

THE WOOLSHED - CAIRNS



AMPLIFIED ENTERTAINMENT ASSESSMENT

REPORT FOR The Woolshed - Cairns
NOMINEE Steve Strudwick
DATE OF TEST 9.30pm to 5.00am 16 / 17 June 2014
LOCATION 24 Shields Street Cairns
ASSESSMENT by Ross H. Palmer CPEng - Principal
REPORT DATE 24th June 2014

Project Number: 3696

1.0 OBJECT

The Woolshed has changed the layout and ceiling sound system for their upper level bar and the layout for the lower level bar. In the upper level bar a JBN sound ceiling has been installed to control the spill of sound to adjacent residential areas. Palmer Acoustics has been commissioned to:

- Establish noise limits for the upper level bar with doors open 9pm to 5am;
- Establish noise limits for the lower level bar doors open and doors closed 9pm to 5am.

This report presents the outcome of our assessment and provides noise limits such that noise impacts at the nearest noise sensitive premises are within the limits prescribed by the Liquor Licensing Division for day and night operation to 5am.

2.0 EQUIPMENT AND PROCEDURES

Equipment

The following equipment was used in this assessment:

- RION NA27 1:1 Real Time Octave Band Analyser (serial number 00311535) c/w Rion UC 53 Microphone (serial number 101103) calibration due 21-7-2014
- RION NC 72 Calibrator (serial number 10697003) calibration due 22-5-2013

The in house speaker sound system was played using the Jimmy Barns track "Cold Chisel". This track was selected due to its heavy 63 Hz bass sound spectrum.

Calibration

Before and after calibration levels were as follows:
(before/after) 93.9 / 93.9 dB

Procedures

Noise levels were measured as fast response levels at 3m from the JBN Grid ceiling in the upstairs entertainment area, and 3m from the wall mounted speakers in the lower bar. The resulting breakout levels were measured in front of the Hyde's Corner Accommodation units. Levels were evaluated over 60sec measurement periods. A short assessment period was set to enable the maximum level of entertainment noise to be captured. Ambient levels were assessed over a 15-minute period.

The nearest noise sensitive location, the Hydes Corner Accommodation units, is located approximately 60m from the Woolshed balcony.

The tests were carried out with the upper level balcony doors open and with the lower doors open and closed.

Weather Conditions Overcast, calm with a slight drizzle. Temperatures approximately 18°C, with the RH close to 80%.

3.0 ENTERTAINMENT NOISE IMPACTS

At the nearest affected dwelling the Liquor Licensing Division require that:

- before 10pm that the $L_{Amax,adj,t}$ for noise from the operation of any amplified entertainment noise to not exceed the background levels L_{A90} in the absence of any amplified entertainment by more than 10 dB.
- after 10pm the L_{10} octave band entertainment noise level between 63 Hz and 2 kHz to not exceed the corresponding octave band L_{90} background levels by more than 8 dB.

4.0 SOUND CONTROL MEASURES

The venue is constructed of concrete block and is air conditioned. To maximize sound levels in the bar and to reduce noise impacts to Hyde's, the Woolshed has installed a JBN sound ceiling. The key feature of this speakers system is that it localizes sound to under the speakers with a much greater than normal drop off to the side of the grid speakers. The effect is to allow higher local sound levels with levels immediately adjacent close to 10 dB lower than would occur with a conventional speaker system. In the lower bar area, conventional speakers are used with a sound lock entry.

In the lower bar area there is a combined sliding door, sliding acoustic screen creating a sound lock entry/exit for this bar.

5.0 RESULTS and CALCULATIONS

Background noise levels were measured at measurement location ML2 at 9.45pm, and 4.30am on the night of Monday 16th June 2014. The 3:00am level gave the lowest reading (L90) owing to the absence of street and entertainment noise on earlier in the evening and increasing bird and general road traffic noise after 3.30am. At 4.30am higher levels were measured due to increasing street traffic.

The amplified music was operated at a high level and the resulting breakout levels were observed at location ML3.

At the time of the tests The Woolshed was operating with a late license to 5am to allow patrons to watch a world cup game between 2 and 4 am. The effect of this was for these to be lower ambient noise level (due to general activities in the area of the club) earlier in the evening with a rise in noise between midnight and 3am. On this basis we have elected to use the lower pre 10pm background level of 55 dB(A) and apply this until 5am as our measurements showed this to be the lowest background level throughout the night. We note that these levels are slightly higher than levels measured 10 years back showing that the ambient noise levels in this area have over time risen due to increased day/night activity in the area.

The following levels were measured and limits calculated:

A. Limits 10pm to 5am

1. Upper Level Bar With JBN Ceiling - Door Open

Frequency Hz	63	125	250	500	1K	2K	dB(C).	dB(A)
ML 1 - Entertainment (L10) 3m from JBN	100.9	100.3	95.9	90.9	91.2	95.8	104	98
ML 3 - Entertainment noise at Hyde's (L10)	64.7	60.3	57.8	56.1	52.9	56.1		60
ML 3 Typical Background (L90) Music Off 3am	56.9	56.9	49.8	48.2	45.9	42.3		52
Rise	5.7	4.1	8.6	6.7	4.6	9.3		
Limit (octave band + 8) 104 - 8.6 + 8 dB(C).	103.4							dB(C).
Note: Noise level under the JBN speakers								112 dB(C)

2. Lower Level Bar - Doors Closed

Frequency Hz	63	125	250	500	1K	2K	dB(C).	dB(A)
ML 2 - Entertainment (L10) 3m from speakers	109.5	109.5	92.4	93.3	96.7	98.4	112	98
ML 3 - Entertainment noise at Hyde's (L10)	65.5	61	54.7	53.3	53.4	53		61
ML 3 Typical Background (L90) Music Off 3am	56.9	56.9	49.8	48.2	45.9	42.3		52
Rise	6.5	4.8	5.5	3.9	5.1	6.2		
Limit (octave band + 8) 112 - 6.5 + 8	113.5							dB(C).

3. Lower Level Bar - Doors Open.

Frequency Hz	63	125	250	500	1K	2K	dB(C).	dB(A)
ML 2 - Entertainment from ML1 (L10)	109.5	109.5	92.4	93.3	96.7	98.4	112	98
ML 3 - Entertainment noise at Hyde's (L10)	70.4	65.9	54.8	53.7	54.9	52.8		62
ML 3 Typical Background (L90) Music Off 3am	56.9	56.9	49.8	48.2	45.9	42.3		52
Rise	13.5	9.0	5.0	5.5	9.0	10.5		
Limit (octave band + 8) 112 - 13.5 + 8	106.5	dB(C).						

B. Limits 10am to 10pm

Based upon the Liquor Licensing limits of background + 10 and allowing for a corrections as per AS1055, we find the following limits:

Upper Level with JBN Ceiling Doors Open or Closed	
Source level J	104 dB(C) 3m to the side of the JBN ceiling
BGD Background level before 10pm ML 3	52 dB(A)
Level from JBN	60 dB(A)
Allowable rise above BGD +10	62
Allowable entertainment level ML 1	106 dB(C) at 3m to the side of the sound ceiling.

Lower level Entertainment Doors Open or Closed	
Source level at ML 2	112 dB© @ 3m from speakers
BGD Background level before 10pm ML 3	52 dB(A)
Level from speakers ML 3	60 dB(A)
Allowable rise above BGD +10	62
Allowable entertainment level ML 1	114 dB© at 3m from speakers

Note: The test showed that opening or closing the doors has little effect on the measured dB(A) sound pressure levels, but changed the low frequency measured levels.

SUMMARY

Day Limits: 10am to 10pm

- Upper level at 3 m to the side of the JBN Sound Ceiling
Door Open 106 dB(C)
- Ground level at 3m from speakers
Door Open 114 dB(C)
Doors Closed 114 dB(C)

Night limits: 10pm to 5am

- Upper level at 3 m to the side of the JBN Sound Ceiling
Door Open 103 dB(C)
- Ground level at 3m from speakers
Door Open 106 dB(C)
Doors Closed 113 dB(C)

Note: A level of 103 dB(C) at 3m to the side of the JBN ceiling speakers represents a level of 112 dB(C) immediately under the grid ceiling speakers (1.2m above the floor).

6.0 CONCLUSIONS & RECOMMENDATIONS

Our assessment shows that there is a range of operational noise limits applicable to the operation of The Woolshed, depending upon the time of the day (i.e. background noise levels) and whether or not the lower bar doors were are open or closed. These test set limits for the two entertainment areas. The tests also show that the JBN system has been effective in allowing noise level under the speakers 10 dB higher that would have been otherwise applicable from a conventional speaker system.

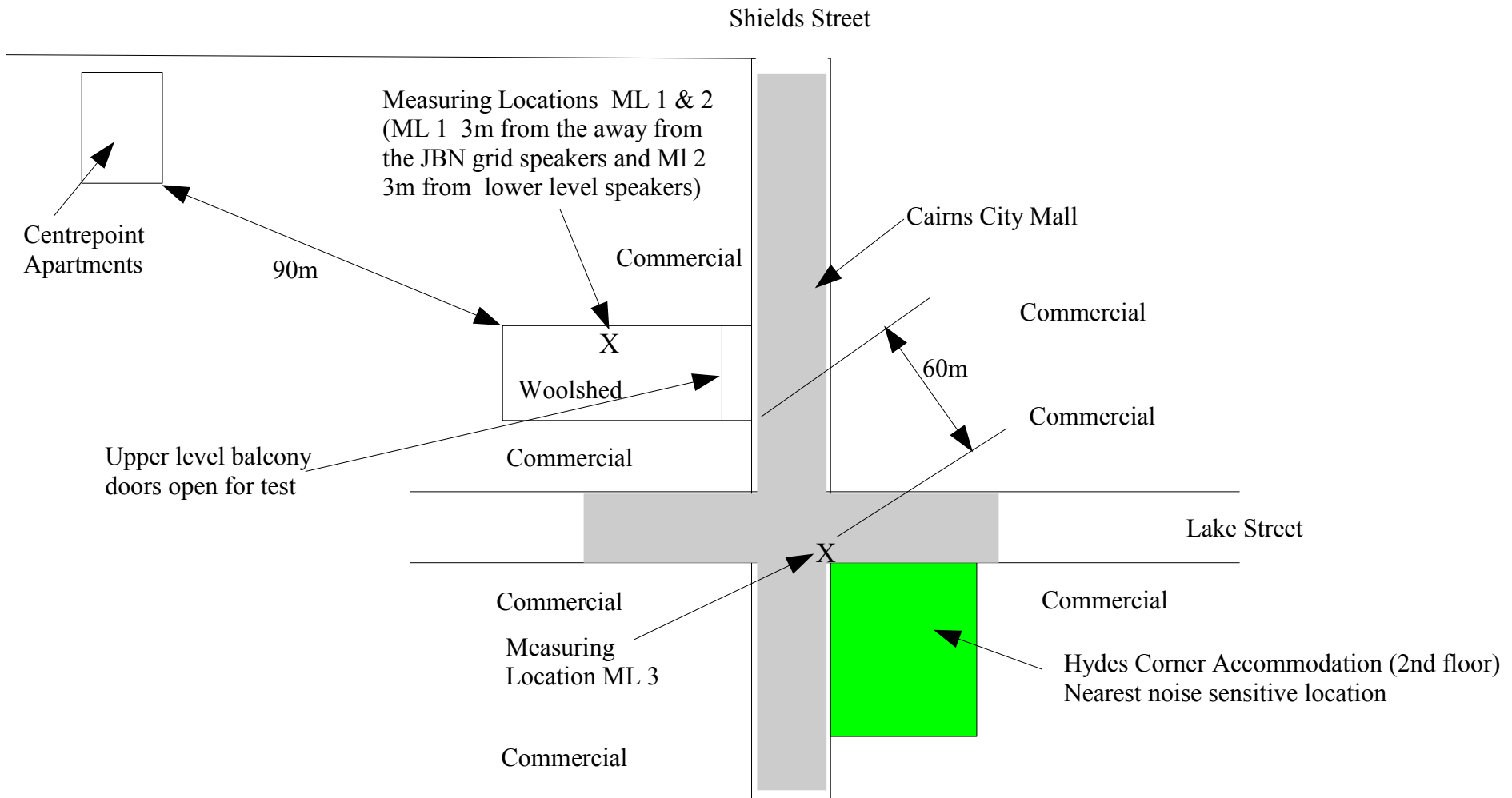
Subject to limiting the sound levels as defined above, we submit that the operation of amplified music within the Woolshed will meet the acoustic requirements set by the Liquor Licensing Division (in accordance with Regulation 40 of the Liquor Regulation 2002) for amplified entertainment at an adjacent noise affected premises.



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ENCL Locality Plan: Sketch 1



Palmer Acoustics Pty Ltd Acoustic Engineers & Scientists	Title Site Layout and Measurement Locations	Sketch No. 1	Project Number 3696
24 Mexicanus Dr Park Ridge, QLD 4118 Australia Ph (07) 3806 7522	Project The Woolshed Shields Street Cairns	Date 24 June 2014	Scale NTS