residential boundary (dB, $L_{eq,T}$) Uncapped events[1]	75[2]	57[2]	51[2]	33	33	34	27	18	**41**
External Noise Limit at residential boundary (dB, $L_{eq,T}$) Up to 30 events[1]	75[2]	57[2]	51[2]	38	35	39	32	23	**46**

Note 1 If acceptable to all parties, and windows at residential receptors can be relied upon as "being shut", the enforcement limits could likely be relaxed slightly. Notwithstanding, that approach would be non-standard when considering the music assessment guides that would be applicable in the scenario of assessing noise egress from new music venue to existing residential receptor.

Note 2 External noise limits at these frequencies are suggested to be increased considering the measured backgrounds are unnecessarily onerous. They are therefore based on the internal noise targets noted in Section 6.4.1, with the attenuation of a partially open window added to them (ie 10 dB).

Note 3 For daytime events there could be scope to relax the above levels by 5dB. (ie a 5dB increase)

Based on the surveys undertaken by HTA, and our observations whilst on-site, the above would likely be achievable if the reverberant sound pressure level within the ASFC venues be controlled to be no more than:

- Uncapped events:
  - Coleys – $L_{Aeq,5min}$ 75 dB
  - 1968 Lounge – $L_{Aeq,5min}$ 80 dB
- Capped events (Up to 30 events per year):
  - Coleys – $L_{Aeq,15min}$ 80 dB
  - 1968 Lounge – $L_{Aeq,15min}$ 85 dB

8.0 Noise Mitigation and Noise Management Advice

8.1 Noise Mitigation

Based on the site observations made during our visits attended, the primary acoustic weakness in the building is the roof build-up. This was observed to be the primary path for noise breakout, and most beneficial form of noise mitigation if remedial treatment options were to be investigated. This observation aligns with the documentation submitted as part of the original planning applications, and that of the Miller Goodall high-level summary contained within the email discussions since completion and noise complaints arising.

Due to the aesthetic intent of the completed venues, the ventilation systems are all exposed within the venues themselves. These will connect to atmosphere via ductwork which may be a noise transmission path if not appropriately detailed. These should be investigated, particularly if they connect to the roof structure.

One option could be that enhancement works are carried out to the 1968 Lounge that this area becomes the “venue” for louder music events.

8.2 Noise Management Approaches

During observations of Coleys, the access doors were observed to be continually opened/closed. Whilst transient in nature, there was noted to be a slight increase in observable noise levels when opened so there would be merit in investigating this weakness, and considering the introduction of door staff to manage access and egress, and ensure doors are not held open.

Linked with the above point, the door staff should be utilised in ensuring that patrons do not congregate outside the venue. Alternative location should be utilised as the outdoor smoking areas that further away and better screened from the residential receptors.

A house system should be installed in both venues, that incorporates a suitable electronic noise limiter set to agreed operational noise levels. This will ensure sufficient control of noise output of amplified systems and ensure the venue operator retains control of these noise levels (ie limiter installed in management area, with tamper proof seals installed to mitigate settings being adjusted). Performers should utilise these systems when attending and performing at the venues.

Pre-amplified events through a house loudspeaker system are inherently easier to manage/control than un-amplified live band performances. Without acoustic enhancement to the building fabric, we would advise against hosting live band performances within Coleys (as a minimum) as the noise output generated cannot be effectively managed, and is therefore solely reliant on the acoustic performance of the building which is weak.

For the infrequent events, whereby greater noise output is suggested to be permissible, it would be good practice to inform residents well in advance of said events.

From the observations made during the noise survey and site visit in October 2023, the 1968 Lounge is performing subjectively and objectively better in terms of noise break-out. This is supportive of a management approach, whereby noisier events are held in the 1968 Lounge and quieter events held in Coleys.

Ultimately however, in the absence of any remedial options to reduce the amount of noise break-out from both venues, there is a reduction in operational noise level required to reduce and mitigate the likelihood of complaint from nearby residents.

Appendix A

The acoustic terms used in this report are defined as follows:

dB — Decibel - Used as a measurement of sound level. Decibels are not an absolute unit of measurement but an expression of ratio between two quantities expressed in logarithmic form. The relationships between Decibel levels do not work in the same way that non-logarithmic (linear) numbers work (e.g. 30dB + 30dB = 33dB, not 60dB).

dBA — The human ear is more susceptible to mid-frequency noise than the high and low frequencies. The 'A'-weighting scale approximates this response and allows sound levels to be expressed as an overall single figure value in dBA. The $_A$ subscript is applied to an acoustical parameter to indicate the stated noise level is A-weighted

It should be noted that levels in dBA do not have a linear relationship to each other; for similar noises, a change in noise level of 10dBA represents a doubling or halving of subjective loudness. A change of 3dBA is just perceptible.

$L_{90,T}$ — L_{90} is the noise level exceeded for 90% of the period *T* (i.e. the quietest 10% of the measurement) and is often used to describe the background noise level.

$L_{eq,T}$ — $L_{eq,T}$ is the equivalent continuous sound pressure level. It is an average of the total sound energy measured over a specified time period, *T*.

L_{max} — L_{max} is the maximum sound pressure level recorded over the period stated. L_{max} is sometimes used in assessing environmental noise where occasional loud noises occur, which may have little effect on the L_{eq} noise level.

Sound Pressure Level (L_p) is the sound pressure relative to a standard reference pressure of 2×10^{-5} Pa. This level varies for a given source according to a number of factors (including but not limited to: distance from the source; positioning; screening and meteorological effects).

Sound Power Level (SWL or L_w) is the total amount of sound energy inherent in a particular sound source, independent of its environment. It is a logarithmic measure of the sound power in comparison to a specified reference level (usually 10^{-12} W).

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