HERRING STORER ACOUSTICS

DYNAMIC PLANNING AND DEVELOPMENTS

NOISE MANAGEMENT PLAN - TAVERN
84 – 88 GOODWOOD PARADE
BURSWOOD

ACOUSTIC ASSESSMENT

JULY 2025

OUR REFERENCE: 34761-3-25191

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BURSWOOD TAVERN

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EXECUTIVE SUMMARY

Herring Storer Acoustics have been commissioned to carry out an acoustical assessment of noise emissions associated with tavern at 84 – 88 Goodwood Parade, Burswood.

It is noted that the surrounding premises, whilst currently commercial, have been requested to be considered as potentially residential premises in the future to account for the re-zoning of the area.

The findings of this assessment are that noise level emissions associated with the tavern are currently compliant with the relevant assigned noise levels stipulated by the *Environmental Protection (Noise) Regulations 1997.* This finding is on the basis of the venue (and external areas) being open at any time of day/night.

This finding changes in the event that surrounding locations are redeveloped to include residential premises. It is recommended that the noise management for the tavern include consideration of noise control measures in the event such redevelopment occurs.

Noise levels are currently compliant in the surrounding areas, however, it is recommended that noise levels within the courtyard be restricted to 75 dB(A) when measured in the centre of the courtyard. This would preclude DJ or live music. The method of restricting this noise level would for part of the operational noise management plan of the venue, and consist either of a limiter, or amplifier with volume controls “locked out” such that it is not accessible to alter.

An operational noise management plan would also include any noise complaint handling procedures.

It is understood that the City of Victoria Park has recommended that an operational noise management plan is provided by the operator, outlining noise management and compliance measures, prior to occupancy of the premises.

1.0 INTRODUCTION

Herring Storer Acoustics have been commissioned, through Dynamic Planning, to carry out an acoustical assessment of noise emissions associated with the tavern at 84 – 88 Goodward Parade, Burswood.

The objectives of the study were to:

- Construct a predictive noise model for noise levels of associated with the development.
- Assess the predicted noise levels received at the closest noise sensitive premises, for compliance with the *Environmental Protection (Noise) Regulations 1997*.
- If exceedances are predicted, investigate possible noise control options that will reduce noise emissions to achieve compliance with the regulations.

The work is understood to have been requested by council.

It is noted that the surrounding premises, whilst currently commercial, have been requested to be considered as potentially residential premises in the future to account for the re-zoning of the area.

2.0 CRITERIA

The *Environmental Protection (Noise) Regulations 1997* stipulate the allowable noise levels at any noise sensitive premises from other premises. The allowable noise level is determined by the calculation of an influencing factor, which is added to the baseline criteria set out in Table 1 of the Regulations. The baseline assigned noise levels are listed in Table 2.1.

TABLE 2.1 – ASSIGNED NOISE LEVELS

Premises Receiving Noise	Time of Day	Assigned Level (dB)		
		$L_{A\ 10}$	$L_{A\ 1}$	$L_{A\ max}$
Noise sensitive premises within 15 metres of a dwelling	0700 - 1900 hours Monday to Saturday	45 + IF	55 + IF	65 + IF
	0900 - 1900 hours Sunday and Public Holidays	40 + IF	50 + IF	65 + IF
	1900 - 2200 hours all days	40 + IF	50 + IF	55 + IF
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and Public Holidays	35 + IF	45 + IF	55 + IF

Note: The L_{A10} noise level is the noise that is exceeded for 10% of the time.
The L_{A1} noise level is the noise that is exceeded for 1% of the time.
The L_{Amax} noise level is the maximum noise level recorded.

It is a requirement that noise from the site be free of annoying characteristics (tonality, modulation and impulsiveness) at other premises, defined below as per Regulation 9.

"impulsiveness" means a variation in the emission of a noise where the difference between L_{Apeak} and $L_{Amax\ Slow}$ is more than 15dB when determined for a single representative event.

"modulation" means a variation in the emission of noise that –

(a) is more than 3dB $L_{A\ Fast}$ or is more than 3dB $L_{A\ Fast}$ in any one-third octave band;
(b) is present for more at least 10% of the representative assessment period; and
(c) is regular, cyclic and audible;

"tonality" means the presence in the noise emission of tonal characteristics where the difference between –

(a) the A-weighted sound pressure level in any one-third octave band; and
(b) the arithmetic average of the A-weighted sound pressure levels in the 2 adjacent one-third octave bands,

is greater than 3 dB when the sound pressure levels are determined as $L_{Aeq,T}$ levels where the time period T is greater than 10% of the representative assessment period, or greater than 8 dB at any time when the sound pressure levels are determined as $L_{A\ Slow}$ levels.

Where the above characteristics are present and cannot be practicably removed, the following adjustments are made to the measured or predicted level at other premises.

TABLE 2.2 – ADJUSTMENTS FOR ANNOYING CHARACTERISTICS

Where tonality is present	Where modulation is present	Where impulsiveness is present
+ 5 dB	+ 5 dB	+ 10 dB

Where the noise emission is music, then any measured level is adjusted according to Table 2.3 below.

TABLE 2.3 – ADJUSTMENTS TO MEASURED MUSIC NOISE LEVELS

Where **impulsiveness** is not present	Where **impulsiveness** is present
+10 dB(A)	+15 dB(A)

The nearest noise sensitive premises considered in our assessment are as shown in Figure 1 below. It is noted that these premises are currently commercial, hence, for current operations have been assessed as such. Council have requested that consideration be given to any potential change of use in the surrounds in the future. This has also been considered – however – "C1" has been considered to remain as a commercial premises as the age of the building is such that it would appear a reasonable assumption that this would remain the case for the foreseeable future.

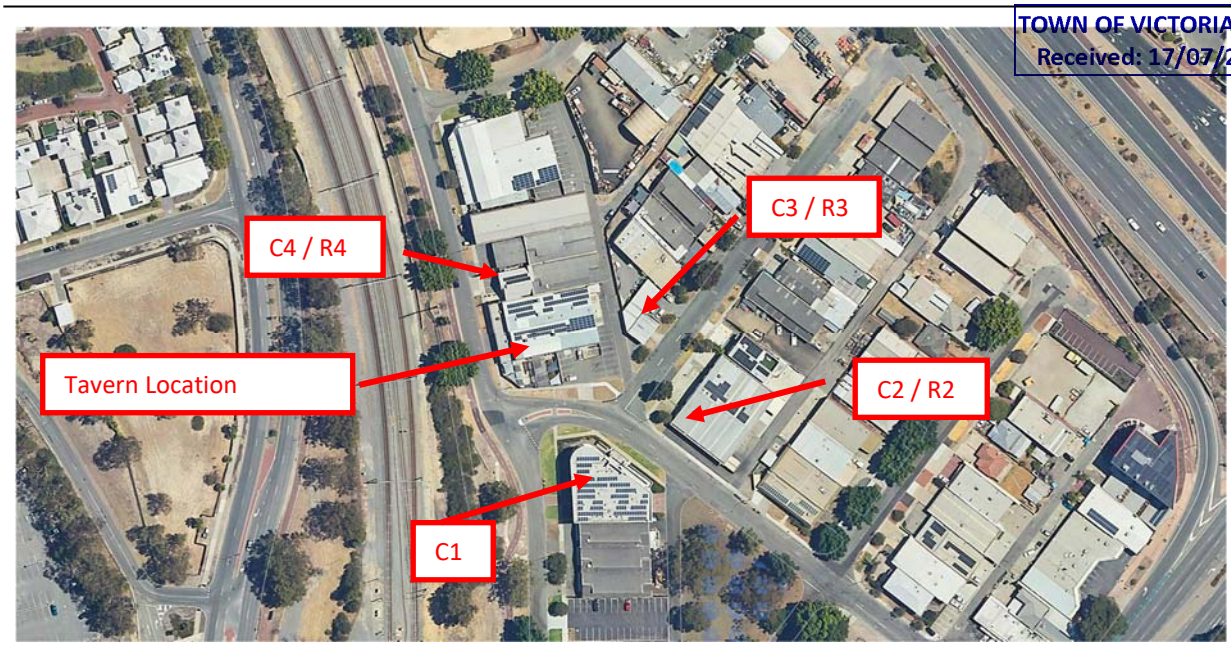

FIGURE 1 –TAVERN LOCATION AND SURROUNDS

The influencing factors at the identified premises surrounding the tavern – assuming that they are noise sensitive premises - has been determined, with the calculation based on the following.

Major Road within outer Circle	
Great Eastern Highway	+ 2 dB
Graham Farmer Freeway	+ 2 dB
Victoria Park Drive	+ 2 dB
Commercial Premises within Inner Circle	
60%	+ 3 dB
Commercial Premises within Inner Outer Circle	
20%	+ 1 dB

Hence, the influencing factor at the residential premises considered in our assessment has been calculated at 10 dB.

Therefore, Table 2.4 below summarises the Assigned Noise Levels at the nearest residential premises.

TABLE 2.4 - ASSIGNED OUTDOOR NOISE LEVELS: R1 TO R6

Premises Receiving Noise	Time of Day	Assigned Level (dB)		
		L_{A10}	L_{A1}	L_{Amax}
Noise sensitive premises within 15 metres of a dwelling	0700 - 1900 hours Monday to Saturday	55	65	75
	0900 - 1900 hours Sunday and Public Holidays	50	60	75
	1900 - 2200 hours all days	50	60	65
	2200 hours on any day to 0700 hours Monday to Saturday and 0900 hours Sunday and Public Holidays	45	55	65
Commercial Premises	All Hours	60	75	80

Note: L_{A10} is the noise level exceeded for 10% of the time.
L_{A1} is the noise level exceeded for 1% of the time.
L_{Amax} is the maximum noise level.

3.0 METHODOLOGY

Noise modelling of the noise propagation from the proposed development was carried out using the environmental noise modelling computer program, "SoundPlan".

Input data for computer modelling included:

- Design of development as per drawings in Appendix A.
- EPA standard weather condition for the day and night periods (see Table 3.1).
- Sound power levels, as summarised in Table 3.2.

TABLE 3.1 - WEATHER CONDITIONS

Condition	Day Period	Night Period
Temperature	20 °C	15 °C
Relative humidity	50%	50%
Pasquil Stability Class	E	F
Wind speed	4 m/s*	3 m/s*

* From source to receiver

TABLE 3.2 – SOUND POWER LEVELS OF NOISE SOURCES

DESCRIPTION	dB(A)
Patrons	66/m^2

The patron noise level is akin to a beer garden noise level, which would be considered conservative.

Background music alone should be played in these external areas, with music noise levels set such that it is not audible outside of the premises above patron noise levels. The noise level of music has been set at 75 dB(A) throughout the area so that the music level can be considered to be conversation level. This noise level can be measured in the centre of the courtyard for compliance purposes and excludes DJ or live music.

For the above sound power levels, single point calculations were undertaken for the following scenarios. The modelled scenarios are based upon maximum occupancy of the venue and external areas :

Scenario 1: Patrons in external areas of tavern (conversation level music) – doors to internal areas closed.

Scenario 2: Patrons in external areas of tavern (conversation level music) – doors to internal areas open.

4.0 RESULTS

Noise levels at the identified neighbouring premises associated with the tavern operations are as listed below in Table 4.1. The nearest identified premises are currently generally single floor, however, in response to councils request to consider potential future residential development, noise levels at up to eight floors high have been calculated.

To assist in simplifying reporting, only the highest noise level calculated has been presented for all floors considered.

TABLE 4.1 – CALCULATED NOISE LEVELS AT NOISE SENSITIVE PREMISES

Location	Scenario	
	1 - Patrons Only Externally (conversation level music) Doors to internal areas CLOSED	2 - Patrons Only Externally (conversation level music) Doors to internal areas OPEN
C1	50	53
C2	47	50
C3	45	48
C4	35	36
R2	52	53
R3	53	56
R4	48	50

5.0 ASSESSMENT

Noise levels associated with the various scenarios considered have been examined for the potential to contain annoying characteristics in accordance with the *Environmental Protection (Noise) Regulations 19*97.

With the restrictions to music in place for the external areas, there are no adjustments applicable to the calculated noise levels.

Therefore, Tables 5.1 to 5.3 summarises the assessment of the calculated noise levels against the pertinent Assigned Noise Levels for each scenario considered.

TABLE 5.1 – ASSESSMENT – SCENARIO 1 – PATRONS IN EXTERNAL AREAS – DOORS TO INTERNAL AREAS CLOSED

Location	Assessable Noise Level, dB(A)	Applicable Times of Day	Applicable L_{A10} Assigned Level (dB)	Exceedance to Assigned Noise Level (dB)
C1	50	All Hours	60	Complies
C2	47	All Hours	60	Complies
C3	45	All Hours	60	Complies
C4	35	All Hours	60	Complies
R2	52	Day	55	Complies
		Sunday / Public Holiday Day Period	50	+ 2 dB
		Evening	50	+ 2 dB
		Night	45	+ 7 dB
R3	53	Day	55	Complies
		Sunday / Public Holiday Day Period	50	+ 3 dB
		Evening	50	+ 3 dB
		Night	45	+ 8 dB
R4	48	Day	55	Complies
		Sunday / Public Holiday Day Period	50	Complies
		Evening	50	Complies
		Night	45	+ 3 dB

TABLE 5.2 – ASSESSMENT – SCENARIO 2 – PATRONS IN EXTERNAL AREAS – DOORS TO INTERNAL AREAS OPEN

Location	Assessable Noise Level, dB(A)	Applicable Times of Day	Applicable L_{A10} Assigned Level (dB)	Exceedance to Assigned Noise Level (dB)
C1	53	All Hours	60	Complies
C2	50	All Hours	60	Complies
C3	48	All Hours	60	Complies
C4	36	All Hours	60	Complies
R2	53	Day	55	Complies
		Sunday / Public Holiday Day Period	50	+ 3 dB
		Evening	50	+ 3 dB
		Night	45	+ 8 dB
R3	56	Day	55	+ 1 dB
		Sunday / Public Holiday Day Period	50	+ 6 dB
		Evening	50	+ 6 dB
		Night	45	+ 11 dB
R4	50	Day	55	Complies
		Sunday / Public Holiday Day Period	50	Complies
		Evening	50	Complies
		Night	45	+ 3 dB

6.0 CONDITIONS FOR COMPLIANCE TO BE ACHIEVED

As can be seen from the assessment in Section 5, noise level emissions associated with the tavern currently comply at the nearest premises – at all hours.

Noise levels within the centre of the courtyard are to be set to 75 dB(A). Noting that this is representative of background music noise levels, and precluded DJ's or Live music.

The venue, including external areas, has been considered for all operational hours in respect to the Environmental Protection (Noise) Regulations 1997 – i.e. no restrictions on times due to noise impacts.

In the event that surrounding premises are re-developed to include residential premises – being up to 8 floors high – noise levels would exceed the relevant Assigned Noise Levels during the evening/Sunday Day period marginally, and during the night period.

7.0 CONCLUSION

Based on the above assessment, noise level emissions associated with the tavern are currently in compliance with the relevant assigned noise levels stipulated by the *Environmental Protection (Noise) Regulations 1997.*

It is noted that for the above finding changes in the event that surrounding locations are redeveloped to include residential premises. It is recommended that the noise management for the tavern include consideration of noise control measures in the event such redevelopment occurs.