



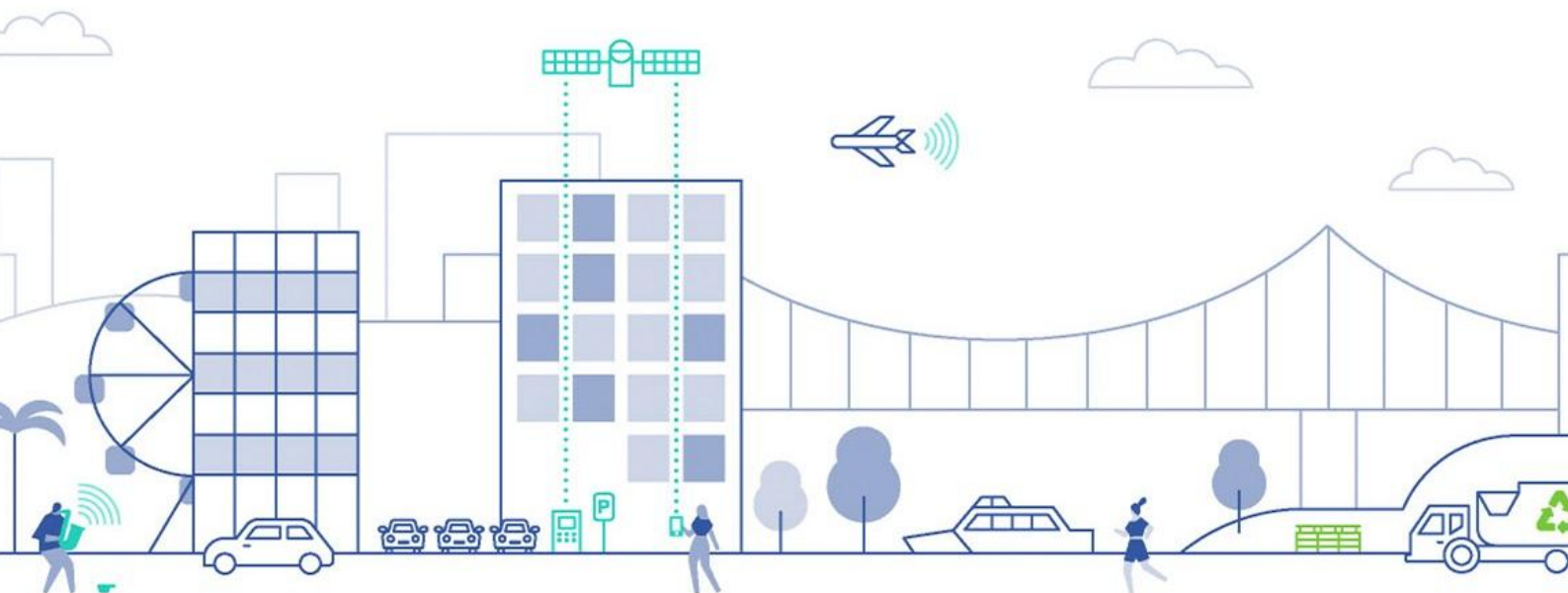
# Environmental Noise Assessment

Proposed Food & Drink Extension

At 186 Given Terrace, Paddington

On Behalf of Pad-Mac Pty Ltd

24BRA0149 R01\_2



## About TTM

For 40 years, we've been at the centre of the Australian development and infrastructure industry. Our unique combination of acoustics, data, traffic and waste services is fundamental to the success of any architectural or development project.

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T: (07) 3327 9500

F: (07) 3327 9501

E: [ttmbris@ttmgroup.com.au](mailto:ttmbris@ttmgroup.com.au)



## Revision Record

No.	Author	Reviewed/Approved	Description	Date
A	S Yorke	A Ashworth	Internal draft	24/09/2024
0	S Yorke	A Ashworth	Client issue	24/09/2024
1	S Yorke		Council RFI (29.11.2024)	06/12/2024
2	S Yorke		Extension of hours	22/06/2026

## Executive Summary

TTM was engaged by Pad-Mac Pty Ltd to undertake an environmental noise assessment of a proposed food & drink extension located at 186 Given Terrace, Paddington. The assessment was based on the Brisbane City Council *City Plan 2014* planning scheme.

Unattended noise monitoring was conducted to determine the ambient noise levels in the vicinity of the site location.

Noise impacts from relevant onsite activities were assessed using 3D noise modelling for proposed operating hours between 7am – 3am (Monday – Saturday) and 7am - 2am (Sundays). Compliance with relevant noise criteria is predicted with the inclusion of recommended acoustic barriers, façade minimum acoustic ratings and time-based façade configurations (Section 7). Amplified music can operate between 7am – 3am as detailed in Section 7.

Compliance with the Brisbane City Council *City Plan 2014* planning scheme is predicted to be achieved based on the recommendations outlined in Section 7 of this report.

### Report Revision Confirmation

As requested by BCC, we confirm that this version of the report has had the following updates:

- Proposed hours of operation for all uses changed from 7am - 12am to 7am - 3am (Monday – Saturday) and 7am - 2am (Sundays).
- Tables 7 and 8 updated based on the updated hours of operation
- No changes to other parameters or assumptions.

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# 1 Introduction

## 1.1 Background

TTM was engaged by Pad-Mac Pty Ltd to undertake an environmental noise assessment of a proposed food & drink extension located at 186 Given Terrace, Paddington. This report will form part of a development application for consideration by Brisbane City Council.

## 1.2 References

This report is based on the following:

- Brisbane City Council, *Information Request*, dated 29 November, 2024
- Brisbane City Council (BCC) *City Plan 2014*
- *Noise impact assessment planning scheme policy* - Schedule 6, City Plan 2014
- Development plans shown in Appendix A
- Site inspection, noise measurements, analysis and calculations conducted by TTM

## 1.3 Scope

The assessment includes the following:

- Description of the development site and proposal.
- Measurement of existing ambient noise levels.
- Statement of assessment criteria relating to environmental noise emissions.
- Assessment of noise generated by the development onto nearby sensitive receivers.
- Analysis of measured and predicted noise levels.
- Details of noise control recommendations to be incorporated to achieve predicted compliance.

## 2 Site Description

### 2.1 Site Location

The site is described by the following:

- 186 Given Terrace, Paddington

The site locality is shown in Figure 1.

Figure 1: Site Locality



### 2.2 Current Site Conditions

The site is bound by Given Terrace and Guthrie Street to the north, Campbell Street to the south, and residential properties to the west. The current acoustic environment at the site and surrounding area is primarily comprised of road traffic noise and existing food and drink use on the site (The Paddington Tavern).

## 3 The Proposed Development

### 3.1 Development Description

The proposal is to construct a food & drink extension to the existing Paddington Tavern consisting of:

- Mezzanine Level – internal function rooms, internal pre-function area and bar lounge (with operable façade)

The proposed Mezzanine Level hours of operation are:

- Function rooms and pre-function area: between 7am – 3am (Monday – Saturday) and 7am - 2am (Sundays)
- Bar lounge: between 7am – 3am (Monday – Saturday) and 7am - 2am (Sundays)

The proposed façade configurations are:

- Function rooms: closed façade during function operation
- Pre-function area: south façade is fixed closed
- Bar lounge operable perimeter façade:
  - Open 7am – 6pm
  - Open 6pm - 10pm (up to 75 patrons), otherwise closed
  - Closed 10pm - 3am

The proposed Mezzanine Level amplified sound is:

- Function rooms: amplified sound (music and/or voice) (may be louder than background level)
- Pre-function area: background music only
- Bar lounge: background music only, speakers only operate when bar lounge façade is closed.

A plan of the development is presented in Figure 2. Further samples of the development plans are shown in Appendix A.



## 4 Measurements

### 4.1 Equipment

The following equipment was used to measure existing noise levels:

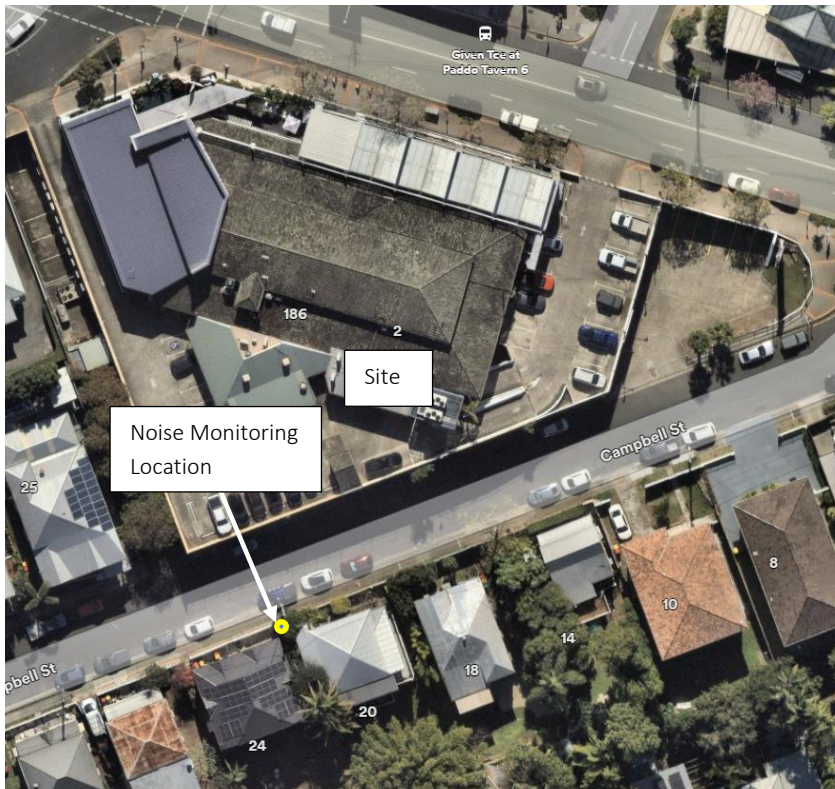
- Norsonic 140 Environmental noise logger (SN# 1406505)
- RION Sound Calibrator type NC73 (SN# TTMNC73-01)

All equipment was calibrated by a National Association of Testing Authorities (NATA) accredited laboratory. The equipment was field calibrated before and after the measurement session. No significant drift from the reference signal was recorded.

### 4.2 Unattended Noise Monitoring

Unattended noise monitoring was conducted to establish the existing ambient noise levels between Monday 19<sup>th</sup> August and Monday 26<sup>th</sup> August, 2024. The noise monitoring location is shown in Figure 3. The monitor was in a position considered representative of the current ambient noise levels experienced at the nearest noise sensitive receivers with consideration to access and security requirements.

Figure 3: Noise Monitoring Location



The microphone was in a free field location and 1.5m above ground level. The noise monitor was set to measure statistical noise levels in 'A'-weighting, 'Fast' response, over 15 minute intervals. Ambient noise levels were measured in accordance with Australian Standard *AS1055:2018 Acoustics – Description and Measurement of Environmental Noise* (AS1055).

Weather during the monitoring was generally fine (source: Bureau of Meteorology).

### 4.3 Noise Source Measurements

Noise levels associated with typical on-site activities were taken from similar investigations conducted by TTM. All measurements were conducted generally in accordance with AS1055.

### 4.4 Results of Measurements

#### 4.4.1 Ambient Noise Levels

Table 1 presents the measured ambient noise levels. The Rating Background Level (RBL) was determined in accordance with the *BCC Noise Impact Assessment Planning Scheme Policy* (NIAPSP). Graphical presentation of the measured levels is shown in Appendix B. The measurement results were used to determine the assessment criteria for the development.

Table 1: Measured Ambient Noise Levels

Time Period	Measured Noise Levels, dB(A) (Free-field)	
	RBL L <sub>90</sub>	L <sub>eq</sub>
Daytime (7am – 6pm)	49	58
Evening (6pm – 10pm)	48	55
Night time (10pm – 7am)	46	52

## 5 Noise Criteria

The Brisbane City Council *City Plan 2014* details site specific planning scheme zones, overlays and codes relevant to a site in the BCC local government area. Table 2 summarises the planning scheme requirements for the site which are relevant to the acoustic assessment.

Table 2: City Plan 2014 - Site Specific Acoustic Requirements

Location	Zone	Code
Site	District centre zone	Centre or mixed use code
Nearest sensitive receiver	Character residential zone	N/A

### 5.1 Centre or Mixed Use Code

The proposed uses are applicable for assessment under the Centre or mixed use code (City Plan 2014). Table 3 summarises the Performance Outcome PO1 of the code.

Table 3: Centre or Mixed Use Code Performance Outcome P01

Performance Outcomes	Acceptable Outcomes
<p><b>PO1</b></p> <p>Development:</p> <p>(a) has hours of operation which are controlled so that the use does not detrimentally impact on the amenity of adjoining residents;</p> <p>(b) where not located in a Special entertainment precinct identified in a neighbourhood plan, does not result in noise emissions that exceed the noise (planning) criteria in Table 9.3.3.F low frequency noise criteria in Table 9.3.3.3.G and night-time noise criteria in Table 9.3.3.3.H in a sensitive zone or a nearby sensitive use.</p> <p>Note—A noise impact assessment report prepared in accordance with the Noise impact assessment planning scheme policy can assist in demonstrating achievement of this performance outcome.</p>	<p><b>AO1.1</b></p> <p>Development:</p> <p>(a) for accommodation activities, dwelling unit or emergency services has unlimited hours of operation;</p> <p>(b) for a club, if licensed, function facility, hotel or nightclub entertainment facility does not generate noise which is clearly audible and detectable, or impacts on the amenity of a resident, in a dwelling or other sensitive use;</p> <p>Note—Development for a club, if licensed, function facility, hotel or nightclub entertainment facility is not expected to achieve this outcome.</p> <p>(c) for any other use:</p> <ol style="list-style-type: none"> <li>i. Where in the Principal centre zone or Major centre zone has unlimited hours of operation;</li> <li>ii. Where in the District centre zone, Neighbourhood centre zone or Mixed use zone: <ol style="list-style-type: none"> <li>a. Has hours of operation, including deliveries, which are limited to 6am to 10pm; or</li> <li>b. Does not generate noise which is clearly audible and disturbing in a dwelling or other sensitive use;</li> </ol> </li> <li>iii. Where in any other zone: <ol style="list-style-type: none"> <li>a. Has hours of operation, including for deliveries, which are limited to 6am to 8pm; or</li> <li>b. Does not generate noise which is clearly audible and disturbing in a dwelling or other sensitive use.</li> </ol> </li> </ol>

	<p><b>A01.2</b> Development ensures mechanical plant or equipment is acoustically screened from an adjoining sensitive use.</p>
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The site is located in a District centre zone. In accordance with AO1.1(c)ii, the proposed development is allowed hours of operation, including for deliveries, of 6am - 10pm. The current Paddington Tavern operating hours are between 10am – 2am. The Mezzanine Level extension proposed hours of operating are between 7am – 3am. The Mezzanine Level was assessed for operation between the hours of 7am – 3am.

To comply with Acceptable Outcome AO1.2, it is recommended the development apply acoustic screening to exposed mechanical plant with the potential to impact adjacent noise sensitive receivers.

### 5.1.1 Noise (Planning) Criteria

The Centre or mixed use code, Performance Outcome P01, *Table 9.3.3.3.F* outlines noise (planning) criteria for noise emissions from the development. This criteria, described by  $L_{Aeq,adj,T}$ , is reproduced in Table 4 for the applicable hours of operation.

Table 4: Noise (Planning) Criteria (Table 9.3.3.3.F)

Criteria Location	Intrusive noise criteria, dB(A) Day, evening and night $L_{Aeq,adj,T}$ are not greater than the RBL plus the amount in 'Column 1' for the relevant criteria location				Acoustic amenity criteria, dB(A) Day, evening and night $L_{Aeq,adj,T}$ are not greater than the values in this column for the relevant criteria location		
	Column 1	Day 7am-6pm	Evening 6pm-10pm	Night 10pm-7am	Day 7am-6pm	Evening 6pm-10pm	Night 10pm-7am
At Character residential zone boundary	3	52	51	49	50	45	40

### 5.1.2 Low Frequency Noise Criteria

The low frequency noise criteria for amplified sound sources is outlined in *Table 9.3.3.3.G*. This criteria is reproduced in Table 5.

Table 5: Low Frequency Noise Criteria (Table 9.3.3.3.G)

Criteria Location	Day (7am-6pm) $L_{Ceq,11hr}$ is not greater than the following values at the relevant criteria location	Evening (6pm-10pm) $L_{Ceq,4hr}$ is not greater than the following values at the relevant criteria location	Night (10pm-7am) $L_{Ceq,9hr}$ is not greater than the following values at the relevant criteria location
Character residential zone boundary	65dB(C)	65dB(C)	60dB(C)

## 6 Analysis – Onsite Noise

An assessment of relevant noise associated with the proposed Mezzanine Level extension was conducted to determine the potential impacts at the nearest noise sensitive receivers. The relevant noise activities, not addressed by acceptable outcomes (Section 5.1), with the potential to adversely impact the nearest noise sensitive receivers are:

- Mezzanine Level extension:
  - Crowd: function rooms, pre-function area (between 7am – 3am (Monday – Saturday) and 7am - 2am (Sundays))
  - Crowd: bar lounge (between 7am – 3am (Monday – Saturday) and 7am - 2am (Sundays))
  - Façade configuration:
    - Function rooms: closed façade during function operation
    - Bar lounge operable perimeter façade:
      - Open 7am – 6pm
      - Open 6pm - 10pm (up to 75 patrons), otherwise closed
      - Closed 10pm - 3am
  - Amplified sound:
    - Function rooms: amplified sound (music and/or voice)
    - Pre-function area: background music only
    - Bar lounge: background music only (speakers operate only when façade is closed)

Existing noise is primarily patron/music which is located on the north side of the building. This does not impact the nearest noise sensitive receivers for the proposed extension which are primarily to the south of the building. Receiver 2 (Section 6.1) is located to the northeast of the site however the uses are primarily non-residential.

### 6.1 Noise Sensitive Receivers

The nearest receivers are outlined below and shown in Figure 4. If compliance can be achieved at these receivers, then all remaining noise sensitive locations are expected to comply.

- Receiver 1: Character zone to the south of the site
- Receiver 2: Character zone to the northeast of the site (primarily non-residential use)
- Receiver 3: Character zone to the west of the site

Figure 4: Receiver Locations



## 6.2 Noise Source Levels

Table 6 presents the relevant noise sources associated with the proposed extension with the potential to impact the nearest sensitive receivers. The noise source levels are sound power levels (SWL) and include corrections for tonality and impulsiveness as per AS1055. The number of events was estimated for a ‘peak’ one-hour time period providing a ‘worst case scenario’ applied to all time periods. Noise source locations are presented in Figure 5.

Table 6: Noise Sources

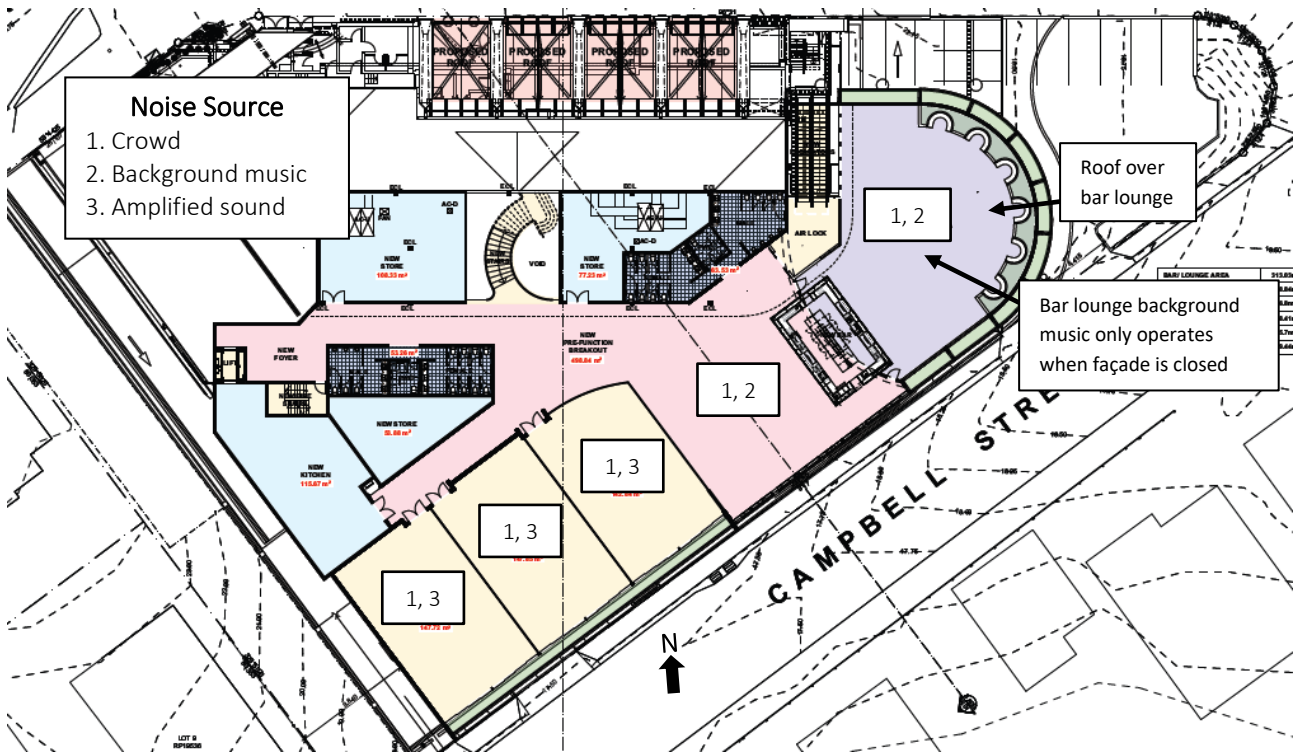
Noise Source	Location (Figure 5)	Measured Duration (s)	SWL <sub>Leg,T</sub> dB(A)	‘Peak’ events / duration per hour
Crowd (140 each) (420 total)	Function room (each)	60	95	Continuous
Crowd (420 people)	Pre-function area	60	100	Continuous
Crowd (150 people)	Bar lounge	60	96	Continuous
Crowd (75 people)	Bar lounge	60	92	Continuous
Amplified sound (music and/or voice)	Function rooms	60	100	Continuous
Background music	Pre-function area	60	89	Continuous
Background music	Bar lounge (when façade closed)	60	89	Continuous (when façade closed)

## 6.3 Calculation Assumptions

The following assumptions have been made for noise calculations:

- Crowd noise was based on data contained in paper 'Prediction of Noise from Small to Medium Sized Crowds' Hayne et al, 2011. The duration was assumed to occur continuously during the assessment period. Total noise level based on cumulative groups of up to 100 patrons each. Maximum capacity patron numbers: function rooms (3) 140 each (420 total), pre-function area 420, bar lounge up to 150.
- The internal noise level was calculated as an internal reverberant noise level based on reverberation time and the internal room volume (calculation Appendix C). External noise emissions from the internal space were included in the noise model based on the calculated internal reverberant noise level and the following building parameters:
  - External façade walls: glazing (min. Rw35), masonry (min. Rw50)
  - Roof / ceiling: min. Rw40
- The reverberation time (RT) was based on the acoustic analysis software (STRUTT) which provides an RT range for restaurants of between 0.3 – 0.8 sec. Additionally the RT spectrum response has an option to increase the lower frequency times for a high % of masonry/concrete. The noise assessment uses the maximum RT value (0.8sec) as well as the increased lower frequency option. Further aspects that will reduce the actual RT time are the presence of patrons in the space. Therefore, based on the above, the RT value used in the assessment is considered to be a conservative value.
- Background level amplified music based on SPL 75dB(C) at 3m equivalent to SWL 89dB(A).
- Attenuation from recommended acoustic barrier (see Section 7).
- Receiver prediction location at the receiver boundary.
- Ground elevation data: Digital elevation model (1m, 2019), Foundation Spatial Data, Qld Government
- Noise source locations are shown in Figure 5.

Figure 5: Noise Source Locations



## 6.4 Predicted Noise Levels at Receivers

A noise assessment of the proposed development was conducted as a 3D noise emission model using SoundPLAN V9.0 based on the noise sources presented in Table 6 and the assumptions outlined in Section 6.3. Single point results and noise contour maps are included in Appendix C.

### 6.4.1 Noise Planning Criteria - $L_{eq}$

Table 7 presents the predicted onsite noise emission levels at the nearest sensitive receiver. The criteria are specified in the table heading.

Table 7: Predicted Noise Planning Impacts

Receiver	Floor Level	Predicted External Noise Level $L_{Aeq,1hr}$ dB(A)			Complies with Criteria?					
		Day 7am-6pm	Evening 6pm-10pm (Bar 75 patrons)	Night 10pm-3am	Intrusive			Amenity		
					Day 7am-6pm 52dB(A)	Evening 6pm-10pm 51dB(A)	Night <sup>A</sup> 10pm-3am 49dB(A)	Day 7am-6pm 50dB(A)	Evening 6pm-10pm 45dB(A)	Night 10pm-7am 40dB(A)
1A	Ground	46	42	26	✓	✓	✓	✓	✓	✓
	First Fl	48	44	26	✓	✓	✓	✓	✓	✓
	Ground	47	43	29	✓	✓	✓	✓	✓	✓

Receiver	Floor Level	Predicted External Noise Level L <sub>Aeq,1hr</sub> dB(A)			Complies with Criteria?					
		Day 7am-6pm	Evening 6pm-10pm (Bar 75 patrons)	Night 10pm-3am	Intrusive			Amenity		
					Day 7am-6pm 52dB(A)	Evening 6pm-10pm 51dB(A)	Night <sup>^</sup> 10pm-3am 49dB(A)	Day 7am-6pm 50dB(A)	Evening 6pm-10pm 45dB(A)	Night 10pm-7am 40dB(A)
1B	First Fl	49	45	29	✓	✓	✓	✓	✓	✓
1C	Ground	46	42	31	✓	✓	✓	✓	✓	✓
	First Fl	49	45	31	✓	✓	✓	✓	✓	✓
1D	Ground	45	42	33	✓	✓	✓	✓	✓	✓
	First Fl	48	44	33	✓	✓	✓	✓	✓	✓
1E	Ground	44	40	33	✓	✓	✓	✓	✓	✓
	First Fl	46	42	34	✓	✓	✓	✓	✓	✓
1F	Ground	40	37	34	✓	✓	✓	✓	✓	✓
	First Fl	41	38	35	✓	✓	✓	✓	✓	✓
1G	Ground	38	36	35	✓	✓	✓	✓	✓	✓
	First Fl	39	37	35	✓	✓	✓	✓	✓	✓
2	Ground	47	43	26	✓	✓	✓	✓	✓	✓
	First Fl	49	45	26	✓	✓	✓	✓	✓	✓
3	Ground	32	31	30	✓	✓	✓	✓	✓	✓
	First Fl	32	31	31	✓	✓	✓	✓	✓	✓

<sup>^</sup>Relevant night time noise criteria based on the proposed operating hours

Noise sources are predicted to comply with the relevant criteria during all time periods with the inclusion of recommended noise attenuation measures (Section 7).

## 6.4.2 Low Frequency Noise Criteria

The proposed Mezzanine Level amplified music is as follows:

- Function rooms: amplified sound (music and/or voice) (103dBC)
- Pre-function area: background music only (75dBC @ 3m)
- Bar lounge: background music only (75dBC @ 3m). Speakers only operate when façade is closed (10pm-3am)

A noise impact assessment (dBC) of amplified sound was based on the following parameters:

- Amplified sound room internal calculations for dB(C) included in Appendix C.
- Same building modelling parameters as for the noise planning assessment as described in Section 6.3.

Based on the above parameters, Table 8 presents the predicted amplified sound noise impact at the nearest receivers.

Table 8: Low Frequency Noise Impact at Receivers (dBC)

Receiver	Floor Level	Predicted External Noise Level $L_{Aeq,1hr}$ dB(C)		Complies with Criteria?		
		Day/ Evening 7am-10pm	Night 10pm-3am	Day 7am-6pm 65dB(C)	Evening 6pm-10pm 65dB(C)	Night 10pm-7am 60dB(C)
1A	Ground	23	24	✓	✓	✓
	First Fl	24	25	✓	✓	✓
1B	Ground	26	26	✓	✓	✓
	First Fl	26	27	✓	✓	✓
1C	Ground	28	29	✓	✓	✓
	First Fl	28	29	✓	✓	✓
1D	Ground	31	31	✓	✓	✓
	First Fl	31	31	✓	✓	✓
1E	Ground	33	33	✓	✓	✓
	First Fl	33	33	✓	✓	✓
1F	Ground	36	36	✓	✓	✓
	First Fl	37	37	✓	✓	✓
1G	Ground	37	37	✓	✓	✓
	First Fl	37	37	✓	✓	✓
2	Ground	15	19	✓	✓	✓
	First Fl	18	21	✓	✓	✓
3	Ground	33	33	✓	✓	✓
	First Fl	34	34	✓	✓	✓

Noise impacts (dBC) are predicted to comply with the noise criteria at the nearest sensitive receivers with the inclusion of recommended building noise attenuation measures (Section 7).

## 7 Recommendations

Recommended acoustic mitigation measures are presented in this section to achieve predicted compliance with the relevant assessment criteria.

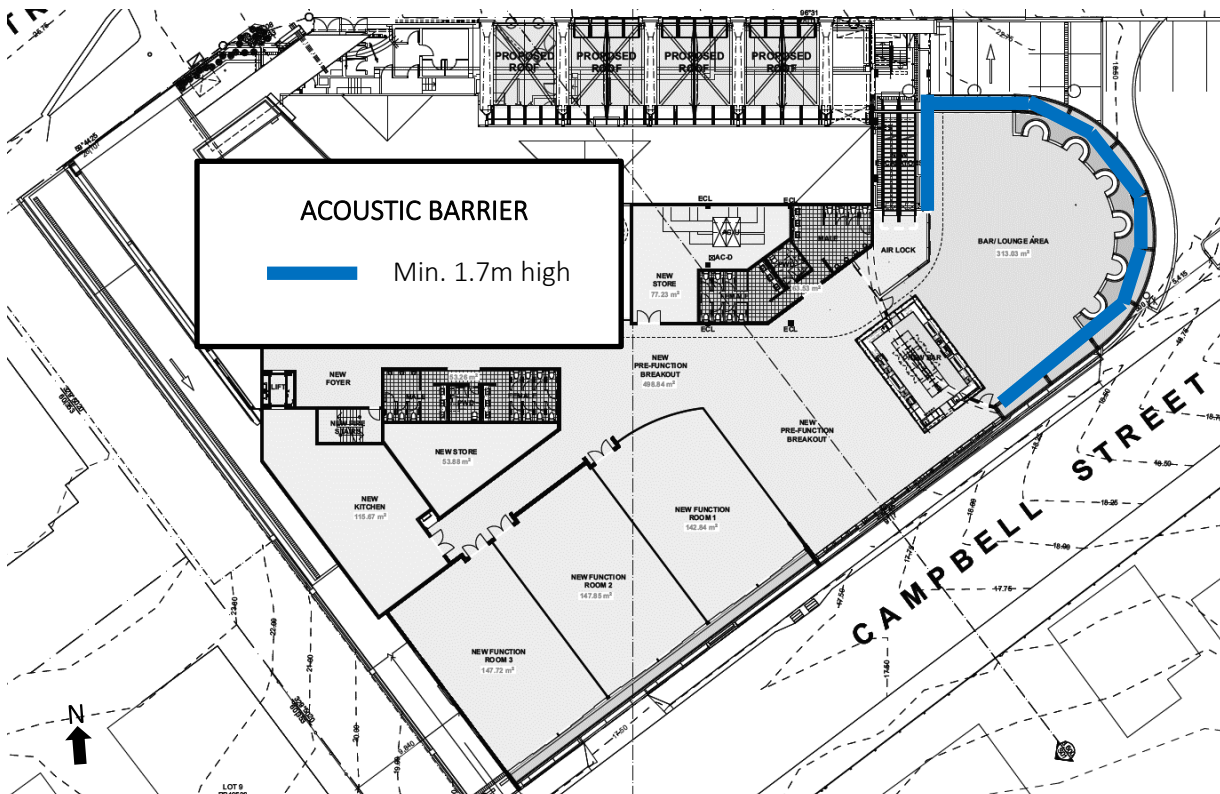
### 7.1 Acoustic Barrier

Acoustic screening is recommended for the Mezzanine Level bar lounge at the location, height and extent as shown in Figure 6.

The acoustic barrier should:

- Be the minimum height relative to the finished bar lounge floor level.
- Be of solid construction and have no gaps or holes for the extent shown.
- Be constructed of a material with a surface mass not less than 12.5kg/m<sup>2</sup>.
- Can include a transparent material, for example, glazing.

Figure 6: Recommended Acoustic Barrier

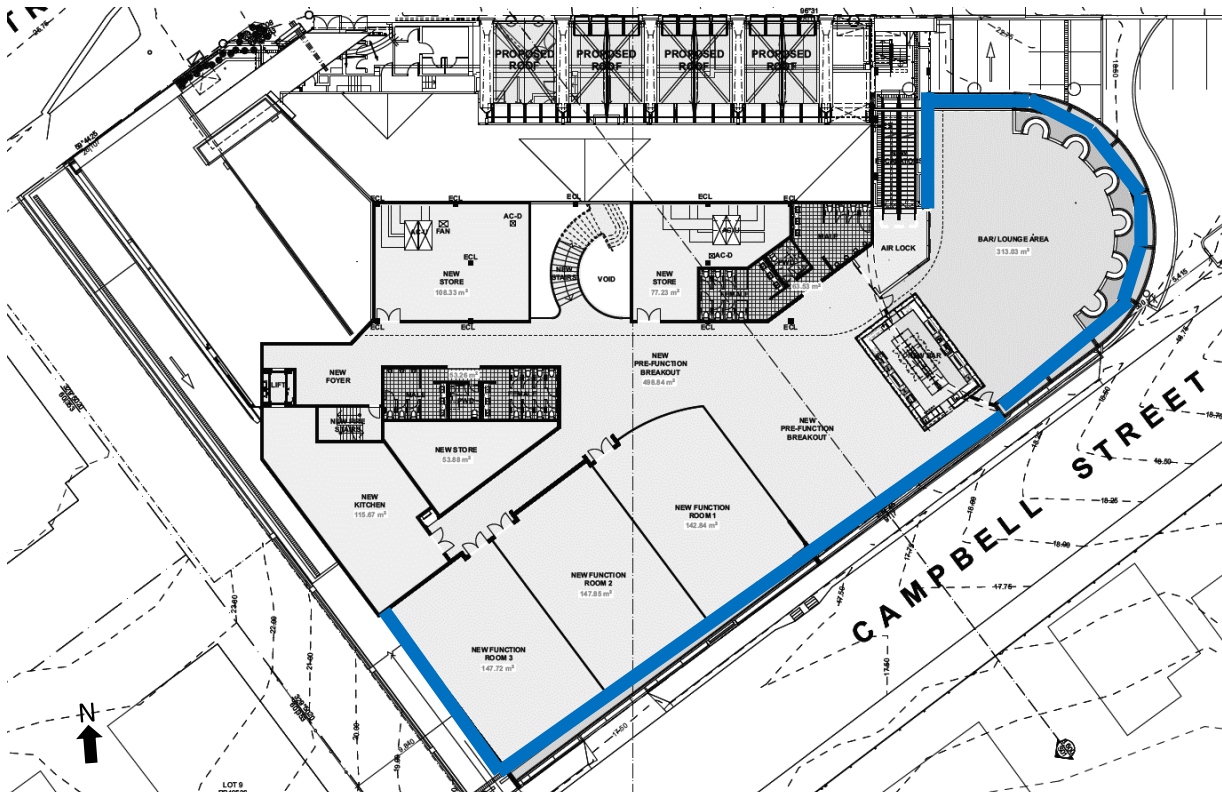


## 7.2 Building Attenuation

The following building attenuation requirements are recommended to comply with noise criteria:

- Mezzanine Level facades acoustic rating: Glazing (min. Rw35), masonry (min. Rw50), roof (min. Rw40). Applicable at the locations shown in Figure 7.

Figure 7: Facades with Acoustic Rating



- Function rooms to achieve a maximum reverberation time of 0.8sec during operation of amplified sound and patrons. This may be achieved with a noise absorbent ceiling (eg. perforated ceiling with cavity insulation) or other surfaces that achieve the required rating. Example calculation provided in Appendix C.

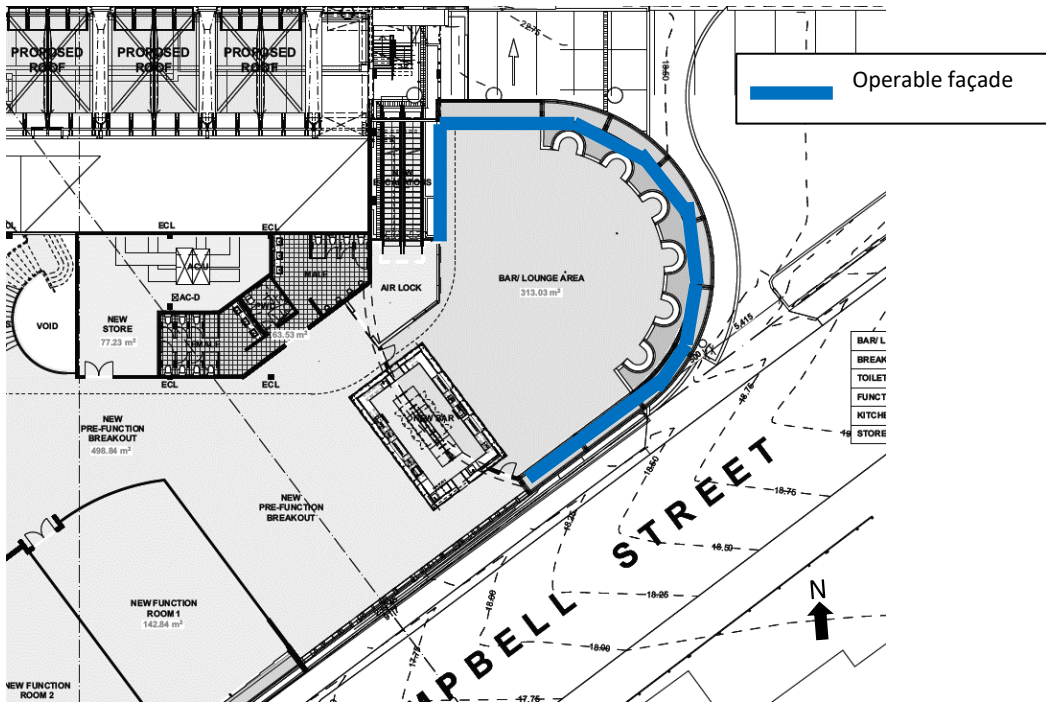
## 7.3 Management Strategies

The following management strategies are recommended to comply with noise criteria and minimise noise annoyance:

1. The Bar lounge operable façade (location shown in Figure 8):
  - a. Can be open between 7am – 6pm
  - b. Can be open between 6pm – 10pm if bar lounge patron number is not more than 75. Otherwise closed.

c. Closed 10pm – 3am.

Figure 8: Bar Lounge Operable Façade Operation



2. Pre-function area façade (south east) is closed during operation.
3. Function rooms façades are closed during operation.
4. Access doors between the pre-function area and bar lounge to be closed during operation with the exception of momentary opening when in use and have an automatic closing mechanism.
5. Amplified music to operate as:
  - Background music only:
    - Pre-function area (7am – 3am)
    - Bar lounge speaker operation when façade is closed
  - Amplified sound (music/voice) (can be above background level): Function rooms (7am -3am) (façade closed)

## 7.4 Mechanical Plant Noise

To comply with *Acceptable Outcome AO1.2 (Centre or mixed use code)* for mechanical plant, we recommend the following for the roof plant deck as described below.

*Development ensures mechanical plant is acoustically screened from nearby sensitive uses.*

The definition of 'acoustically screened' is provided in Table SC1.2.3.B of Brisbane City Plan 2014, Schedule 1 Definitions:

*The source of noise is completely screened from view of habitable rooms (including balconies, patios, decks and verandas) of an adjoining sensitive use by solid, gap free material and construction e.g. acoustic fence, building, or enclosure.*

*Acoustic barrier: Solid, gap free barrier with minimum surface density of 12.5kg/m<sup>2</sup>*

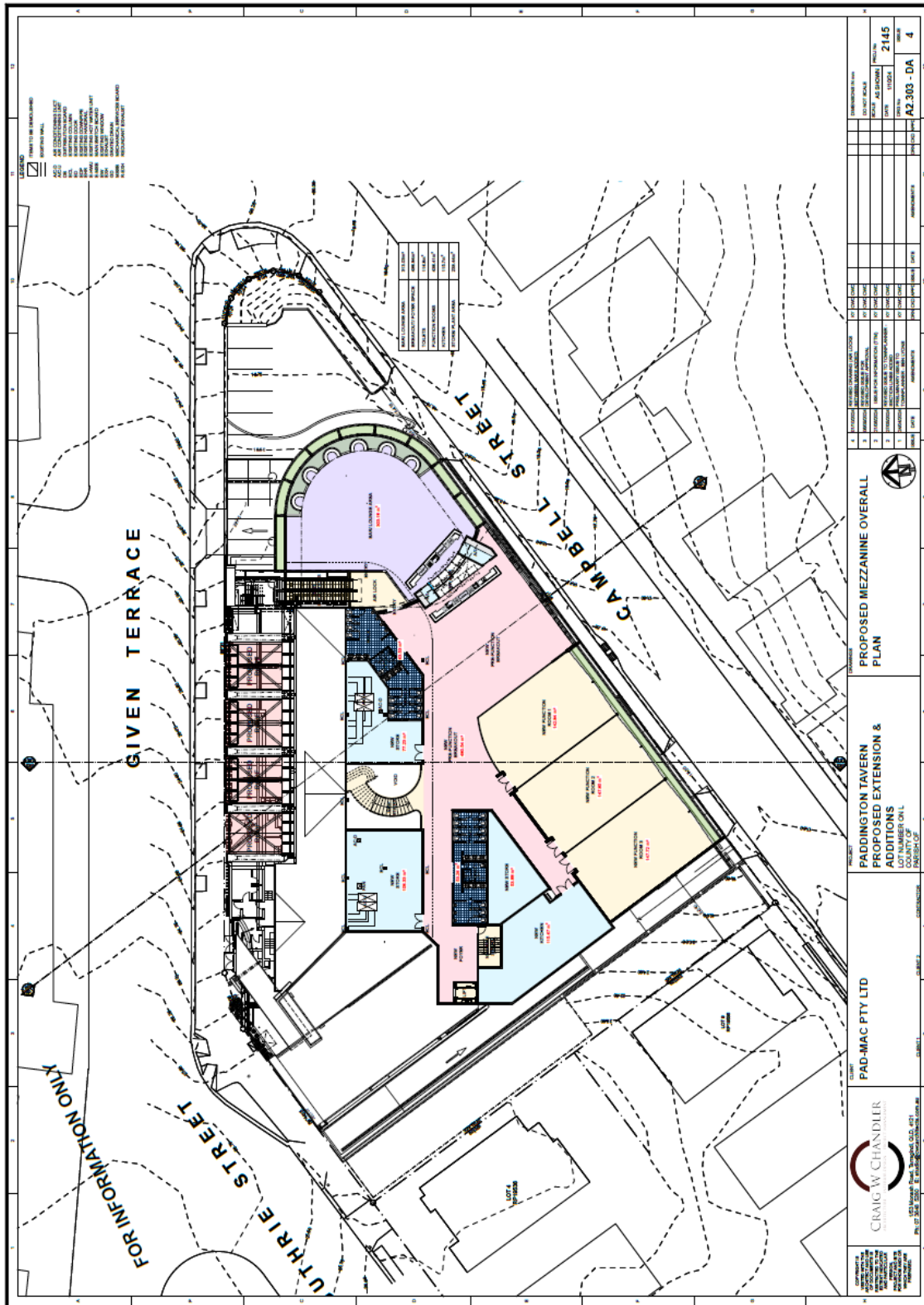
It is assumed that a mechanical plant deck area will be located on the roof. Acoustic screening of the roof plant area is recommended along the south, west and east perimeters for screening to the nearest noise sensitive receivers to the south, west and southeast. The barrier to be not less than the height of the highest plant equipment.

## 8 Conclusion

TTM was engaged by Pad-Mac Pty Ltd to undertake an environmental noise assessment of a proposed food & drink extension located at 186 Given Terrace, Paddington.

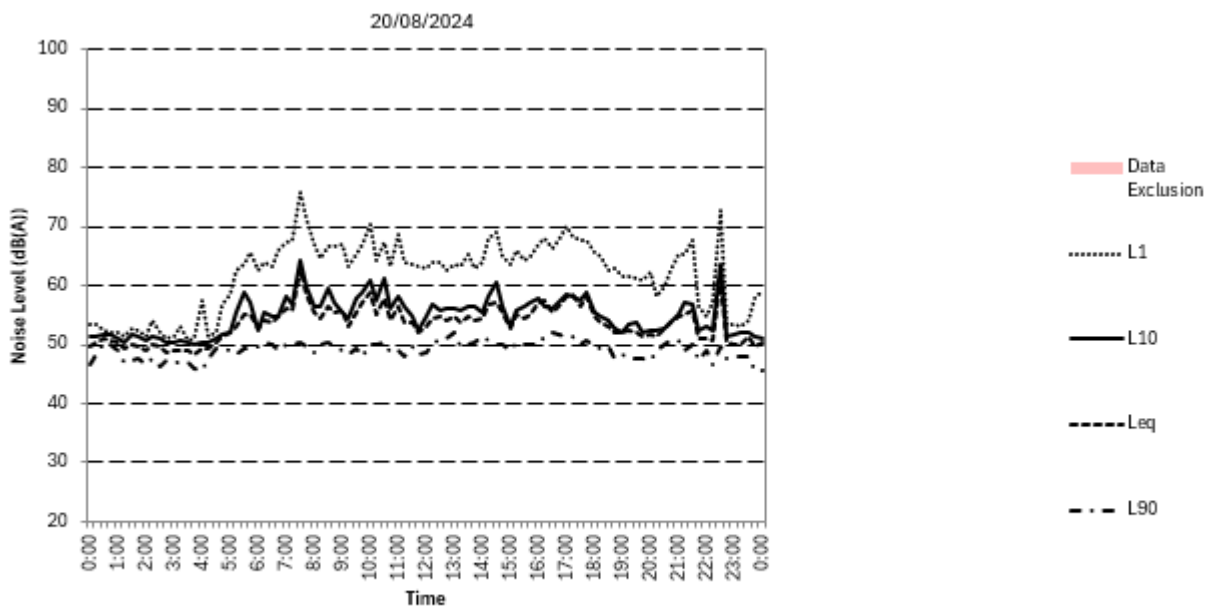
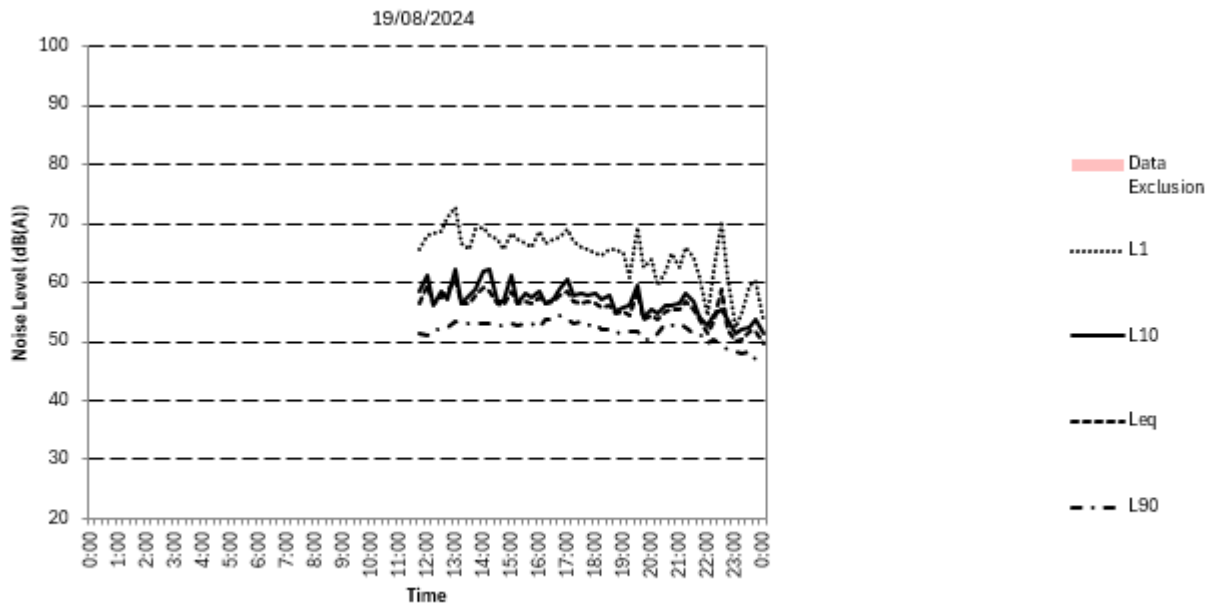
Compliance with the Brisbane City Council *City Plan 2014* planning scheme is predicted to be achieved based on the recommendations outlined in Section 7 of this report.

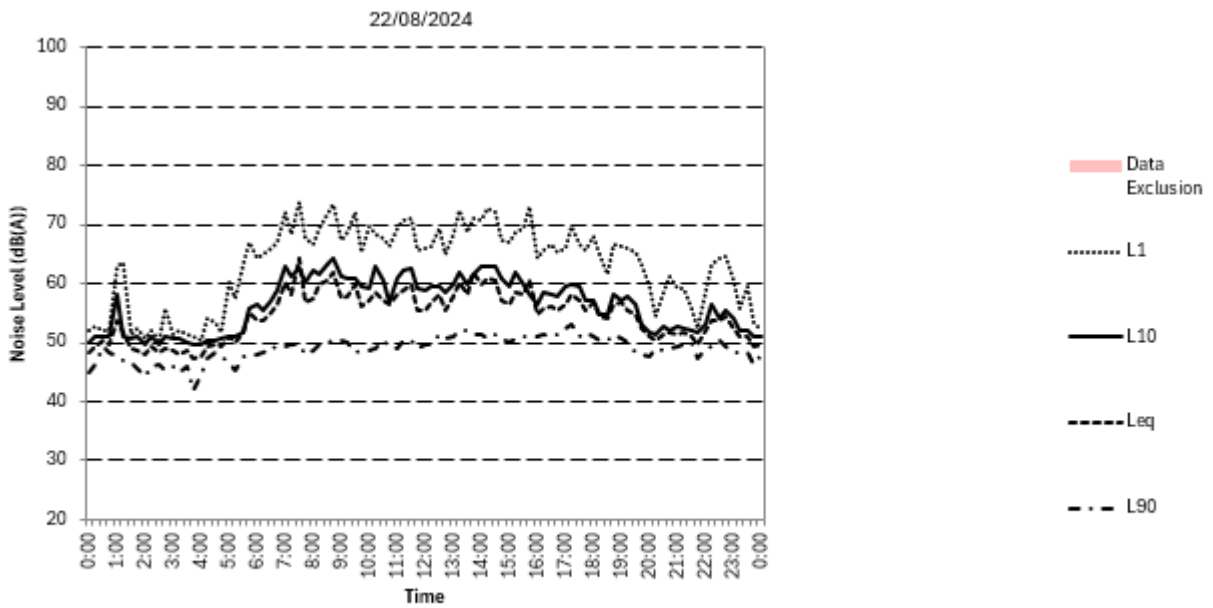
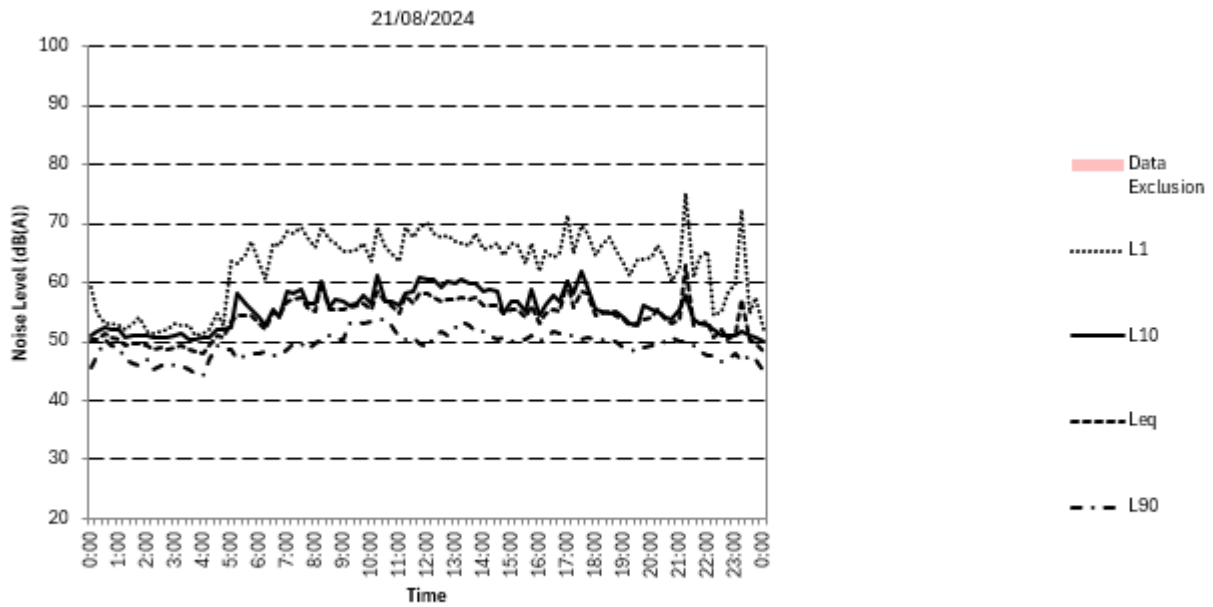
## Appendix A Development Plans

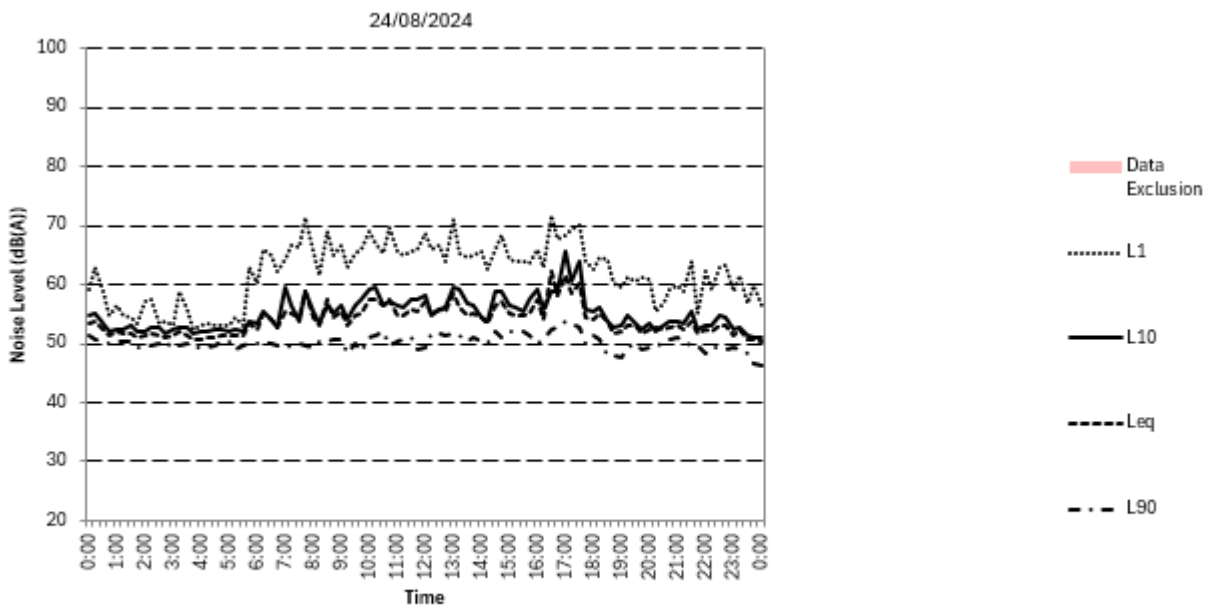
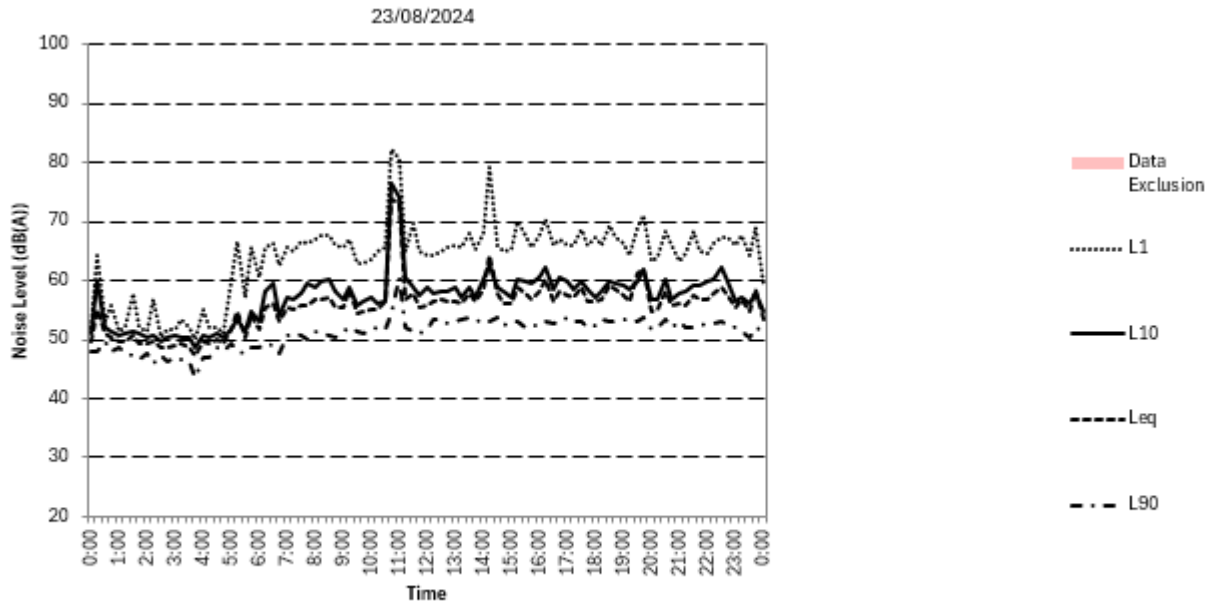


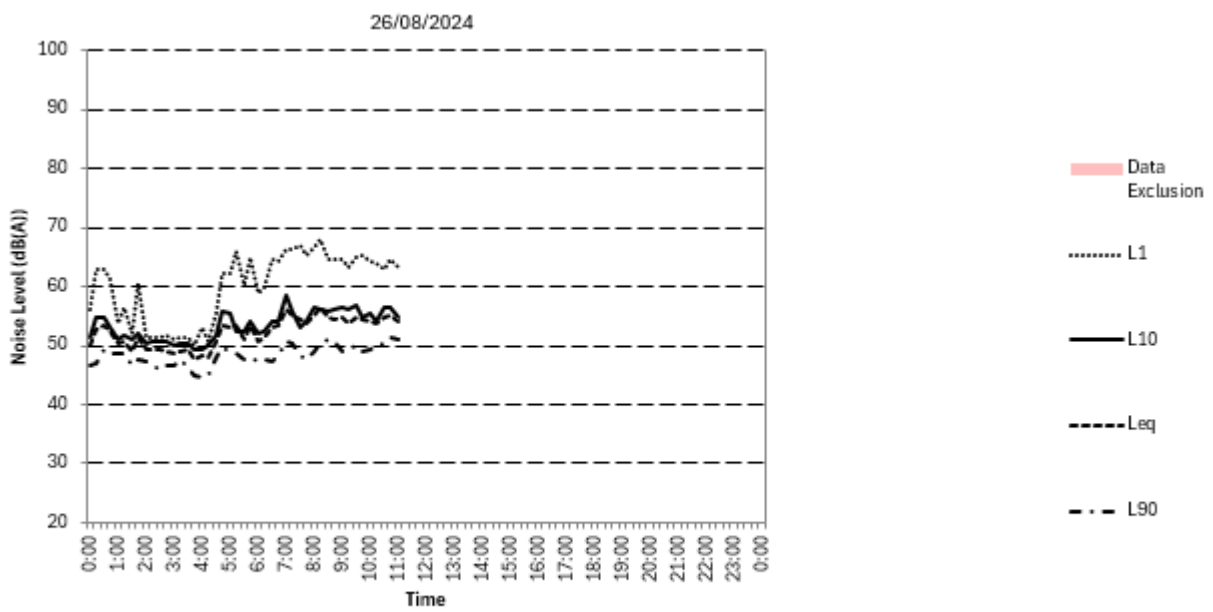
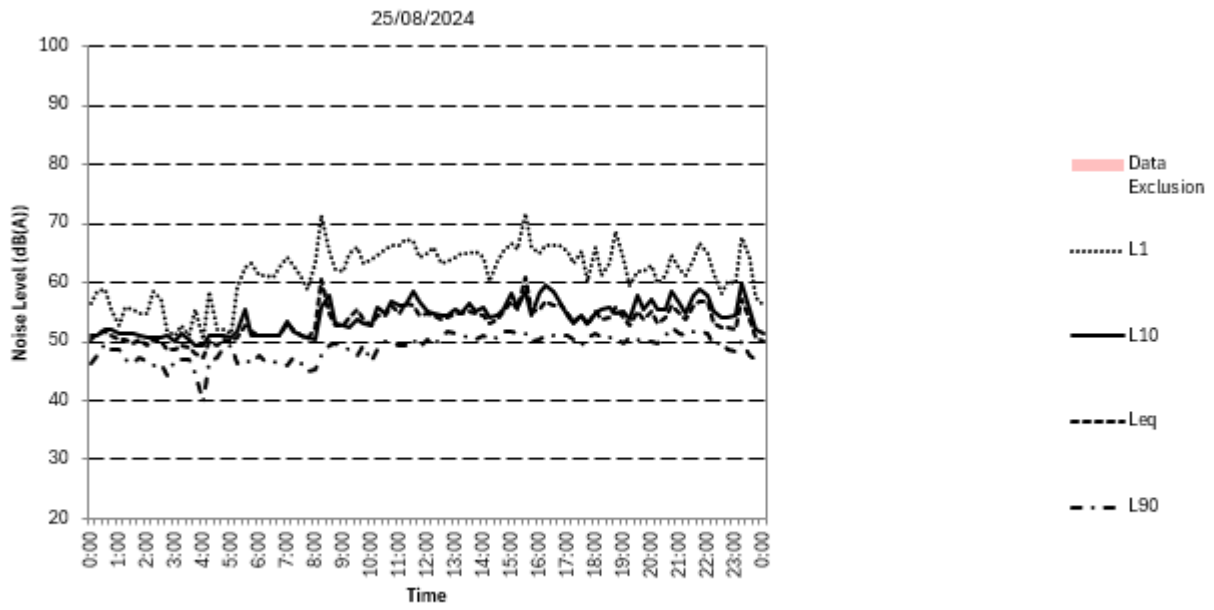


## Appendix B Unattended Noise Monitoring Graphs









## Appendix C SoundPLAN Inputs and Results

Assessment dB(A)



Job No.	Job Title				
24BRA0149					
Date Created	By	Date Revised	Rev	Sheet	
	SY	11 Sep 2024	8		
Date Reviewed	By	Review Type	Review Status		

Internal Reverberant Noise Level - Crowd & Amplified Sound - Function Room (each)

Item / Description	Rating/Broadband/Input			Octave Band Centre Frequency, Hz								
	Rating	dB	dB(A)	31.5	63	125	250	500	1k	2k	4k	8k
<b>Patron number</b>	maximum capacity	140										
<b>Crowd Sound Power Level (SWL)</b>												
Crowd size - no. of people	Hayne et al 2011	100										
LwAeq = 15LogN + 64 dB(A)			94 (A)									
Number of Sources Correction	(Groups of 100 patrons)	1.40				1.5	1.5	1.5	1.5	1.5	1.5	
			<b>Sum</b>	<b>95 (A)</b>								
Amplified sound (SWL Leq)	Music and/or voice. Level adequate for use		100 (A)									
			<b>Sum</b>	<b>101 (A)</b>								
<b>Frequency Spectrum</b>												
Library - Type: Noise Level, Source:	Frequency spectrum		63 (A)			57	62	63	57	48	40	
Adjust to match SWL above		38										
<b>Sum</b>			<b>101 (A)</b>			<b>95</b>	<b>100</b>	<b>101</b>	<b>95</b>	<b>86</b>	<b>78</b>	
<b>Reverberation Time</b>												
Quick RT (from RT Library) - Room Type: Restaurants, Finish Type: Hard		0.80 s				1.0	0.9	0.8	0.8	0.7	0.6	
<b>Building room</b>	Floor area	180	m <sup>2</sup>									
	Height (av)	3.2	m									
	Volume	576	m <sup>3</sup>									
<b>Lp,i (internal, reverberant SPL)</b>												
Reverberant Sound Level (from RT) - RT: Row 14, Lw: Row 19		576 m <sup>3</sup>	1 x	<b>86 (A)</b>		<b>82</b>	<b>86</b>	<b>87</b>	<b>81</b>	<b>71</b>	<b>62</b>	

### Internal Reverberant Noise Level - Crowd & Background Music - Pre-Function Room

Item / Description	Rating/Broadband/Input			Octave Band Centre Frequency, Hz								
	Rating	dB	dB(A)	31.5	63	125	250	500	1k	2k	4k	8k
<b>Patron number</b>	maximum capacity	420										
<b>Crowd Sound Power Level (SWL)</b>												
Crowd size - no. of people	Hayne et al 2011	100										
LwAeq = 15LogN + 64 dB(A)				94 (A)								
Number of Sources Correction	(Groups of 100 patrons)	4.20				6.2	6.2	6.2	6.2	6.2	6.2	
			Sum	100 (A)								
Background music (SWL Leq)	(75dBC@3m)			89 (A)								
			Sum	101 (A)								
<b>Frequency Spectrum</b>												
Library - Type: Noise Level, Source:	Speech - Frequency spectrum			63 (A)		57	62	63	57	48	40	
Adjust to match SWL above		38										
Sum				101 (A)		95	100	101	95	86	78	
<b>Reverberation Time</b>												
Quick RT (from RT Library) - Room Type: Restaurants, Finish Type: Hard		0.80 s				1.0	0.9	0.8	0.8	0.7	0.6	
<b>Building room</b>	Floor area	550	m <sup>2</sup>									
	Height (av)	3.2	m									
	Volume	1760	m <sup>3</sup>									
<b>Lp,i (internal, reverberant SPL)</b>												
Reverberant Sound Level (from RT) - RT: Row 14, Lw: Row 19		1760 m <sup>3</sup>	1 x	81 (A)		76	81	82	76	66	57	

### Internal Reverberant Noise Level - Crowd & Background Music - Bar Lounge (façade closed)

Item / Description	Rating/Broadband/Input			31.5	63	Octave Band Centre Frequency, Hz								
	Rating	dB	dB(A)			125	250	500	1k	2k	4k	8k		
<b>Patron number</b>	maximum capacity	150												
<b>Crowd Sound Power Level (SWL)</b>														
Crowd size - no. of people	Hayne et al 2011	100												
LwAeq = 15LogN + 64 dB(A)				94 (A)										
Number of Sources Correction	(Groups of 100 patrons)	1.50				1.8	1.8	1.8	1.8	1.8	1.8			
				Sum	96 (A)									
Background music (SWL Leq)	Façade closed. (75dBC@3m)			89 (A)										
				Sum	97 (A)									
<b>Frequency Spectrum</b>														
Library - Type: Noise Level, Source: Speech - Frequency spectrum				63 (A)		57	62	63	57	48	40			
Adjust to match SWL above		34												
Sum				97 (A)		91	96	97	91	82	74			
<b>Reverberation Time</b>														
Quick RT (from RT Library) - Room Type: Restaurants, Finish Type: Hard		0.80 s			1.2	1.0	1.0	0.9	0.8	0.8	0.7	0.6	0.4	
<b>Building room</b>														
Floor area		195	m <sup>2</sup>											
Height (av)		3.2	m											
Volume		624	m <sup>3</sup>											
<b>Lp,i (internal, reverberant SPL)</b>														
Reverberant Sound Level (from RT) - RT: Row 14, Lw: Row 19		624 m <sup>3</sup>	1 x	82 (A)		77	81	82	76	67	58			

# Assessment dB(C)



Job No.	Job Title			
24BRA0149				
Date Created	By	Date Revised	Rev	Sheet
	SY	02 Dec 2024	0	
Date Reviewed	By	Review Type	Review Status	

## Internal Reverberant Noise Level - Amplified Sound - Function Room (each) - dBC

Item / Description	Rating/Broadband/Input			Octave Band Centre Frequency, Hz									
	Rating	dB	dB(A)	31.5	63	125	250	500	1k	2k	4k	8k	
Amplified sound (SWL Leq)	Music and/or voice. Level adequate for use												
<b>Frequency Spectrum</b>													
Amplified music	SWL		103 (C)			94	95	97	94	96	93	87	80
Equivalent to source speaker at 1m (based on one speaker)			95 (C)										
<b>Reverberation Time</b>													
Quick RT (from RT Library) - Room Type: Restaurants, Finish Type: Hard		0.80 s				1.0	1.0	0.9	0.8	0.8	0.7	0.6	0.4
<b>Building room</b>													
Floor area		180	m2										
Height (av)		3.2	m										
Volume		576	m3										
<b>Lp,i (internal, reverberant SPL)</b>													
Reverberant Sound Level (from RT) - RT: Row 14, Lw: Row 19		576 m <sup>3</sup>	1 x	89 (C)		81	81	83	79	81	78	71	62

### Internal Reverberant Noise Level - Amplified Sound - Pre-Function Room - dBC

Item / Description	Rating/Broadband/Input			Octave Band Centre Frequency, Hz								
	Rating	dB	dB(A)	31.5	63	125	250	500	1k	2k	4k	8k
Background music (SWL Leq) (based on SPL 75dBC@3m)												
<b>Frequency Spectrum</b>												
Amplified music	SWL		92 (C)		83	84	86	83	85	82	76	69
Equivalent to source speaker at 1m (based on one speaker and 75dBC@3m)			84 (C)									
<b>Reverberation Time</b>												
Quick RT (from RT Library) - Room Type: Restaurants, Finish Type: Hard		0.80 s			1.0	1.0	0.9	0.8	0.8	0.7	0.6	0.4
<b>Building room</b>												
Floor area		550	m2									
Height (av)		3.2	m									
Volume		1760	m3									
<b>Lp,i (internal, reverberant SPL)</b>												
Reverberant Sound Level (from RT) - RT: Row 14, Lw: Row 19		1760 m³	1 x	73 (C)	65	65	67	64	66	62	55	47

### Internal Reverberant Noise Level - Amplified Sound - Bar Lounge - dBC

Item / Description	Rating/Broadband/Input			Octave Band Centre Frequency, Hz								
	Rating	dB	dB(A)	31.5	63	125	250	500	1k	2k	4k	8k
Background music (SWL Leq) (based on SPL 75dBC@3m)												
<b>Frequency Spectrum</b>												
Amplified music	SWL		92 (C)		83	84	86	83	85	82	76	69
Equivalent to source speaker at 1m (based on one speaker and 75dBC@3m)			84 (C)									
<b>Reverberation Time</b>												
Quick RT (from RT Library) - Room Type: Restaurants, Finish Type: Hard		0.80 s			1.0	1.0	0.9	0.8	0.8	0.7	0.6	0.4
<b>Building room</b>												
Floor area		195	m2									
Height (av)		3.2	m									
Volume		624	m3									
<b>Lp,i (internal, reverberant SPL)</b>												
Reverberant Sound Level (from RT) - RT: Row 14, Lw: Row 19		624 m <sup>3</sup>	1 x	77 (C)	69	70	71	68	70	67	60	51



**186 Given Tce, Paddington**  
**Assessed receiver levels - Prediction - Day - Bar lounge facade open**  
**150 patrons**

Name	Floor	Leq,1hr (Free field) dB(A)
Receiver 1A	GF	46
	F 1	48
Receiver 1B	GF	47
	F 1	49
Receiver 1C	GF	46
	F 1	49
Receiver 1D	GF	45
	F 1	48
Receiver 1E	GF	44
	F 1	46
Receiver 1F	GF	40
	F 1	41
Receiver 1G	GF	38
	F 1	39
Receiver 2	GF	47
	F 1	49
Receiver 3	GF	32
	F 1	32

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**186 Given Tce, Paddington**  
**Assessed receiver levels - Prediction - Evening - Bar lounge facade**  
**open 75 patrons**

Name	Floor	Leq,1hr (Free field) dB(A)
Receiver 1A	GF	42
	F 1	44
Receiver 1B	GF	43
	F 1	45
Receiver 1C	GF	42
	F 1	45
Receiver 1D	GF	42
	F 1	44
Receiver 1E	GF	40
	F 1	42
Receiver 1F	GF	37
	F 1	38
Receiver 1G	GF	36
	F 1	37
Receiver 2	GF	43
	F 1	45
Receiver 3	GF	31
	F 1	31

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SoundPLAN 9.0

**186 Given Tce, Paddington**  
**Assessed receiver levels - Prediction - Night - Bar lounge facade closed**

Name	Floor	Leq,1hr (Free field) dB(A)
Receiver 1A	GF	26
	F 1	26
Receiver 1B	GF	29
	F 1	29
Receiver 1C	GF	31
	F 1	31
Receiver 1D	GF	33
	F 1	33
Receiver 1E	GF	33
	F 1	34
Receiver 1F	GF	34
	F 1	35
Receiver 1G	GF	35
	F 1	35
Receiver 2	GF	26
	F 1	26
Receiver 3	GF	30
	F 1	31

**186 Given Tce, Paddington**  
**Assessed receiver levels**  
 Prediction - Day/evening - Bar/lounge facade open Music dBC

Receiver	FI	Leq, 1hr (Free field) dB(C)
Receiver 1A	GF	23
	F 1	24
Receiver 1B	GF	26
	F 1	26
Receiver 1C	GF	28
	F 1	28
Receiver 1D	GF	31
	F 1	31
Receiver 1E	GF	33
	F 1	33
Receiver 1F	GF	36
	F 1	37
Receiver 1G	GF	37
	F 1	37
Receiver 2	GF	15
	F 1	18
Receiver 3	GF	33
	F 1	34

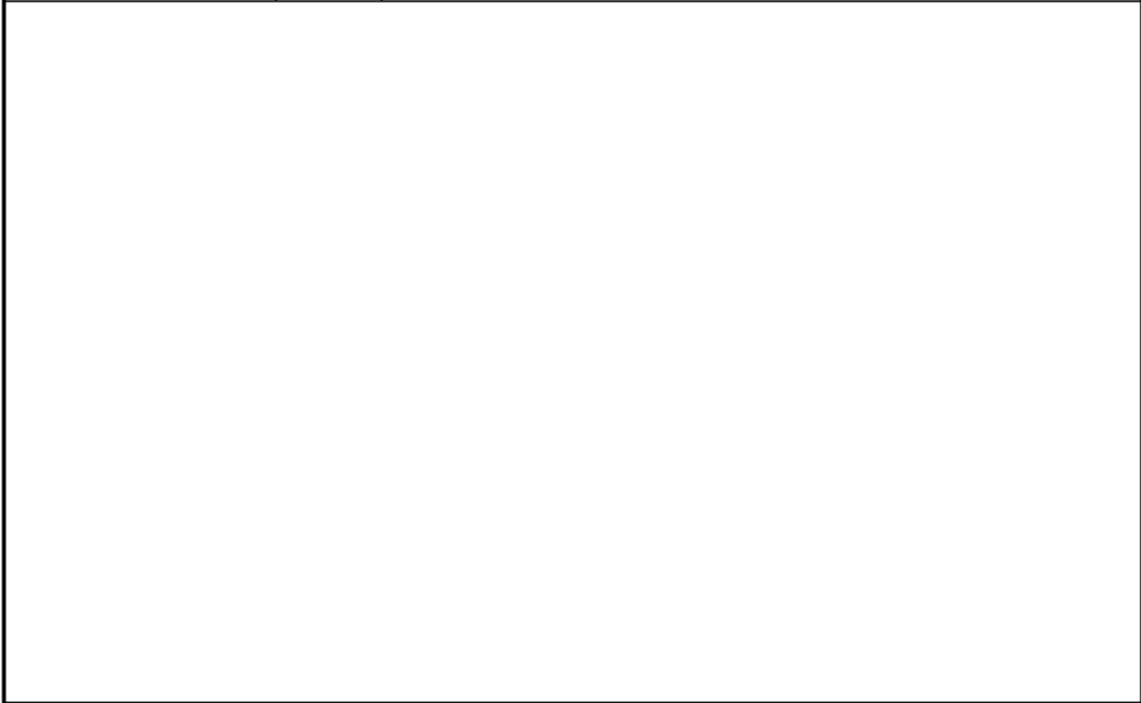
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SoundPLAN 9.0

**186 Given Tce, Paddington**  
**Assessed receiver levels**  
 Prediction - Night - Bar/lounge facade closed Music dBC

Receiver	FI	Leq, 1hr (Free field) dB(C)
Receiver 1A	GF	24
	F 1	25
Receiver 1B	GF	26
	F 1	27
Receiver 1C	GF	29
	F 1	29
Receiver 1D	GF	31
	F 1	31
Receiver 1E	GF	33
	F 1	33
Receiver 1F	GF	36
	F 1	37
Receiver 1G	GF	37
	F 1	37
Receiver 2	GF	19
	F 1	21
Receiver 3	GF	33
	F 1	34



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