The Vine, Portscatho

Noise Assessment for Planning Application

28th September 2023

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1. INTRODUCTION

1.1 Overview

inacoustic has been commissioned to assess the impact of music/ event noise from The Vine, Portscatho. The Proposed Development has temporary planning permission to operate under Class E(b) usage on a seasonal basis between April to October in any given year. The Applicant is seeking to amend the permission to remove the time limited nature of it, as well to extend operating hours to 23:00, with up to 12 Nº events in any calendar year.

The following technical noise assessment has been produced to provide supporting information to accompany a s73 Planning Application to Cornwall Council and is based upon environmental noise measurements undertaken at the site.

This noise assessment is necessarily technical in nature; therefore a glossary of terms is included in Appendix A to assist the reader.

1.2. Scope and Objectives

The scope of the noise assessment can be summarised as follows:

A sound monitoring survey was undertaken at discrete locations around the Site;
A detailed assessment of the suitability of the Site, in accordance with relevant standards in respect of sound from the existing sources; and
Recommendation of mitigation measures, where necessary, to comply with the requirements of the National Planning Practice Guidance in England: Noise[1], Code of Practice on Environmental Noise Control at Concerts[2] and the Cornwall Council Development Sound Standard[3].

[1] Department for Communities and Local Government (DCLG), 2019. National Planning Practice Guidance for England: Noise. DCLG.
[2] The Noise Council, 1995. The Code of Practice on Environmental Noise Control at Concerts.
[3] Public Protection Cornwall Council, July 2017 *Development Sound Standard – Guidance for Developers on the Assessment of Noise for Planning Applications*.

2. LEGISLATION AND POLICY FRAMEWORK

The development proposals for the Site are guided by the following policy directives and guidance:

2.1. National Policy

2.1.1. National Planning Policy Framework, 2023

The *National Planning Policy Framework* (NPPF)[4] sets out the UK Government's planning policies for England. Planning policy requires that applications for planning permission must be determined in accordance with the development plan, unless material considerations indicate otherwise.

The NPPF is also a material consideration in planning decisions. It sets out the Government's requirements for the planning system and how these are expected to be addressed.

Under Section 15; *Conserving and Enhancing the Natural Environment*, in Paragraph 174, the following is stated:

"*Planning policies and decisions should contribute to and enhance the natural and local environment by:*

e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability.".

Paragraph 185 of the document goes on to state:

"*Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:*

a) mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;
b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason"

Paragraph 185 refers to the Noise Policy Statement for England, which is considered overleaf.

[4] Department for Levelling Up, Housing & Communities (DLUHC), September 2023. National Planning Policy Framework. HMSO. London.

2.1.2. Noise Policy Statement for England, 2010

The underlying principles and aims of existing noise policy documents, legislation and guidance are clarified in *DEFRA: 2010: Noise Policy Statement for England* (NPSE)[5]. The NPSE sets out the *"Long Term Vision"* of Government noise policy as follows:

"Promote good health and good quality of life through the effective management of noise within the context of Government policy on sustainable development".

The NPSE outlines three aims for the effective management and control of environmental, neighbour and neighbourhood noise:

> *"Avoid significant adverse impacts on health and quality of life;*
> *Mitigate and minimise adverse impacts on health and quality of life; and*
> *Where possible, contribute to the improvement of health and quality of life".*

The guidance states that it is not possible to have a single objective noise-based measure that defines *"Significant Observed Adverse Effect Level (SOAEL)"* that is applicable to all sources of noise in all situations and that not having specific SOAEL values in the NPSE provides the necessary policy flexibility until further evidence and suitable guidance is available.

2.1.3. National Planning Practice Guidance in England: Noise, 2019 (PPGNoise)

Paragraph: 002 of the PPGNoise states the following:

"Can noise override other planning concerns?

It can, where justified, although it is important to look at noise in the context of the wider characteristics of a development proposal, its likely users and its surroundings, as these can have an important effect on whether noise is likely to pose a concern."

As such, Paragraph: 003 of the NPPG states that:

"Plan-making and decision making need to take account of the acoustic environment and in doing so consider:

> *whether or not a significant adverse effect is occurring or likely to occur;*
> *whether or not an adverse effect is occurring or likely to occur; and*
> *whether or not a good standard of amenity can be achieved.*

In line with the Explanatory note of the NPSE, this would include identifying whether the overall effect of the noise exposure ..is, or would be, above or below the significant observed adverse effect level and the lowest observed adverse effect level for the given situation."

Consequently, the *National Planning Practice Guidance in England: Noise* (NPPG Noise)[6] summarises the noise exposure hierarchy, based on the likely average response. The following three observed effect levels are identified below, as identified in Paragraph 004:

[5] Department for Environment, Food and Rural Affairs (DEFRA), 2010. Noise Policy Statement for England. DEFRA.
[6] Department for Communities and Local Government (DCLG), 2019. National Planning Practice Guidance for England: Noise. DCLG.

Significant Observed Adverse Effect Level: This is the level of noise exposure above which significant adverse effects on health and quality of life occur;
Lowest Observed Adverse Effect Level: This is the level of noise exposure above which adverse effects on health and quality of life can be detected; and
No Observed Adverse Effect Level: This is the level of noise exposure below which no effect at all on health or quality of life can be detected.

Importantly, Paragraph: 004 of the PPGNoise states that:

"Although the word 'level' is used here, this does not mean that the effects can only be defined in terms of a single value of noise exposure. In some circumstances adverse effects are defined in terms of a combination of more than one factor such as noise exposure, the number of occurrences of the noise in a given time period, the duration of the noise and the time of day the noise occurs."

Paragraph: 005 of the PPGNoise expands the significant criteria related to each of these levels, which are reproduced in Table 1, below.

TABLE 1: SIGNIFICANCE CRITERIA FROM NPPG IN ENGLAND: NOISE

Perception	Examples of Outcomes	Increasing Effect Lev	Action
No Observed Effect Level			
Not Noticeable	No Effect	No Observed Effect	No specific measures required
No Observed Adverse Effect Level			
Noticeable and Not Intrusive	Noise can be heard, but does not caus any change in behaviour, attitude or oth physiological response. Can slightly affec the acoustic character of the area but such that there is a change in the quali life.	No Observed Advers Effect	No specific measures required
Lowest Observed Adverse Effect Level			
Noticeable and Intrusive	Noise can be heard and causes small changes in behaviour, attitude or oth physiological response, e.g. turning up volume of television; speaking more lou where there is no alternative ventilati having to close windows for some of time because of the noise. Potential for some reported sleep disturbance. Affe the acoustic character of the area suc that there is a small actual or perceive change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
Significant Observed Adverse Effect Level			
Present and Disruptive	The noise causes a material change in behaviour, attitude or other physiolog response, e.g. avoiding certain activiti during periods of intrusion; where ther no alternative ventilation, having to ke windows closed most of the time beca of the noise. Potential for sleep disturbance resulting in difficulty in ge to sleep, premature awakening and difficulty in getting back to sleep. Qua	Significant Observed Adverse Effect	Avoid

Perception	Examples of Outcomes	Increasing Effect Lev	Action
	of life diminished due to change in acoı character of the area.		
Present and Very Disruptive	Extensive and regular changes in behaviour, attitude or other physiolog response and/or an inability to mitig effect of noise leading to psychologic stress, e.g. regular sleep deprivation/awakening; loss of appet significant, medically definable harm, e.g. auditory and non-auditory.	Unacceptable Advers Effect	Prevent

Paragraph: 006 of the PPGNoise expands on what factors influence whether noise could be a concern; those factors relevant to this Planning Application are reproduced below:

"The subjective nature of noise means that there is not a simple relationship between noise levels and the impact on those affected. This will depend on how various factors combine in any particular situation.

These factors include:

> *the source and absolute level of the noise together with the time of day it occurs. Some types and level of noise will cause a greater adverse effect at night than if they occurred during the day – this is because people tend to be more sensitive to noise at night as they are trying to sleep. The adverse effect can also be greater simply because there is less background noise at night;*
> *the spectral content of the noise (i.e. whether or not the noise contains particular high or low frequency content) and the general character of the noise (i.e. whether or not the noise contains particular tonal characteristics or other particular features), and;*
> *the local arrangement of buildings, surfaces and green infrastructure, and the extent to which it reflects or absorbs noise.*

2.2. Local Policy

2.2.1. Cornwall Council Adopted Local Plan, 2016

The Plan is intended to help deliver the vision and objectives of 'Future Cornwall'; a sustainable community strategy. The underlying principles of the strategy seek to manage future development to ensure all communities in Cornwall have an appropriate balance of jobs, services, facilities and homes.

Future growth in Cornwall will be guided by a 'plan, monitor and manage approach' ensuring that the right policies are in place to reflect changing circumstances.

Policy 12 of the Local Plan, entitled 'Design' stipulates that new development should *avoid unreasonable noise and disturbance*.

Policy 13 of the Local Plan, entitled 'Development Standards' stipulates that all new development should *achieve the avoidance of adverse impacts, either individually or cumulatively, resulting from noise, dust, odour, vibration, vermin, waste, pollution and visual effects. Such adverse impacts should be avoided or mitigated during the construction, operation or restoration stage of development*.

Policy 16 of the Local Plan, entitled 'Health and Wellbeing' stipulates that *To improve the health and wellbeing of Cornwall's communities, residents, workers and visitors, development should: 1. Protect, and alleviate risk to, people and the environment from unsafe, unhealthy and polluted environments by avoiding or mitigating against harmful impacts and health risks such as air and noise pollution and water and land contamination and potential hazards afforded from future climate change impacts*.

2.3. Assessment Criteria

Cornwall Council Public Protection's Development Sound Standard confirms that LA03 Licensable Activities should be assessed against Sound Criterion 1 and Code of Practice on Environmental Noise Control at Concerts.

2.3.1. Cornwall Council Public Protection Development Sound Standard

Criterion 1 of the Cornwall Council Public Protection Development Sound Standard (herein referred to as the 'DSS') has been adopted as part of this assessment process. Criterion 1 of the DSS states the following:

"8.1 Sound criterion 1 is applicable:

to new noise-sensitive development, or refurbished buildings, undergoing change of use to residential, affected by existing noise sources.
where new noise sources are brought to existing noise-sensitive receptors.

Sound criterion 1 *The ambient sound level $L_{Aeq,T}$ in the presence of the new sound source shall not exc external and internal amenity $L_{Aeq,T}$ sound limits contained in Table 1 at noise-sensitive receptors*

8.2 The external lower guideline value of 50 dB LAeq,12hr (0700-1900) will ensure that the recommended daytime internal guideline values are met, allowing 15 dB attenuation for an open window.

8.3 The WHO 1999 Guidelines state that no separate time base is given for evenings alone, but typically, guideline values should be 5–10 dB lower than for a 12 h daytime period.

An evening guideline value of 45 dB LAeq,4hr has therefore been derived accordingly, that reflects the night-time external value. This is further justified by the 5dB evening weighting that is applied under the Environmental Noise Directive.

8.4 The evening external guideline value of 45 dB may also be relevant for established 'quiet' day time periods i.e. Saturday 1300-2300 and all day Sunday.

8.5 The internal guideline values in Table 1 are based on anonymous external sound as it affects the internal acoustic environment i.e. sound without a 'characteristic' such as a tone. The standard recommends that lower sound limits may therefore be applicable. Any characteristics there should be described and accounted for.

8.7 For new sound sources, the recommended guideline values for external areas are the values which should not be exceeded in the presence of the new sound source. Assessment of compliance with Criterion 1 should therefore be the logarithmic addition of the existing ambient sound level and the predicted sound over the relevant time-base.

8.8 Where the existing ambient sound level in the absence of the new sound source already exceeds the external guideline values in Table 1, in most cases any increase in this sound level should be avoided. Sound from the development should therefore aim to be more than 10 dB below the existing ambient sound level.

8.9 Whilst all development should aim to achieve the criteria outlined in Table 1, any variation from the Standard, due to site specific circumstances, will be assessed in accordance with planning policy through the determination process. National Policy does not require LOAEL in all circumstances, providing the exposure has been mitigated and minimized with the context of sustainable development.

8.10 Where criterion 1 cannot be achieved, the sound assessment should include a justification as to why the proposed development should be considered to meet planning policy."

An overview of the sound limits in Sound Criterion 1, relevant to the Proposed Development, equating to a Lowest Observed Adverse Effect LOAEL, are outlined in Table 2, below.

TABLE 2: SOUND CRITERION 1CORNWALL COUNCIL PUBLIC PROTECTION DSS

T=	07:00 to 19:00	19:00 to 23:00	23:00 to 07:00	07:00 to 19:00	19:00 to 23:00	23:00 to 07:00
Area	DAY External amenity area $L_{Aeq,T}$ (dB)	EVENING External amenity area $L_{Aeq,T}$ (dB)	NIGHT External outside bedroom $L_{Aeq,T}$ (dB)	DAY Indoor living area $L_{Aeq,T}$ (dB)	EVENING Indoor bedroom $L_{Aeq,T}$ (dB)	NIGHT Inside bedroom $L_{Aeq,T}$ (dB)
Lowest observec adverse effect level (LOAEL)	50	45	45	35 (living) 40 (dining)	35	30

2.3.2. Code of Practice on Environmental Noise Control at Concerts

For the daytime and evening period, 09:00 to 23:00, the Code of Practice on Environmental Noise Control at Concerts has been used. It is stated in the Code of Practice that the music sound level (MNL) should not exceed the noise limits at 1metre from the façade of any noise sensitive premises in accordance with the framework set out below in Table 3.

TABLE 3: CODE OF PRACTICE ON ENVIRONMENTAL NOISE CONTROL AT CONCERTS

Concert days per calendar year, per venue	Venue Category	Guideline
1 to 3	Urban Stadia or Arenas	The MNL should exceed 75 dB(A) over a 15-minute period
1 to 3	Other Urban and Rura Venues	The MNL should not exceed 65 dB(A) over a 15-minute period
4 to 12	All Venues	The MNL should not exceed the background no level by more than 15 dB(A) over a 15-minute period

It is therefore considered appropriate to assess the daytime and evening music noise level from The Vine, whereby the music noise level does not exceed the measured background noise level by more than 15 dB(A) over any 15 minute period.

3. SITE DESCRIPTION

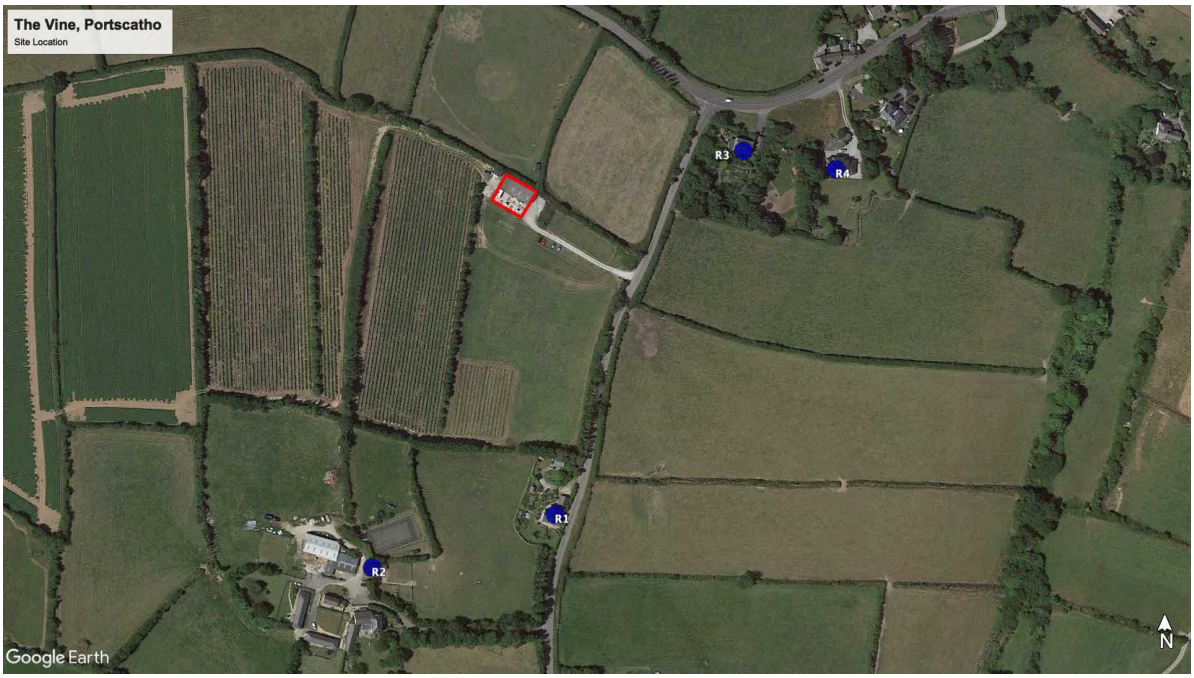
3.1. Site and Surrounding Area

The Proposed Development site currently comprises The Vine, Portscatho. The Proposed Development area can be seen in red in Figure 1, below.

The Planning Application does not seek to alter the existing operations, save for removing the time-limited nature of the existing permission, and to extend operating hours to 23:00.

The ambient noise environment at the site is predominantly influenced by distant road traffic noise during day and evening time periods.

FIGURE 1: PROPOSED DEVELOPMENT SITE AND SURROUNDING AREA



This noise assessment therefore focuses on entertainment noise from The Vine during a music event. Measurements were undertake to understand the off-site impact of music noise during an amplified music event on Friday 16th June 2023.

The southern façade of The Vine is open during events, as can be seen in Figure 2, overleaf.

FIGURE 2: THE VINE DURING EVENT

4. MEASUREMENT METHODOLOGY

4.1 General

The prevailing noise conditions in the area have been determined by an attended and unattended environmental noise survey.

The unattended measurements were undertaken between Friday 4th August 2023 and Monday 7th August 2023, to determine the ambient and background sound levels on which to base the assessment.

In addition to this, an attended period of measurement was undertaken during the evening of Friday 16th June 2023, to measure the noise impact of an event at the nearest noise-sensitive receptors, and to enable a noise model to be populated.

4.2. Measurement Details

All noise measurements were undertaken by a consultant certified as competent in environmental noise monitoring, and, in accordance with the principles of BS 7445[7].

All acoustic measurement equipment used during the noise survey conformed to Type 1 specification of British Standard 61672[8]. A full inventory of this equipment is shown in Table 4 below.

TABLE 4: INVENTORY OF SOUND MEASUREMENT EQUIPMENT

Measurement Position	Make, Model & Description	Serial Number	Calibration Certificate Number	Calibration Due Date
MP1	Larson Davis 820 Sound Level Met	A1110	1148127	02/08/2025
	Larson Davis PRM 828 Preamplifier	3029		
	PCB 377B02 Microphone	17160 3		
MP2	Rion NL-52 Sound Level Meter	00453871	1129505	05/07/2024
	Rion NH-25 Preamplifier	43913		
	Rion UC-59 Microphone	07960		
MP3-MP4	NTi Audio XL2-TA Sound Level Mete	A2A-14648-E0	UCRT22/1991	10/08/2024
	NTi Audio MA220 Preamplifier	7599		
	NTi Audio MC230A Microphone	A15871		
All	Rion NC-74 Acoustic Calibrator	34904966	1141300	08/03/2024

The sound measurement equipment used during the survey was field calibrated at the start and end of the measurement period. A calibration laboratory has calibrated the field calibrator used within the twelve months preceding the measurements. A drift of less than 0.2 dB in the field calibration was found to have occurred on the sound level meters. The weather conditions during both surveys were conducive to noise measurement, it being dry, with low wind speeds.

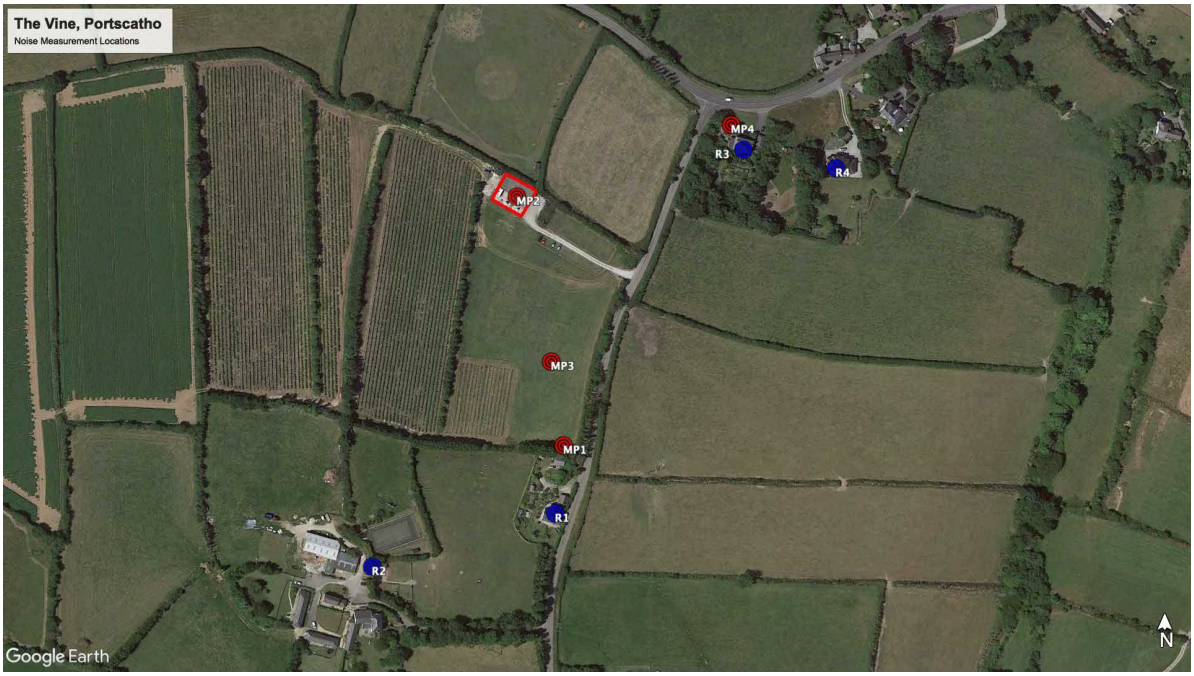
[7] British Standard 7445: 2003: Description and measurement of environmental noise. BSI
[8] British Standard 61672: 2013: Electroacoustics. Sound level meters. Part 1 Specifications. BSI.

The microphones were fitted with protective windshields for the measurements, which are described in Table 5, with an aerial photograph indicating their respective locations shown in Figure 3.

TABLE 5: MEASUREMENT POSITION DESCRIPTIONS

Measurement Position	Description
MP1	An attended and unattended, free-field measurement of sound at the boundary of Wayside. The measurement was undertaken at a height of approximately 15 metres above local ground level. The ambient sound environment was predominantly maintained by distant road traffic on the local roads, with music noise just audible during the event.
MP2	An unattended, reverberant measurement of sound inside the building during the event, to determine the reverberant sound pressure level. The measurement was undertaken at a height of approximately 15 metres above local ground level.
MP3	An attended, free-field measurement of sound between Wayside and the event space, to enable the noise model to be validated. The measurement was undertake at a height of approximately 15 metres above local ground level. The residual sound environment was predominantly maintained by distant road traffic on the local roads, with music noise audible during the event.
MP4	An attended, free-field measurement of sound at the boundary of Highfield House, to enable the noise model to be validated. The measurement was undertaken at a height of approximately 15 metres above local ground level. The residual sound environment was predominantly maintained by road traffic on the local roads, with music noise just audible during the event.

FIGURE 3: MEASUREMENT POSITIONS



4.3. Summary Results

4.3.1. Ambient and Background Sound

The summarised results of the environmental noise measurements, in the absence of entertainment noise associated with Proposed Development, are presented in Table 6.

TABLE 6: SUMMARY OF NOISE MEASUREMENT RESULTS

Position	Period	Noise Level, dB		
		L_{Amax}	$L_{Aeq,T}$	L_{A90}
MP1	Day	70	50	33
	Evening	70	49	31
	Night	65	40	23

4.3.2. Music Noise

The summarised results of the environmental noise measurements from The Vine during the evening of a music event, are presented in Table 7 and Table 8, once corrected for residual sound in the absence music noise.

TABLE 7: SUMMARY OF FIXED NOISE MEASUREMENT RESULTS

Position	Period	Reverberant Music Noise Level, dB $L_{Aeq,T}$
MP2	Entertainment Noise	94

TABLE 8: SUMMARY OF ROAMING MUSIC NOISE MEASUREMENT RESULTS

Position	Period	Music Noise Level, dB $L_{Aeq,T}$
MP1	Entertainment Noise	39
MP3	Entertainment Noise	46
MP4	Entertainment Noise	37

5. CALCULATIONS

5.1. Methodology

In order to calibrate the noise model, the reverberant music noise levels were measured during the event.

Therefore, the validation of the noise model is considered robust for the purposes of predicting the sound emissions associated with amplified regulated entertainment activities at the Site.

5.1.1. Calculation Process

Calculations were carried out using iNoise 2023, which undertakes its calculations in accordance with guidance given in ISO9613-1:1993 and ISO9613-2:1996.

5.1.2. Assumptions

Given that the land between the Proposed Development and nearest receptors is mostly soft, the ground factor has been set according to ground type, using 'ground areas' in the calculation software. The ground area associated with the Proposed Development has been set to 'hard'.

In order to accurately model the land surrounding the development, an AutoCAD DXF drawing was produced, which was based on data provided by the Ordnance Survey.

5.1.3. Music Noise Level Summary

A summary of the calculated maximum average music noise levels at the entertainment area, during the day and evening time periods, can be seen below in Table 9.

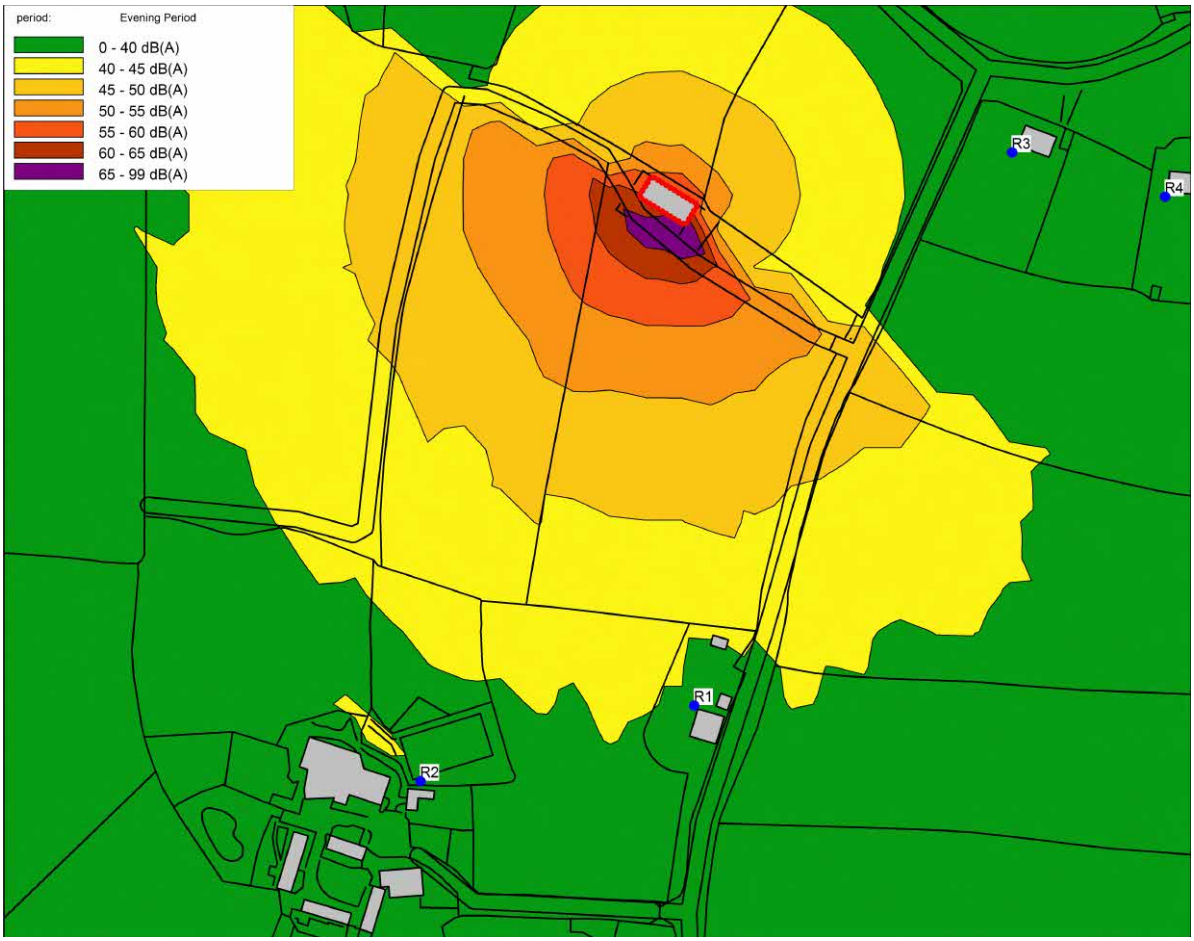
TABLE 9: PREDICTED MUSIC SOUND LEVEL LIMITS SUMMARY

Area	Period	Reverberant Music Noise Level (dBA) in Venue
Entertainment Area	Day 09:00 to 19:00	94
	Evening 19:00 to 23:00	94

5.1.4. Music Noise Level Map

Based on sound emissions outlined in Table 9, the sound map showing the music noise levels from the Site and the most affected noise-sensitive receptors can be seen below in Figure 4.

FIGURE 4: MUSIC SOUND LEVEL MAP



The predicted music noise levels at the nearest noise-sensitive receptors, based on measurements undertaken during an amplified music event, can be seen below in Table 10.

TABLE 10 : PREDICTED MUSIC NOISE LEVELS AT RECEPTORS

Receptor	Predicted Music Noise Level – $L_{Aeq,1\ hour}$ dB	Prevailing Evening Ambient Sound Level - $L_{Aeq,T}$ dB	Cumulative Evening Ambient Sound Level - $L_{Aeq,T}$ dB	Excess over Criterion 1 of DSS
R1	39	49	49	-10
R2	39	49	49	-10
R3	37	49	49	-12
R4	31	49	49	-18

6. ASSESSMENT

6.1. Assessment – Sound Criterion 1

An assessment of the likely change in ambient noise levels has been undertaken in accordance with Criterion 1 of the Cornwall Council Public Protection Development Sound Standard.

Table 11 presents the assessment in noise from the venue associated with Proposed Development at the closest receptors, during the evening time period, as this represents the worst-case scenario (i.e. if the Proposed Development complies during the evening time period, then it will also comply during the daytime period).

TABLE 11: PREDICTED CHANGE IN EVENING TIME AMBIENT SOUND LEVEL AT RECEPTORS

Receptor	Predicted Music Noise Level – $L_{Aeq,1\ hour}$ dB	Prevailing Evening Ambient Sound Level - $L_{Aeq,T}$ dB	Cumulative Evening Ambient Sound Level - $L_{Aeq,T}$ dB	Excess over Criterion 1 of DSS
R1	39	49	49	-10
R2	39	49	49	-10
R3	37	49	49	-12
R4	31	49	49	-18

The assessment detailed in Table 11 above identifies that under worst-case, peak use conditions, noise impacts from the operation of the venue associated with the Proposed Development are predicted to be at least 10 dB below the prevailing ambient noise level, thus achieving the requirements of Criterion 1 of the Cornwall Council Public Protection Development Sound Standard at the nearest noise sensitive receptors, as per Paragraph 8.8 of the aforementioned document.

As such, the threshold at which the *Lowest Observed Adverse Effect Level LOAEL* is defined has not been exceeded, therefore, the development achieves a *No Observed Adverse Effect Level NOAEL*.

For ease of reference, the definition of NOAEL in PPGNoise is reproduced below:

"Noise can be heard, but does not cause any change in behaviour, attitude or other physiological response. Can slightly affect the acoustic character of the area but not such that there is a change in the quality of life."

Consequently, no specific mitigation measures are considered necessary, with regard to noise associated with the Proposed Development.

6.2. Code of Practice on Environmental Noise Control at Concerts

The predicted music sound level has been assessed in accordance with the Code of Practice Criteria, at all NSRs.

The resultant assessment summary, during the daytime period, can be seen in Table 12 below.

TABLE 12 : DAYTIME MUSIC SOUND LEVEL ASSESSMENT SUMMARY

Receptor	Music Sound Level (dB)	Daytime Background Sound Level (dB)	CoP 09:00 to 23:00 Criteria	Excess of Music Sound Leve over CoP Criteria Level (dB
R1	39	33	48	-9
R2	39	33	48	-9
R3	37	33	48	-11
R4	31	33	48	-17

It can be seen that the criteria outlined in the Code of Practice on Environmental Noise Control at Concerts has been met at nearest noise sensitive receptors during the daytime period.

The resultant assessment summary, during the evening time period, can be seen in Table 13 below.

TABLE 13 : EVENING TIME MUSIC SOUND LEVEL ASSESSMENT SUMMARY

Receptor	Music Sound Level (dB)	Evening Time Backgrour Sound Level (dB)	CoP 09:00 to 23:00 Criteria	Excess of Music Sound Leve over CoP Criteria Level (dB
R1	39	31	46	-7
R2	39	31	46	-7
R3	37	31	46	-9
R4	31	31	46	-15

It can be seen that the criteria outlined in the Code of Practice on Environmental Noise Control at Concerts has been met at nearest noise sensitive receptors during the evening time period.

7. CONCLUSION

inacoustic has been commissioned to assess the impact of music/ event noise from The Vine, Portscatho. The Proposed Development has temporary planning permission to operate under Class E(b) usage on a seasonal basis between April to October in any given year. The Applicant is seeking to amend the permission to remove the time limited nature of it, as well to extend operating hours to 23:00, with up to 12 Nº events in any calendar year.

This technical noise assessment has been produced to provide supporting information to accompany a s73 Planning Application to Cornwall Council and is based upon environmental noise measurements undertaken at the site.

The assessment considers the potential noise emissions arising from peak usage of the proposed noise-generating uses. On the basis of this worst-case scenario assessment, the predicted sound impacts have been identified to be in the range of barely perceptible and negligible; considered to be within the *No Observed Adverse Effect Level* (NOAEL) category of PPG Noise, and comfortably comply with the requirements of the Cornwall Council Development Sound Standard Sound Criterion 1and the Code of Practice on Environmental Noise Control at Concerts.

Consequently, no specific acoustic mitigation measures are considered necessary in relation to the operation of the Proposed Development.

In light of the above, which demonstrates that the site is predicted to meet the requirements of the relevant planning guidance, it is considered that noise does not present a constraint to the granting of planning permission for the Proposed Development.

8. APPENDICES

8.1. Appendix A – Definition of Terms

Sound Pressure	Sound, or sound pressure, is a fluctuation in air pressure over the s ambient pressure.
Sound Pressure Level (Sound Level)	The sound level is the sound pressure relative to a standard referenc pressure of 20µPa ($20x10^{-6}$ Pascals) on a decibel scale.
Decibel (dB)	A scale for comparing the ratios of two quantities, including sou pressure and sound power. The difference in level between two sou and s2 is given by 20 log10 (s1 / s2). The decibel can also be usec measure absolute quantities by specifying a reference value that f one point on the scale. For sound pressure, the reference value is 2(µPa. 1
A-weighting, dB(A)	The unit of sound level, weighted according to the A-scale, which takes into account the increased sensitivity of the human ear at som frequencies.
Noise Level Indices	Noise levels usually fluctuate over time, so it is often necessary t consider an average or statistical noise level. This can be done in severa ways, so a number of different noise indices have been defined according to how the averaging or statistics are carried out.
$L_{eq,T}$	A noise level index called the equivalent continuous noise level ov time period T. This is the level of a notional steady sound that wc contain the same amount of sound energy as the actual, possibl fluctuating, sound that was recorded.
$L_{max,T}$	A noise level index defined as the maximum noise level during the period T. L_{max} is sometimes used for the assessment of occasional loud nois which may have little effect on the overall L_{eq} noise level but will still affect the noise environment. Unless described otherwise, it is meas using the 'fast' sound level meter response.
$L_{90,T}$	A noise level index. The noise level exceeded for 90% of the time ov period T. L_{90} can be considered to be the "average minimum" noise l and is often used to describe the background noise.
$L_{10,T}$	A noise level index. The noise level exceeded for 10% of the time over period T. L_{10} can be considered to be the "average maximum" noise l Generally used to describe road traffic noise.
Free-Field	Far from the presence of sound reflecting objects (except the gr usually taken to mean at least 3.5m
Facade	At a distance of 1m in front of a large sound reflecting object such building façade.
Fast Time Weighting	An averaging time used in sound level meters. Defined in BS 596

In order to assist the understanding of acoustic terminology and the relative change in noise, the following background information is provided.

The human ear can detect a very wide range of pressure fluctuations, which are perceived as sound. In order to express these fluctuations in a manageable way, a logarithmic scale called the decibel, or dB scale is used. The decibel scale typically ranges from 0 dB (the threshold of hearing) to over 120 dB. An indication of the range of sound levels commonly found in the environment is given in the following table.

TABLE 14 : TYPICAL SOUND LEVELS FOUND IN THE ENVIRONMENT

Sound Level	Location
0dB(A)	Threshold of hearing
20 to 30dB(A)	Quiet bedroom at night
30 to 40dB(A)	Living room during the day
40 to 50dB(A)	Typical office
50 to 60dB(A)	Inside a car
60 to 70dB(A)	Typical high street
70 to 90dB(A)	Inside factory
100 to 110dB(A)	Burglar alarm at 1m away
110 to 130dB(A)	Jet aircraft on take off
140dB(A)	Threshold of Pain

The ear is less sensitive to some frequencies than to others. The A-weighting scale is used to approximate the frequency response of the ear. Levels weighted using this scale are commonly identified by the notation dB(A).

In accordance with logarithmic addition, combining two sources with equal noise levels would result in an increase of 3 dB(A) in the noise level from a single source.

A change of 3 dB(A) is generally regarded as the smallest change in broadband continuous noise which the human ear can detect (although in certain controlled circumstances a change of 1 dB(A) is just perceptible). Therefore, a 2 dB(A) increase would not be normally be perceptible. A 10 dB(A) increase in noise represents a subjective doubling of loudness.

A noise impact on a community is deemed to occur when a new noise is introduced that is out of character with the area, or when a significant increase above the pre-existing ambient noise level occurs.

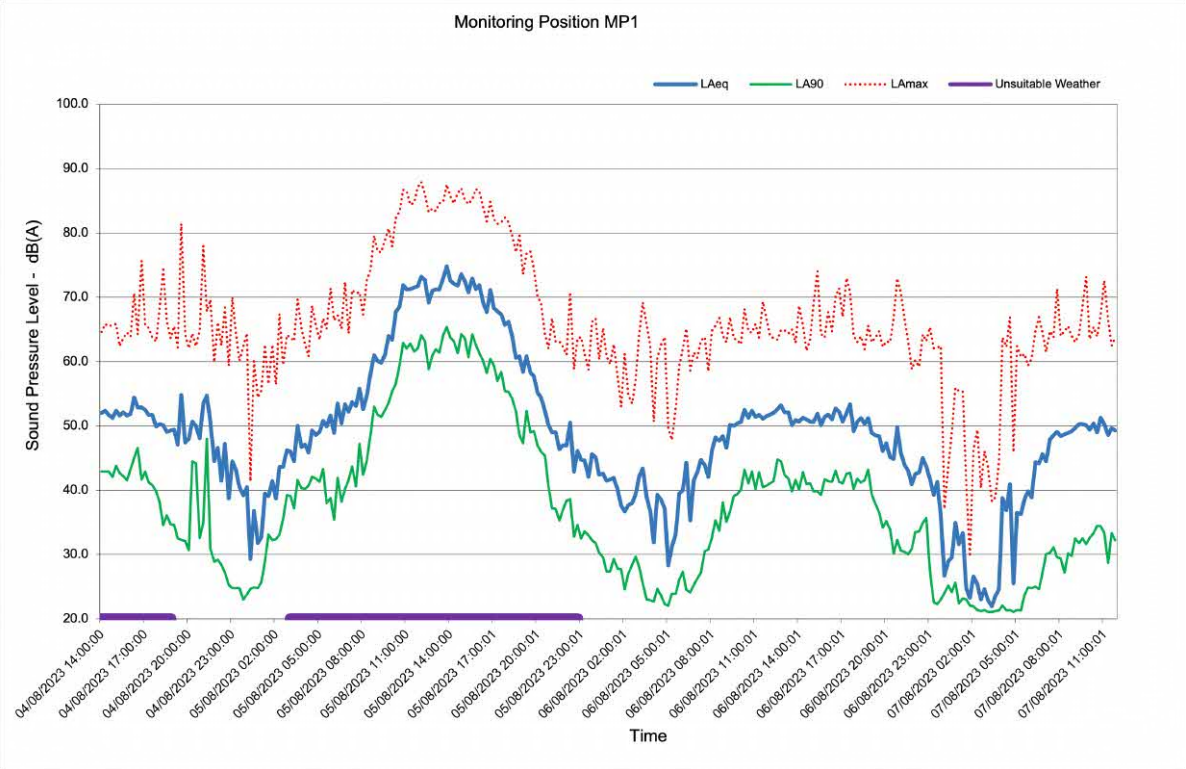
For levels of noise that vary with time, it is necessary to employ a statistical index that allows for this variation. These statistical indices are expressed as the sound level that is exceeded for a percentage of the time period of interest. In the UK, traffic noise is measured as the $L_{A\,10}$, the noise level exceeded for 10% of the measurement period. The L_{A90} is the level exceeded for 90% of the time and has been adopted to represent the background noise level in the absence of discrete events. An alternative way of assessing the time varying noise levels is to use the equivalent continuous sound level, L_{Aeq}.

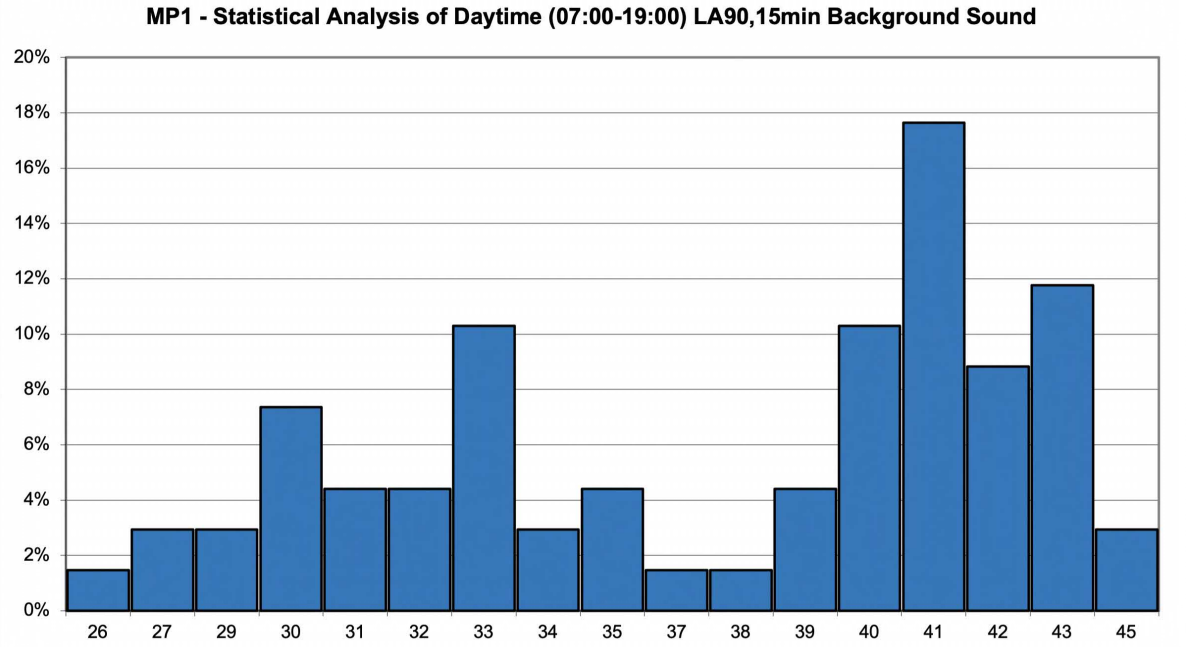
This is a notional steady level that would, over a given period of time, deliver the same sound energy as the actual fluctuating sound.

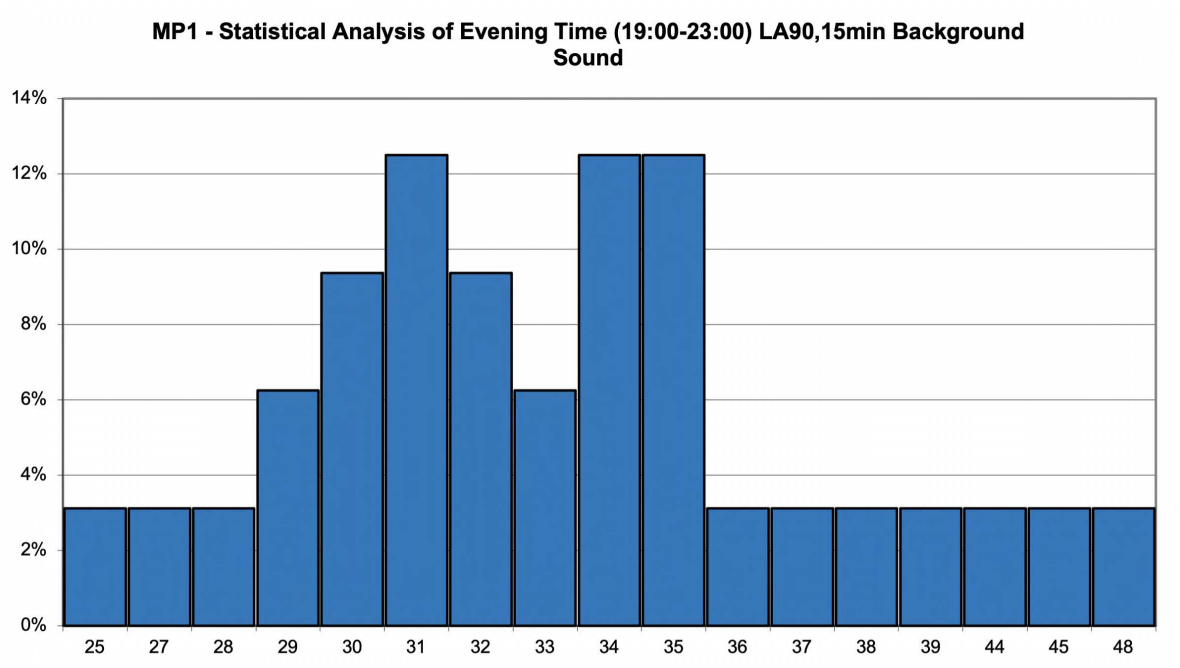
To put these quantities into context, where a receiver is predominantly affected by continuous flows of road traffic, a doubling or halving of the flows would result in a just perceptible change of 3 dB, while an increase of more than 25%, or a decrease of more than 20%, in traffic flows represent changes of 1 dB in traffic noise levels (assuming no alteration in the mix of traffic or flow speeds).

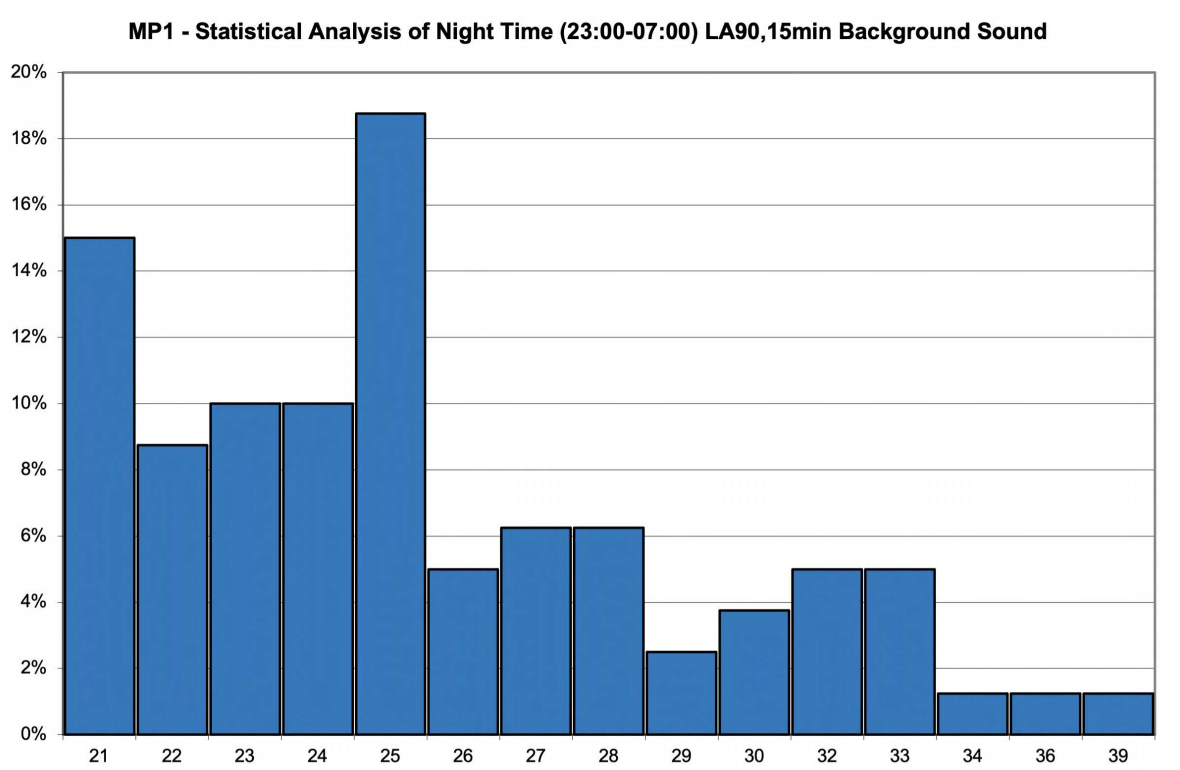
Note that the time constant and the period of the noise measurement should be specified. For example, BS 4142 specifies background noise measurement periods of 1hour during the day and 15 minutes during the night. The noise levels are commonly symbolised as $L_{A90,1hour}$ dB and $L_{A90,15mins}$ dB. The noise measurement should be recorded using a 'FAST' time response equivalent to 0.125 ms.

8.2. Appendix B – Measurement Results






MP1 - Statistical Analysis of Evening Time (19:00-23:00) LA90,15min Background Sound
14%
12%
10%
8%
6%
4%
2%
0%
25
27
28
29
30
31
32
33
34
35
36
37
38
39
44
45
48


MP1 - Statistical Analysis of Night Time (23:00-07:00) LA90,15min Background Sound
20%
18%
16%
14%
12%
10%
8%
6%
4%
2%
0%
21
22
23
24
25
26
27
28
29
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