



RAPT
CONSULTING

Noise Assessment – 29 Grey Street Clarence Town, NSW.

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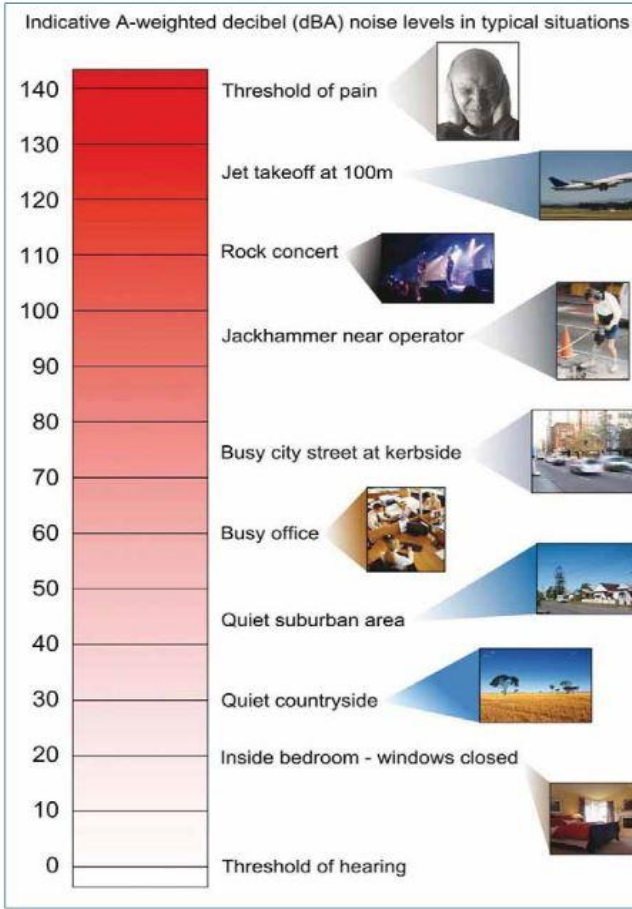
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Glossary of Acoustic Terms

Term	Definition
dB	<p>Decibel is the unit used for expressing the sound pressure level (SPL) or power level (SWL) in acoustics. The picture below indicates typical noise levels from common noise sources.</p> 
dB(A)	<p>Frequency weighting filter used to measure 'A-weighted' sound pressure levels, which conforms approximately to the human ear response, as our hearing is less sensitive at very low and very high frequencies.</p>
$L_{Aeq}(\text{period})$	<p>Equivalent sound pressure level: the steady sound level that, over a specified period of time, would produce the same energy equivalence as the fluctuating sound level actually occurring.</p>
$L_{A10}(\text{period})$	<p>The sound pressure level that is exceeded for 10% of the measurement period.</p>

$L_{A90}(\text{period})$	The sound pressure level that is exceeded for 90% of the measurement period.
L_{Amax}	The maximum sound level recorded during the measurement period.
Noise sensitive receiver	<ul style="list-style-type: none"> ▶ An area or place potentially affected by noise which includes: ▶ A residential dwelling. ▶ An educational institution, library, childcare centre or kindergarten. ▶ A hospital, surgery or other medical institution. ▶ An active (e.g. sports field, golf course) or passive (e.g. national park) recreational area. ▶ Commercial or industrial premises. ▶ A place of worship.
Rating Background Level (RBL)	The overall single-figure background level representing each assessment period (day/evening/night) over the whole monitoring period.
Feasible and Reasonable (Noise Policy for Industry Definition)	<p>Feasible mitigation measure is a noise mitigation measure that can be engineered and is practical to build and/or implement, given project constraints such as safety, maintenance and reliability requirements.</p> <p>Selecting Reasonable measures from those that are feasible involves judging whether the overall noise benefits outweigh the overall adverse social, economic and environmental effects, including the cost of the mitigation measure. To make a judgement, consider the following:</p> <ul style="list-style-type: none"> ▶ Noise impacts ▶ Noise mitigation benefits ▶ Cost effectiveness of noise mitigation ▶ Community views.
Sound power level (SWL)	The sound power level of a noise source is the sound energy emitted by the source. Notated as SWL, sound power levels are typically presented in dB(A).

1. Introduction

1.1 Background

RAPT Consulting has been engaged to undertake a noise assessment to inform a Development Application (DA) at 29 Grey Street Clarence Town for a proposed restaurant, bar and function centre. Details include:

- Trading 7 days per week 11:00am – 12:00am.

The site and surrounding area are shown in Figure 1-1

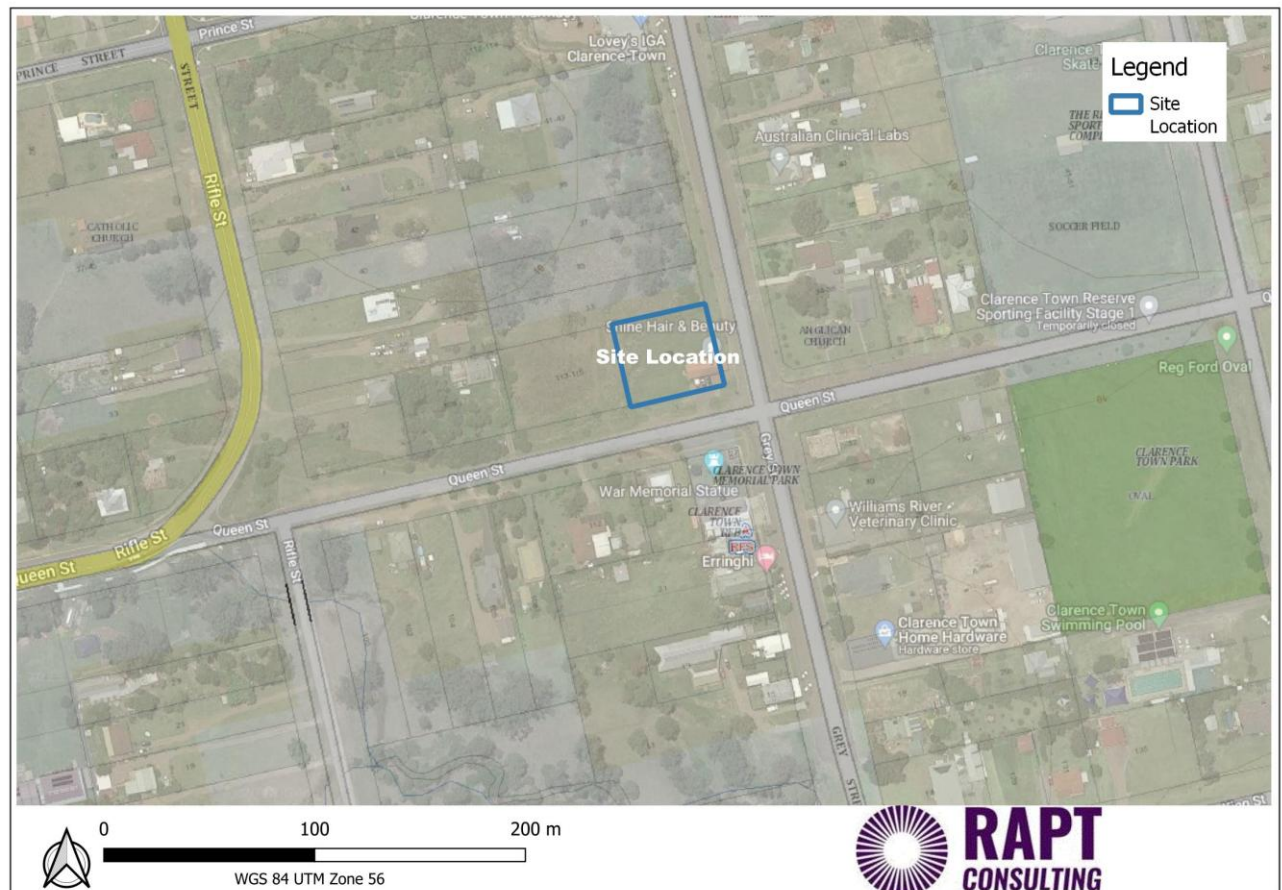


Figure 1-1 Site and Surrounding Area

1.2 Assessment Objectives

This acoustic assessment considers the potential impacts of the operation of the proposal. The purpose is to assess potential noise from the proposal and to recommend mitigation measures where required.

The outcomes of this assessment include recommendations where necessary for potential noise mitigation and management measures designed to achieve an acceptable noise amenity for residential (dwelling) occupants and other sensitive receivers surrounding the study area.

1.3 Scope

The acoustic assessment scope of work included:

- Initial desk top review to identify noise sensitive receptors from aerial photography
- Undertake noise measurements to determine ambient and background noise levels
- Establish project noise goals for the operation of the proposal
- Identify the likely principal noise sources during operation and their associated noise levels
- assessment of potential noise impacts associated with operation aspects of the project
- provide recommendations for feasible and reasonable noise mitigation and management measures, where noise objectives may be exceeded.

1.4 Relevant Guidelines

The relevant policies and guidelines for noise and vibration assessments in NSW that have been considered during the preparation of this assessment include:

- Noise Policy for Industry (NPfI), Environment Protection Authority (EPA), 2017
- Noise Guide for Local Government (NGfLG) Environment Protection Authority (EPA), 2013

1.5 Limitations

The purpose of this report is to provide an independent noise assessment for the proposal.

It is not the intention of the assessment to cover every element of the acoustic environment, but rather to conduct the assessment with consideration to the prescribed work scope.

The findings of the noise assessment represent the findings apparent at the date and time of the assessment undertaken. It is the nature of environmental assessments that all variations in environmental conditions cannot be assessed and all uncertainty concerning the conditions of the ambient environment cannot be eliminated. Professional judgement must be exercised in the investigation and interpretation of observations.

In conducting this assessment and preparing the report, current guidelines for noise were referred to. This work has been conducted in good faith with RAPT Consulting's understanding of the client's brief and the generally accepted consulting practice.

No other warranty, expressed or implied, is made as to the information and professional advice included in this report. It is not intended for other parties or other uses.

2. Existing Environment

2.1 Receptors

The area surrounding the proposal is zoned E1 Local Centre. A map showing the land use zonings in the vicinity of the proposal are shown in Figure 2-1.

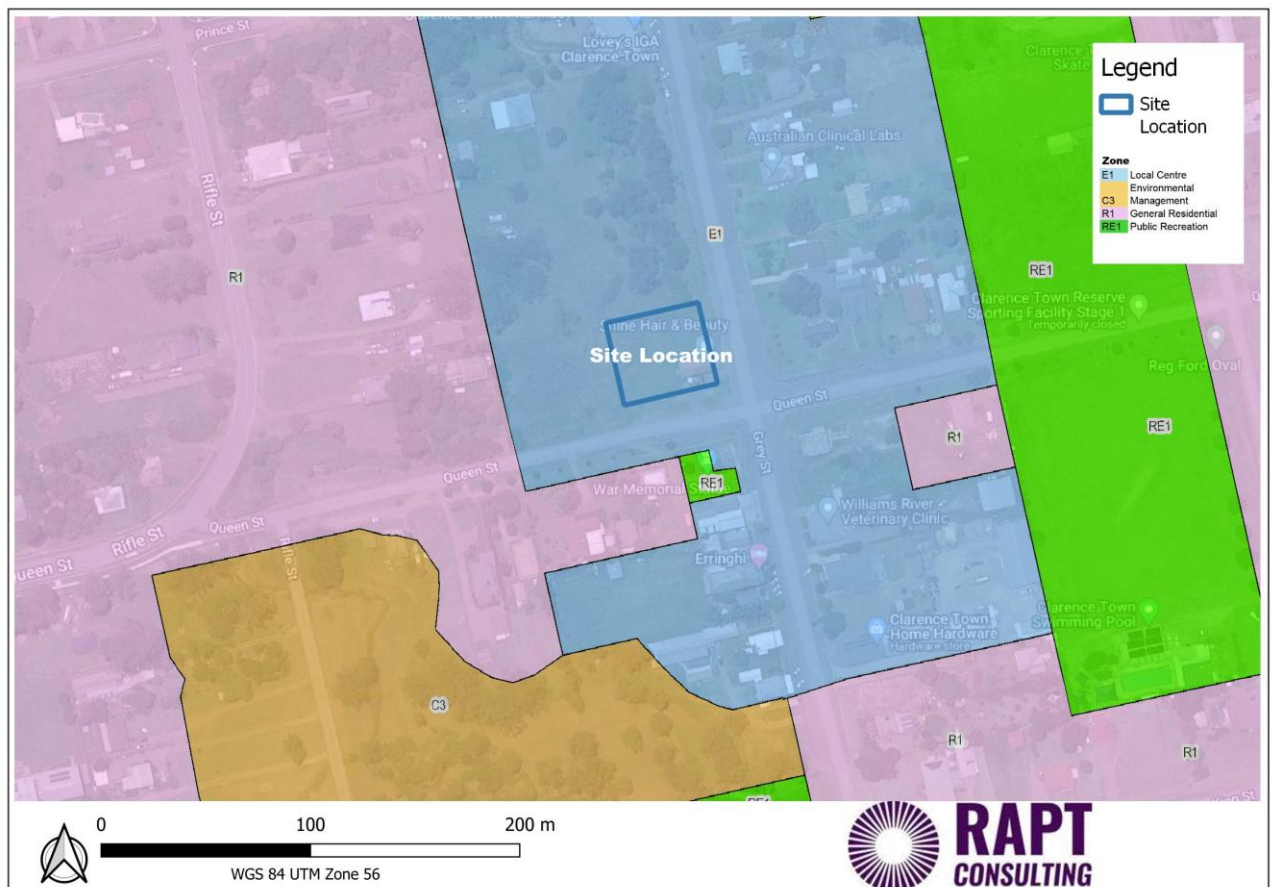


Figure 2-1 Land Use Zonings

Nearest representative receptors to the proposal assessed in this acoustic assessment are identified in Table 2-1 and Figure 2-2. Other receptors are located in these areas however the locations selected are considered representative of the localised noise environment in the vicinity of the locations selected.

Table 2-1 Nearest Receptors to Study Area

Receiver ID	Location	Receptor Type	Easting	Northing
R1	16 Grey Street	Residential	385628	6393605
R2	26 Grey Street	Residential	385602	6393670
R3	118 Queen Street	Residential	385523	6393721
R4	112 Queen Street	Residential	385484	6393704
R5	111 Queen Street	Residential	385443	6393759
R6	41-43 Grey Street	Residential	385464	6393880
R7	34-36 Grey Street	Residential	385585	6393820
R8	127 Queen Street	Residential	385649	6393785

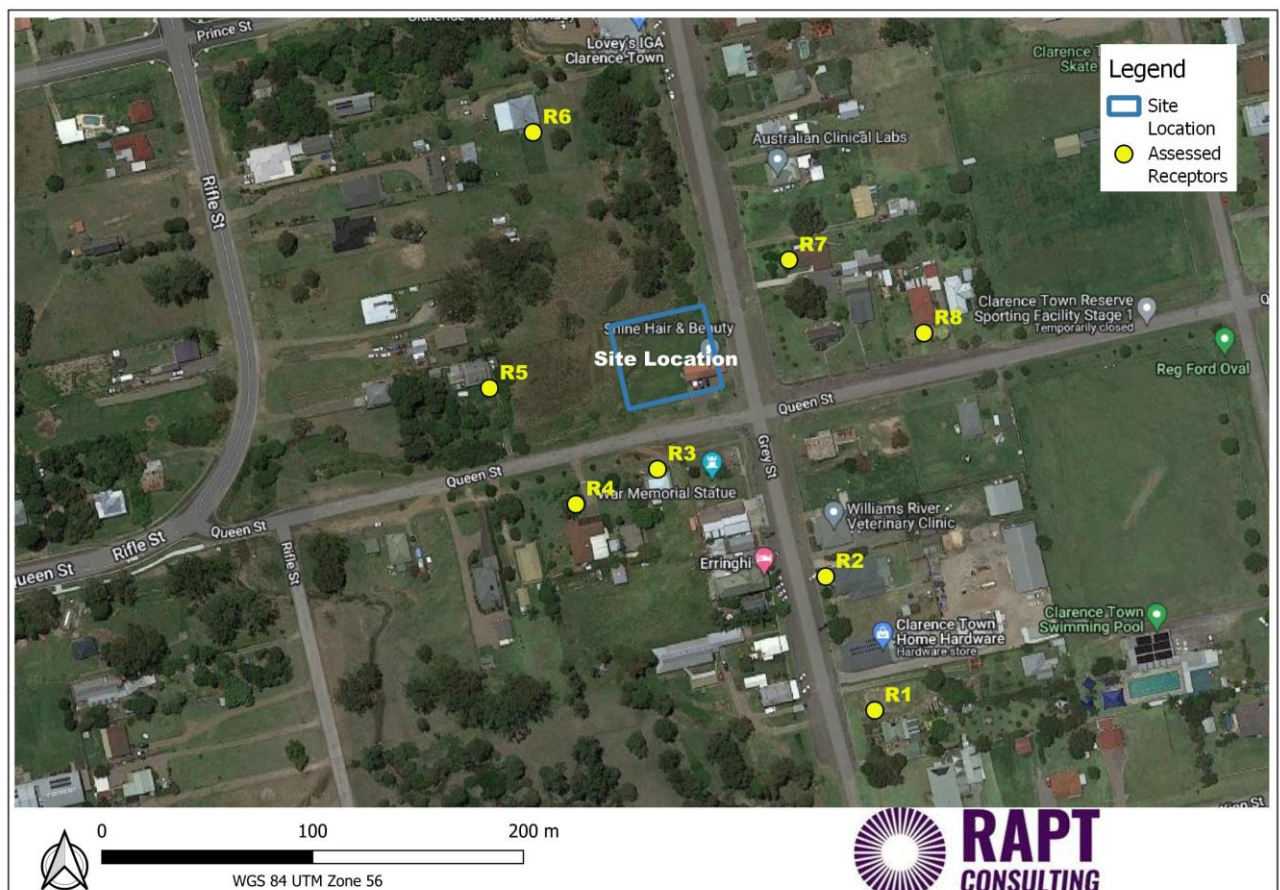


Figure 2-2 Receptors Surrounding the Proposal Site

2.2 Background and Ambient Noise

To establish background and ambient noise levels, noise monitoring was undertaken by RAPT Consulting from 24 October to 30 October 2023. The monitoring was undertaken at 29 Grey Street.

Site observations noted the location was considered indicative of the local ambient noise environment and the sites also presented as secure locations whereby minimising the risk of theft or vandalism to the monitoring equipment. Additionally, they are considered as acceptable locations for determination of the background noise with consideration to the NSW Environment Protection Authority's (EPA's) – Noise Policy for Industry (NPfI). During site visits it was noted that grey street traffic, distant traffic and natural wildlife primarily described the ambient noise environment and is indicative of a sub-urban noise environment.

The monitoring location is shown in Figure 2-3.



Figure 2-3 Noise Monitoring Location

Monitoring was undertaken using a RION NL-42 noise logger with Type 2 Precision. Calibration was checked prior to and at the conclusion of the measurements with no significant drift. These loggers are capable of measuring continuous sound pressure levels and are able to record L_{Amin} , L_{A90} , L_{A10} , L_{Amax} and L_{Aeq} noise descriptors. The instrument was programmed to accumulate environmental noise data continuously over sampling periods of 15 minutes for the entire monitoring period.

The noise surveys were conducted with consideration to the procedures described in Australian Standard AS 1055:2018, "Acoustics – Description and Measurement of Environmental Noise" and the NSW Noise Policy for Industry (NPfI). Calibration was checked before and after each measurement and no significant drift occurred. The acoustic instrumentation used carries current NATA calibration and complies with AS/NZS IEC 61672.1-2019-Electroacoustics – Sound level meters – Specifications.

The L_{A90} descriptor is used to measure the background noise level. This descriptor represents the noise level that is exceeded for 90 percent of the time over a relevant period of measurement. In line with the procedures described in the EPA's NPfI, the assessment background level (ABL) is established by determining the lowest tenth-percentile level of the L_{A90} noise data acquired over each period of interest. The background noise level or rating background level (RBL) representing the day, evening and night-time assessment periods is based on the median of individual ABL's determined over the entire monitoring duration. The RBL is representative of the average minimum background sound level, or simply the background level.

The L_{Aeq} is the equivalent continuous noise level which would have the same total acoustic energy over the measurement period as the varying noise actually measured, so it is in effect an energy average.

Weather information for the unattended noise logging was obtained from the Bureau of Meteorology Maitland AWS for the monitoring period and any data adversely affected by rain, wind (more than 5 m/s as per NPfI) or extraneous noise were discarded.

The RBL and ambient LAeq levels are provided in Table 2-2 below.

Table 2-2 Background and Ambient Noise Monitoring Results

Rating background level, L _{A90} , dB(A)				Ambient noise levels, L _{Aeq} dB(A)			
Day ¹	Evening ¹	Night ¹	Night ²	Day ¹	Evening ¹	Night ¹	Night ²
41	32	30	30	51	51	48	49

Note 1 Day: 7:00 to 18:00 Monday to Saturday and 8:00 to 18:00 Sundays & Public Holidays Evening: 18:00 to 22:00 Monday to Sunday & Public Holidays Night: 22:00 to 7:00 Monday to Saturday and 22:00 to 8:00 Sundays & Public Holidays

Note 2 Night Time 10:00pm to 12:00am in line with proposed operating hours

3. Noise Objectives

3.1 Noise Policy for Industry (NPfI) Operational Noise Criteria

The New South Wales Noise Policy for Industry (NPfI) provides guidance on the assessment of operational noise impacts. The guidelines include both intrusive and amenity criteria that are designed to protect receivers from noise significantly louder than the background level and to limit the total noise level from all sources near a receiver.

Intrusive noise levels set by the NPfI control the relative audibility of operational noise compared to the background level. Amenity criteria limit the total level of extraneous noise. Both sets of criteria are calculated and the lower of the two in each time period normally apply. Intrusive criteria are simply 5 decibels above the measured (or adopted) background level with a minimum of 40 dB(A) for daytime and 35 dB(A) for evening and night-time. In determining project noise trigger levels for a particular development, it is generally recommended that the project intrusiveness noise level for evening be set at no greater than the project intrusiveness noise level for daytime. The project intrusiveness noise level for night-time should be no greater than the project intrusiveness noise level for day or evening.

Amenity noise levels are determined based on the overall acoustic characteristics of the receiver area and the existing level of noise excluding other noises such as traffic and insects. Residential receiver areas are characterised into 'urban', 'suburban', 'rural' or other categories based on land uses, the existing level of noise from industry, commerce, and road traffic. Project amenity noise levels (ANL) are the ANL (Table 2.1 of the NPfI) minus 5 dB(A) and plus 3 dB(A) to convert from a period level to a 15-minute level. The project noise trigger level is the lower value between the intrusive and the amenity noise levels.

The NPfI noise criteria are planning levels and are not mandatory limits required by legislation however the noise criteria assist the regulatory authorities to establish licensing conditions. Where noise criteria are predicted to be exceeded, feasible and reasonable noise mitigation strategies should be considered. In circumstances where noise criteria cannot be achieved negotiation is required to evaluate the economic, social and environmental costs and benefits of the development against the noise impacts. The regulatory authority then sets statutory compliance levels that reflect the achievable and agreed noise limits from the development.

The NPfI is generally intended for large and complex industrial sources and recommends considerable monitoring and assessment measures that may not always be applicable to certain situations. Section 1.4 of the NPfI refers to the general types of premises the policy deals with. In this case commercial premises (generally limited to noise from heating, ventilation, air conditioning and refrigeration, and energy generation equipment). Section 1.5 also contains what is excluded from the policy which includes amplified music/patron noise from premises including those licensed by Liquor and Gaming NSW.

Nearest residential receptors are considered Sub-Urban. Project noise trigger levels noise from heating, ventilation, air conditioning and refrigeration, and energy generation equipment are provided for residences and commercial premises in Table 3-1.

Table 3-1 NPfI Project Noise Trigger Levels

	Day 7am to 6pm	Evening 6pm to 10pm	Night 10pm to 12am
Rating Background Level $L_{A90}(\text{Period})$	41	32	30
Project Intrusive Noise Level, $L_{Aeq}(15\text{min})$	46	37	35
Project Amenity Noise Level (Sub-Urban), $L_{Aeq}(\text{Period})$	50	40	35
Project Amenity Noise Level $L_{Aeq}(15\text{min})$	53	43	38
Project Trigger Level Residential $L_{Aeq}(15\text{min})$	46	37	35
Commercial Premises (When in use) $L_{Aeq}(15\text{min})$	63	63	63

Maximum Noise Level Assessment

The NPfI requires the potential for sleep disturbance to be assessed by considering maximum noise levels events during the night-time period.

Where the subject development/premises night-time noise levels at a residential location exceed the following screening levels a detailed maximum noise level event assessment should be undertaken:

- $L_{Aeq,15\text{min}}$ 40 dB(A) or the prevailing RBL plus 5 dB, whichever is the greater, and/or
- L_{AFmax} 52 dB(A) or the prevailing RBL plus 15 dB, whichever is the greater.

The detailed assessment should cover the maximum noise level, the extent to which the maximum noise level exceeds the RBL, and the number of times this happens during the night-time period.

Based on the background noise levels during the night, the sleep disturbance criteria for the nearest noise sensitive residential receivers are provided in Table 3-2.

Table 3-2 Sleep Disturbance Assessment Criteria

Receiver type	Assessment Level $L_{Aeq,15min}$, dB(A)	Assessment Level L_{AFmax} , dB(A)
Residential	40	52

The NSW Road Noise Policy (RNP) (DECCW 2011) provides additional information on sleep disturbance and concludes that:

- *Maximum internal noise levels below 50–55 dB(A) are unlikely to awaken people from sleep*
- *One or two noise events per night, with maximum internal noise levels of 65–70 dB(A), are not likely to affect health and wellbeing significantly.*

The above references identify that internal noise levels of 50 to 55 dB(A), are unlikely to cause awakenings. On the assumption that there is a 10 dB(A) outside-to-inside noise loss through an open window (see Section 2.6 of the NPfI, p15), this indicates that external noise levels of L_{Amax} 60 to 65 dB(A) are unlikely to cause awakening reactions. Given the existing ambient noise environment, a conservative L_{Amax} of 60 dB(A) has been used as the assessment noise level to determine the potential for awakening reactions.

3.2 Liquor and Gaming NSW

Noise from licensed premises are regulated by Liquor and Gaming NSW and have the following noise guidelines which are provided in Figure 3-1.

Current noise condition

The L_{A10} * noise level emitted from the licensed premises shall not exceed the background noise level in any Octave Band Centre Frequency (31.5Hz–8kHz inclusive) by more than 5dB between 7:00 am and 12:00 midnight at the boundary of any affected residence.

The L_{A10} * noise level emitted from the licensed premises shall not exceed the background noise level in any Octave Band Centre Frequency (31.5Hz–8kHz inclusive) between 12:00 midnight and 7:00 am at the boundary of any affected residence.

Notwithstanding compliance with the above, the noise from the licensed premises shall not be audible within any habitable room in any residential premises between the hours of 12:00 midnight and 7:00 am.

* For the purpose of this condition, the L_{A10} can be taken as the average maximum deflection of the noise emission from the licensed premises.

This is a minimum standard. In some instances the Director may specify a time earlier than midnight in respect of the above condition.

Interior noise levels which still exceed safe hearing levels are in no way supported or condoned by the Director.

Figure 3-1 NSW Liquor and Gaming Noise Requirements

Target noise levels are provided for residences in Table 3-3.

Table 3-3 NSW Liquor and Gaming Noise Goals dB(A)

	Day 7am to 6pm	Evening 6pm to 10pm	Night 10pm to 12am
Rating Background Level $L_{A90}(\text{Period})$	41	32	30
NSW Liquor and Gaming Noise Level (Background + 5)	46	37	35

4. Assessment of Potential Impacts

4.1 Operational Noise

Assessment approach

Acoustic modelling was undertaken using Bruel and Kjaer's "Predictor" to predict the effects of site noise. Predictor is a computer program for the calculation, assessment and prognosis of noise propagation. Predictor calculates environmental noise propagation according to ISO 9613-2, "Acoustics – Attenuation of sound during propagation outdoors". The method predicts the sound pressure level under meteorological conditions favourable to propagation from sources of known sound emission. These conditions are for downwind propagation or equivalently under a well-developed moderate ground based temperature inversion. Terrain topography, ground absorption, atmospheric absorption and relevant shielding objects are taken into account in the calculations.

Other Key assumptions in the model include:

- topographical information was obtained from NSW Government Spatial Services
- all areas were modelled considering a conservative ground factor of 0.8
- all receivers were modelled at 1.5 metres above the ground surface.

Site layout and building structures were based on information provided at the time of the assessment.

Primary onsite environmental noise sources will be in the form of patrons conversing and background music which could be in the form of a singer and self-powered speaker. It is understood live amplified music at the premises such as band performances will not be taking place.

4.1.1 Main Building Noise

It is understood the main building have a kitchen and with cool room, seating inside with an indoor bar and restaurant. There is also proposed to be an outdoor terrace and beer garden.

We have assumed one kitchen exhaust fan will be required, typically vertical fans with the outlet located 1 metre above roof level over the kitchen. Refrigeration and air conditioning plant will also be required. A sound power level of 80 SWL dB(A) for these sources has conservatively been assumed with data sourced from RAPT Consulting's database.

Background Music and Occupants

Different noise sources can be perceived in dining and social areas. First, sound ambience is generally dependent of the service proposal for each particular place. Managers and owners will select background music or televisions to fit with target customers. Typically, background music or televisions in restaurants and social areas is set at a level for patrons to be able to converse comfortably. Previous experience suggests generally, cumulative noise levels in restaurants and social areas can range from 67 – 83 dB(A) and mainly depends on occupant density and intended use. RAPT Consulting has undertaken numerous internal noise measurements of live music, club, small bar and restaurant situations.

It is understood the main building will have dining area seating inside with an indoor bar and function area. There is also an outdoor area including a beer garden. 1 - 2 person live and music soloists with a self powered speaker may be the background music in the function area while background music allowing for normal conversation would be in the indoor restaurant and outdoor area.

Information regarding typical and peak operating characteristics has been obtained from the Amber Traffic Impact Assessment, *Bar, Dining & Function Centre 29, 33, and 35 Grey Street, Clarence Town August 2024 Reference: 739 rep 240816* and is reproduced in Figure 4-1.

Table 3: Typical Operating Characteristics

Time Period	Time	Number of Staff			Number of Patrons
		Kitchen	Bar	Total	
Weekday Business Hours	11am to 5pm	1	1	2	5-15
Weekday Evenings (Monday – Thursday)	5pm to late	1	1	2	10-30
Friday Evenings (After Work Drinks)	5pm to 7pm	2	2	4	20-40
Friday Evenings (Meal and Night Out)	7pm to late	3	3	6	20-60
Saturday Day (Lunch and Afternoon Drinks)	11am to 6pm	2	2	4	10-30
Saturday Evening (Meal and Night Out)	6pm to late	3	3	6	15-60
Sunday Day	11am to 5pm	2	1	3	10-40
Sunday Evenings	5pm to late	1	1	2	5-25

Table 4: Peak Operating Characteristics – Friday and Saturday Evenings with Functions

Time Period	Time	Number of Staff			Number of Patrons
		Kitchen	Bar	Total	
Friday Evenings (After Work Drinks)	5pm to 7pm	2	2	4	20-40
Friday Evenings (Meal and Night Out)	7pm to late	3	3	6	20-60
Friday Evening Function (up to 100 patrons)	6pm to late	5	4	9	80-120
Friday Evening Maximum	5pm to late	5	4	9	180
Saturday Evening (Meal and Night Out)	6pm to late	3	3	6	15-60
Saturday Evening Function (up to 130 patrons)	5pm to late	5	4	9	80-140
Saturday Evening Maximum	5pm to late	5	4	9	200

Figure 4-1 Typical and Peak Operating Characteristics

To simulate a reasonable worst case scenario, Saturday evening maximum patronage for peak operating circumstances has been simulated. 140 persons in the function area, 30 persons in the restaurant and 30 persons in the outdoor beer garden area as well as 5 staff members in the kitchen area and 4 staff members in the bar area. It has been assumed that ½ of the persons would be speaking at any one time simultaneously as not all patrons and staff would be speaking at the same time. The sound level for background music is on the higher end which allows for conversation at raised vocal effort at 600mm separation.

The sound level for function area background music is on the higher end which allows for conversation at raised vocal effort at 600mm separation.

The sound level for background music in the restaurant and outdoor area is on the higher end which still allows for conversation at normal vocal effort at 600mm separation

Table 4-1 Typical Octave Band LA10 Sound Levels dB(A)

	L_{A10} dB(A) Octave Band Centre Frequency, Hz									
	31.5	63	125	250	500	1K	2K	4K	8K	dB(A)
Function Area Background setting Music	31	49	62	70	78	81	79	71	60	85
Male Raised Voice (@ 1metre) x 70*	-	-	58	72	81	80	77	72	63	85
Restaurant and Outdoor area Background setting Music	23	39	52	60	68	71	69	61	50	74

L _{A10} dB(A) Octave Band Centre Frequency, Hz										
Male Normal Voice (@ 1metre) x 15 per restaurant and outdoor area*	-	-	43	59	67	64	61	57	50	70
Male Normal Voice (@ 1metre) x 3 Staff per kitchen area*	-	-	36	52	60	57	54	50	43	63
Male Normal Voice (@ 1metre) x 2 Staff per bar area*	-	-	34	50	58	55	52	48	41	61

Note 2 Association of Australasian Acoustical Consultants Licensed Premises and Patron Noise Assessment Technical Guideline Version 3

Building Materials

The building walls have been assumed to be of precast fixed concrete with windows. Sound insulation properties of building elements are provided in Table 4-2.

Table 4-2 Standard Building Materials

	31.5	63	125	250	500	1K	2K	4K	8K
Glass 8mm	10	18	18	25	31	32	28	36	39
150mm precast concrete	20	25	30	30	32	37	45	45	45

To simulate a reasonable worst-case scenario, received noise produced by anticipated activities outlined above have been simulated. Table 4-3 and Figure 4-1 for mechanical plant

and Table 4-4 and Figure 4-2 for patron and music noise shows the results of the assessment. Any predicted exceedances are shown in **RED**.

Table 4-3 Mechanical Plant Operational Modelled Results Leq(15min) dB(A)

Receiver ID	Mechanical Plant Result	Project Noise Trigger Level Day/Evening/Night	Comply Yes/ No
R1	20	46 / 37 / 35	Yes
R2	24	46 / 37 / 35	Yes
R3	33	46 / 37 / 35	Yes
R4	29	46 / 37 / 35	Yes
R5	29	46 / 37 / 35	Yes
R6	26	46 / 37 / 35	Yes
R7	30	46 / 37 / 35	Yes
R8	25	46 / 37 / 35	Yes



Figure 4-2 Mechanical Plant Noise Modelling Results $Leq(15min)$ dB(A)

Table 4-4 Patron and Music Noise Modelling Results L10(15min) dB(A)

Receiver ID	Function Area	Outdoor Area	Restaurant	Cumulative Result	Project Noise Trigger Level Day/Evening/Night	Comply Yes/ No
R1	3	18	0	19	46 / 37 / 35	Yes
R2	7	24	0	24	46 / 37 / 35	Yes
R3	19	25	0	26	46 / 37 / 35	Yes
R4	13	17	0	19	46 / 37 / 35	Yes
R5	11	16	0	17	46 / 37 / 35	Yes
R6	0	25	0	25	46 / 37 / 35	Yes
R7	13	37	0	37	46 / 37 / 35	Yes / Yes / No
R8	10	30	0	30	46 / 37 / 35	Yes

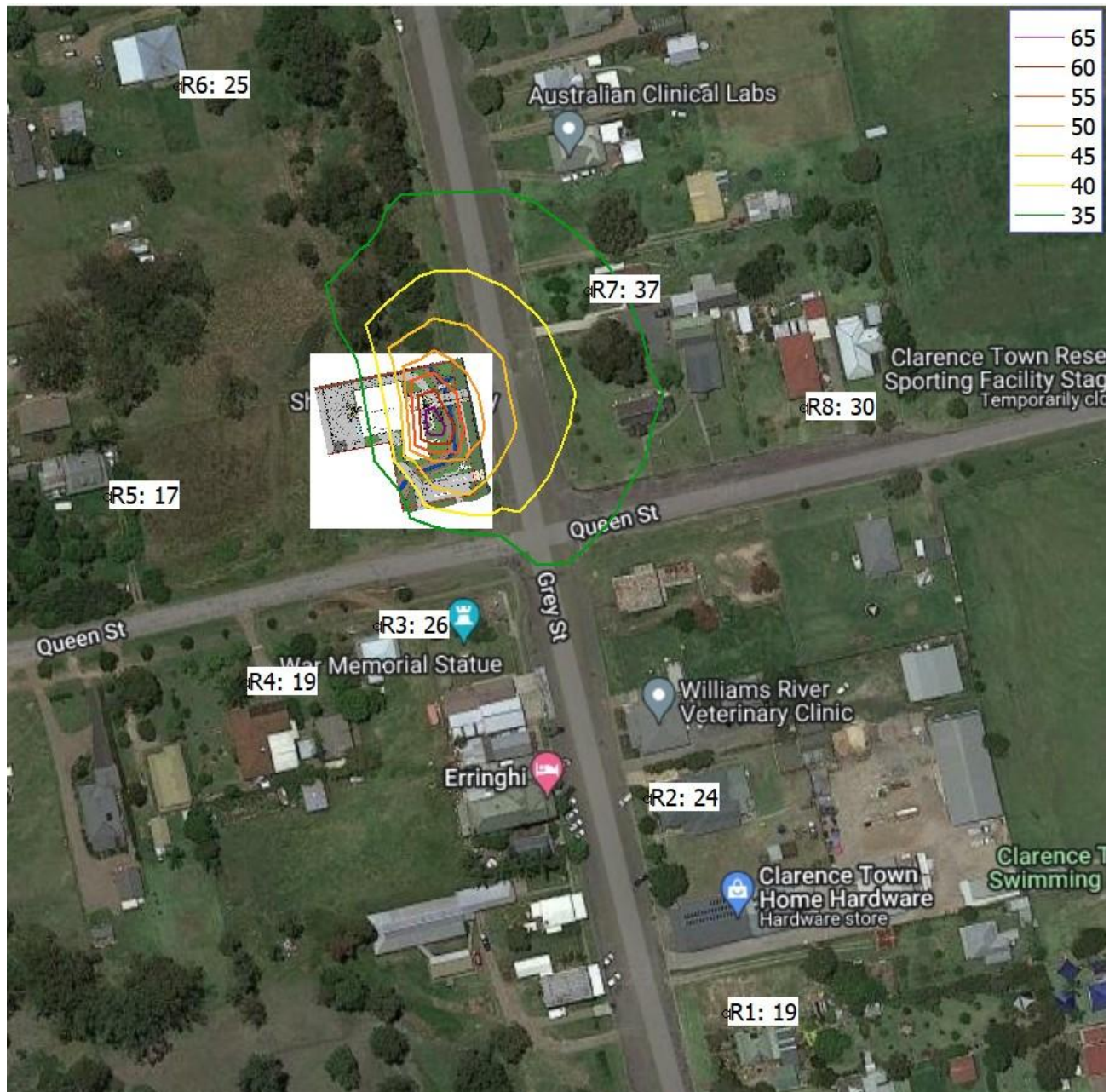


Figure 4-3 Patron and Music Modelled Noise Results L10(15min) dB(A)

These are considered to be reasonable worst case scenarios with maximum number of patrons. In most cases noise levels can be expected to be significantly lower than what was presented.

The results of the mechanical plant assessment indicate that project noise trigger levels can be complied with during day, evening, and night time situations.

The result of the patron and music noise assessment indicated noise goals can also be achieved during day, evening and night time situations with the exception of R7 during night time which has a predicted exceedance of 2 dB(A) for night time (10pm – 12pm). With this in mind it is recommended that any outdoor music be lowered by at least 3 dB(A) after 10pm.

The modelled results are also expected to adhere to sleep disturbance assessment levels. The NSW Environmental Noise Management Manual specifies that standard window glazing of a building will typically attenuate the external noise levels by at least 20dB(A) with the windows closed and 10 dB(A) with the windows open (allowing for natural ventilation). This means that an external noise level of 40 - 45dB(A) would comply with AS2107:2016 internal noise recommendations for sleeping areas.

While compliance with operational project noise trigger levels can be achieved, it is recommended the site as part of its plan of management have measures in place to particularly to deal with any unexpected excessive noise from patrons. This could include but not be limited to:

- Ensure all employees are trained to assist patrons to minimise noise, particularly patrons leaving the site
- Place signage in appropriate areas requesting patrons to respect the neighbours in terms of noise and to leave quietly
- Request patrons leave the site if they are being excessively noisy
- Management and staff shall immediately address complaints relating to noise and where possible act immediately to satisfy the complaint. Any complaint made should be recorded in the Complaints Register and dealt with. If required, the site shall meet with neighbours to address ongoing matters as they arise and to ensure contingency plans are in place including compliance noise monitoring
- Where possible the bass noise component of the entertainment (125Hz and below) should be kept at low levels. This generally means that the bass guitar and drum noise should be kept down. It is, typically, the low frequency noise which is the cause of most complaints in relation to noise from entertainment venues.
- Lower the music level to below 70 dB(A) past 10:00pm
- Strict adherence to the approved hours of operation.

5. Conclusion

This noise assessment has been undertaken to inform a Development Application (DA) at 29 Grey Street Clarence Town for a proposed restaurant and bar.

Based on the results and the information provided regarding the development, compliance with all noise goals can be expected to be achievable for the development on neighbouring residences and commercial operators. Recommendations have been made for management to have measures in place to particularly to deal with any unexpected excessive noise from patrons and to lower music in the outdoor areas past 10pm. Therefore, from an acoustics perspective the findings suggest the proposal is acceptable.