



The Brisbane Hotel, Beaufort Street

Acoustic Report

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Client	ARK Group

E-LAB Consulting

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Document QA and Revisions

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4				

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1 INTRODUCTION

1.1 DOCUMENT PURPOSE

E-Lab Consulting has been commissioned by ARK Group to undertake an acoustic assessment for the proposed refurbishment of The Brisbane Hotel, located at 292 Beaufort Street, Highgate 6000, WA

The assessment focuses on the impact of noise emissions from hotel operations on the nearest noise-sensitive receivers, considering the proposed refurbishment of the hotel, which includes minor modifications to the existing premises and development of an outdoor pavilion designed to provide an indoor-outdoor environment.

This acoustic report has been prepared as part of the Development Application for the project. Noise emissions from the development are assessed to maintain compliance to nearest noise sensitive receivers in accordance with WA Environmental Protection (Noise) Regulations 1997.

1.2 RELEVANT DOCUMENTS

The following standards, regulations and guidelines have been used to establish the project specific acoustic design requirements for the development.

- Western Australian Environmental Protection (Noise) Regulations 1997 (WA EPNR)

2 PROJECT SITE

2.1 SITE DESCRIPTION

The project site is located at the corner of Beaufort Street and Brisbane Street, within an area that includes a mix of commercial, mixed-use, and residential developments. Birdwood Square Park is situated to the west across Beaufort Street, while nearby land uses include food and beverage venues such as Source Foods and Tom's Providore & Wine Bar, along with other mixed-use commercial tenancies.

The site fronts Beaufort Street and is also bounded by Brisbane Street, which provides secondary vehicle and pedestrian access. Stirling Street lies to the east of the site, linking the area to surrounding residential and commercial precincts.

The nearest noise-sensitive receivers include a two-storey apartment building located directly across Brisbane Street, as well as a residential complex situated to the northeast of the site. Figure 1 presents the project location and nearest noise-sensitive receivers.

Figure 1: Project Location and nearest noise sensitive receivers



Source: Google

3 PROJECT CRITERIA

This section presents the regulatory requirements, and acoustic design criteria for the proposed development.

3.1 NOISE EMISSIONS – WA ENVIRONMENTAL PROTECTION (NOISE) REGULATIONS 1997

Environmental noise emissions resulting from the development are addressed through the *Environmental Protection Act 1986* with the prescribed standards detailed in the *Environmental Protection (Noise) Regulations 1997* (WA EPNR). The regulations are based on maximum allowable noise levels termed the ‘assigned noise level’.

According to the EPNR, noise emissions from any premises are deemed not to significantly impact the receiver if the emissions are 5 dB or less below the assigned levels. In summary, assigned noise levels are set by evaluating the presence of commercial and industrial zones, major transport routes, and sporting venues around noise-sensitive premises.

The assigned levels apply at premises receiving the noise (noise sensitive receiver) and not to areas within the project site or lot. In addition, the Environmental Protection (Noise) Regulations 1997 identify the following in Schedule 3, clause 2A.

- “If the land within either of the circles is categorised on the land use map as land in respect of which mixed uses are permitted, the use of that land that results in the highest influencing factor is to be used in the determination of the influencing factor.”

City of Vincent’s online mapping system (Local Planning Scheme 2) have been used to ascertain land use. Based on these maps, the influencing factor at the nearest noise sensitive receivers has been calculated, the nearest noise sensitive receiver has been identified as detailed below and shown in Figure 2.

- 79 Brisbane Street, Perth 6000 WA
- 3-7 Greenway St, Perth 6000 WA

3.1.1 Influencing Factor

The influencing factor for results from identifying major roads, commercial and industrial areas for the nearest noise sensitive receivers is detailed in Table 2. The zoning maps used for the calculation of influencing factor showing the land use types has been presented in Figure 2.

Traffic data for roads surrounding the nearest noise sensitive receiver were obtained from Main Roads Western Australia (MRWA). Table 1 presents the traffic data of the nearby roads.

Table 1: Traffic Data (Main Roads WA)

ROAD	WA EPNR CLASSIFICATION	ANNUAL AVERAGE DAILY TRAFFIC VOLUMES / YEAR
Beaufort Street (North of Bulwer St)	Secondary Road	13,671 (2021 -22)

Table 2: Influencing factor (IF) noise sensitive receiver

NOISE SENSITIVE RECIEVERS	COMMERCIAL	INDUSTRIAL	ROAD	INFLUENCING FACTOR
79 Brisbane Street 3-7 Greenway Street	17 % within 100m radius 20 % within 450m radius	0 % within 100m radius 0 % within 450m radius	Beaufort Street	4 dB



Figure 2: Zoning maps for the project and surrounding areas



Source: City of Vincent Intramaps

3.1.2 Assigned Noise Levels – Noise Sensitive Receivers

Table 3 summarises the assigned levels at the nearest noise sensitive receivers. All noise emissions from the development are below the assigned level criteria for all defined periods of the day and at the lot boundary of the receiver or 15m from any associated building.

Table 3: Assigned levels

TYPE OF PREMISES RECEIVING NOISE	TIME OF DAY	ASSIGNED LEVEL (DB)		
		LA10	LA1	LAmx
Noise sensitive premises: Highly sensitive area	0700 to 1900 hours Monday to Saturday	49	59	69
	0900 to 1900 hours Sunday & public holidays	44	54	69
	1900 to 2200 hours all days	44	54	59
	2200 hours on any day to 0700 hours Monday to Saturday, and 0900 hours Sunday & public holidays	39	49	59
Noise sensitive premises: any area other than highly sensitive areas	All Hours	60	75	80
Commercial premises	All Hours	60	75	80
Industrial and utility premises	All Hours	65	80	90

3.1.3 Noise Character Adjustments

Regulation 7 states that the noise character must be “free” of annoying characteristics, namely –

- Tonality, e.g. whining, droning;



- Modulation, e.g. like a siren; and
- Impulsiveness, e.g. banging, thumping.

Regulation 9 (1) establishes the methodology for determining noise characteristics. If these characteristics cannot be reasonably and practicably removed, a series of adjustments to the measured levels are required, indicated in Table 4.

Table 4: Noise character adjustment

ADJUSTMENT WHERE NOISE EMISSION IS NOT MUSIC THESE ADJUSTMENTS ARE CUMULATIVE TO A MAXIMUM OF 15 DB			ADJUSTMENT WHERE NOISE EMISSION IS MUSIC	
Where tonality is present	Where modulation is present	Where impulsiveness is present	Where impulsiveness is not present	Where impulsiveness is present
+ 5 dB	+ 5 dB	+ 10 dB	+ 10 dB	+ 15 dB

Should music noise from the project become audible at the receiving locations, a +10/15 dB adjustment will be required, likely resulting in non-compliance to the EPNR.

3.1.4 Mechanical Services Noise Emissions

Mechanical equipment serving the project is required to meet the assigned levels of the EPNR at the nearest sensitive receivers. It is important that noise emissions from the site do not present any form of tonality, modulation or impulsiveness (as defined by the EPNR).



4 NOISE EMISSIONS

Noise modelling software Sound PLAN v9.0 was used to assess noise emissions from the operation of the premises at the nearest noise sensitive receivers.

- Noise emissions from the outdoor pavilion.

4.1.1 Operating Hours

The proposed operating hours of the venue have been summarised below:

- Monday, Tuesday and Sunday - 11am to 10pm
- Wednesday and Thursday - 11am to 11pm
- Friday and Saturday - 11am to 12 midnight

4.1.2 Patron Capacity

The current capacity of the premises is detailed below:

- Ground floor internal 350pax
- Ground floor external 350pax

As part of this development the new outdoor pavillion is proposed to have the following additional patrons, noise emissions due to the addition of outdoor pavillion has been modelled and assessed:

- Outdoor pavilion (at the eastern boundary) – 150Pax

4.1.3 Algorithm and Meteorological Conditions

ISO 9613 - *Acoustics – Attenuation of sound during propagation outdoors* algorithm has been used for the noise model predictions with a reflection order of 3. The noise model has considered noise source levels, distance from the source to receivers, and screening effects due to existing, proposed buildings and ground topology.

4.1.4 Topography

Terrain contours were sourced from *Geoscience Australia, Digital Elevation Model (DEM) 1 Metre Grid of Australia derived from LiDAR, 2015*.

A reflective ground condition (0.6) was used as the areas surrounding the project are vegetated areas.

4.1.5 Receivers

All noise receivers were located at 1.5m above ground and each floor level and 1m away from buildings associated with highly sensitive uses.

Reflected noise from the building façade is included in the received noise levels.

4.1.6 Outdoor Patron Sound Levels

The operational noise assessment of the venue has been conducted based on the following assumptions:

- Even distribution of patrons within the premises
- Sound level associated with speech from a 50% mixture of male and female patrons.
- One in two patrons are speaking continuously at any given time.

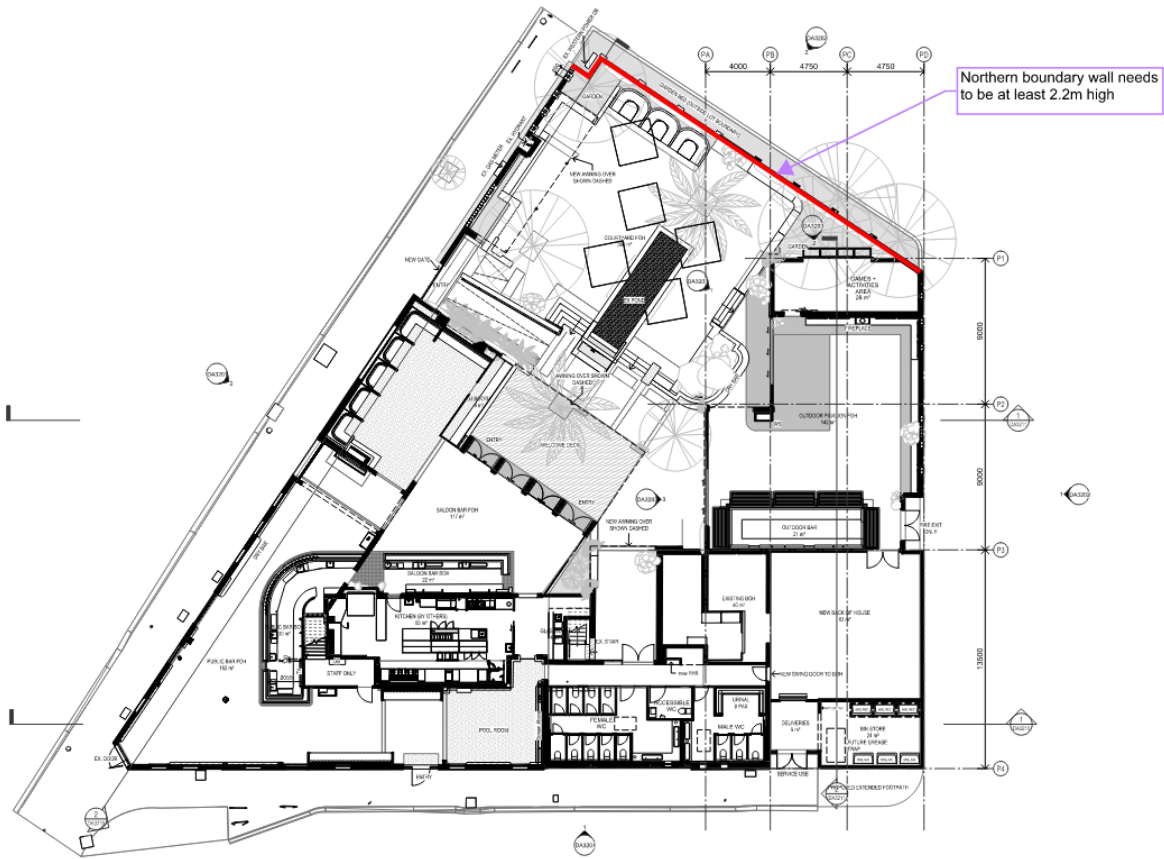
Music in outdoor area must be regulated at a level where it is not audible at the nearest noise sensitive receivers.

Patron Sound Power Levels in the outdoor area were predicted using the formula $66 \text{ dB(A)}/\text{m}^2$ presented by VDI Standard 3770:2012, "Emissionskennwerte von Schallquellen - Sport und Freizeitanlagen".

4.1.7 Architectural Considerations

Architectural documentation from Woods Bagot dated 15-10-2025 have been used in the development of the model. It is to be noted that the northern boundary (refer to Figure 3) of the site is considered 2.2m high in the model, as per the available information.

Figure 3: Ground floor architectural plan – Brisbane Hotel



Source: Woods Bagot

4.2 PREDICTED NOISE EMISSIONS

Predicted noise levels from the operations of the outdoor pavillion are presented in Table 5, respectively. Appendix A presents the coloured noise map.

Table 5: Predicted noise emissions at nearest noise sensitive receivers

NOISE SENSITIVE RECEIVER	HIGHEST PREDICTED NOISE EMISSION LA10 dBA	CRITERIA LA10 dBA			COMPLIANCE
		DAY	EVENING	NIGHT	
79 Brisbane St	33	49	44	39	YES
3-7 Greenway St	34	49	44	39	YES

4.3 DISCUSSION

Predicted noise emissions from the outdoor pavilion comply with the criteria across all time periods. It is noted the levels are 5dB below the assigned levels so the noise emissions the premises are deemed not to significantly impact the noise sensitive receivers.

Following recommendations are made to achieve maintain the acoustic amenity to the area:

- The glazed door to the outdoor pavilion remains closed during night-time hours (10:00 pm to midnight)
- The music is only played at a level where it is not audible at the nearest noise sensitive receivers.

Noise management measures provided in Section 5 must be put in place to ensure venue contributions to received noise levels are not significant.

5 NOISE MANAGEMENT PLAN

The primary goal of the Noise Management Plan (NMP) is to communicate with nearby receivers about the noise impacts from the development and mitigate these effects as effectively as possible. Meeting this objective should reduce the number of complaints, thus lowering the chances of persistent issues and compliance investigations.

The purpose of the NMP is to:

- Identify any change in planned operations.
- Target compliance with the Environmental Protection (Noise) Regulations 1997; and
- Managing noise impact and encouraging engagement with nearby noise sensitive receivers.

The approach involves maintaining continuous dialogue, communication, and mitigation efforts with potentially affected residents, considering the intended use of the development.

5.1 PATRONS AND MUSIC

The recommendations in section 4.3 shall be maintained. Where noise emissions include audible music, adjustments to measured noise levels are required per the EPNR that would likely result in non-compliance.

Following recommendations are made for managing music noise

- Music must always be controlled such that it is not audible at the nearest noise sensitive receivers.

The following is recommended for any amplifier / PA system used:

- The speakers used should not be directly attached to the lightweight roof structure via hard connections, in order to reduce noise transmission through the roof.
- The venue amplifier / PA system should be accessible by the Licensee and/or the Approved Manager only;

In addition, the following administrative controls are recommended:

- Given the movement of patrons between indoor and outdoor area, noise emissions from the venue should be managed, ensuring that they do not become a dominant source of noise at the site boundaries at any time;
- Venue staff are to monitor dispersal of patrons to the outdoor area and manage any noise issues arising.

5.2 WASTE COLLECTION

- Under Regulation 14A of the EPNR, the noise levels specified in Regulation 7 do not apply to waste collection activities (including commercial sources), provided that:
- The operations are conducted in the quietest reasonable and practicable manner;
- The equipment used is the quietest reasonably available;
- If a noise management plan is required (e.g., if the work is scheduled outside of 0700–1900 hours Monday through Saturday, or 0900–1900 hours on Sundays and public holidays), the plan must be submitted, approved, and adhered to.
- The following administrative measures are recommended:
 - Waste collection should ideally occur between 7am and 7pm Monday to Saturday.
 - Efforts should be made to avoid having waste collection and recycling trucks on site simultaneously.
 - If a truck is waiting in the carpark for bin access, it should have its engine turned off.

5.2.1 Emptying of Bins

The emptying of bins, especially when filled with glass bottles, can be an occupational peak noise hazard to the operator, as well as significant source of environmental noise.



The following administrative measures are recommended:

- The handling of bins full of glass bottles should occur during daytime hours where possible to minimise disruption to the community.
- Venue staff should take care to reduce the drop height of glass onto glass when filling bins.

5.3 COMPLAINTS MANAGEMENT

Whenever possible, neighbouring residents should be encouraged to report any complaints directly to the venue staff initially.

Initially, management should verify that the Noise Management Plan (NMP) requirements are being followed and, if feasible, make prompt adjustments if the complaint pertains to ongoing activities.

After assessment, venue management will provide a response aimed at resolving the issue to the complainant's satisfaction.

6 CONCLUSION

E-Lab Consulting has been commissioned by ARK Group to undertake an acoustic assessment for the proposed refurbishment of The Brisbane Hotel, located at 292 Beaufort Street, Highgate 6000, WA

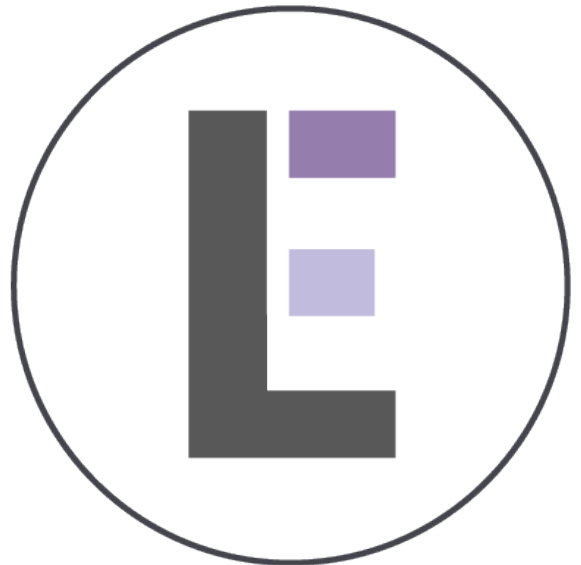
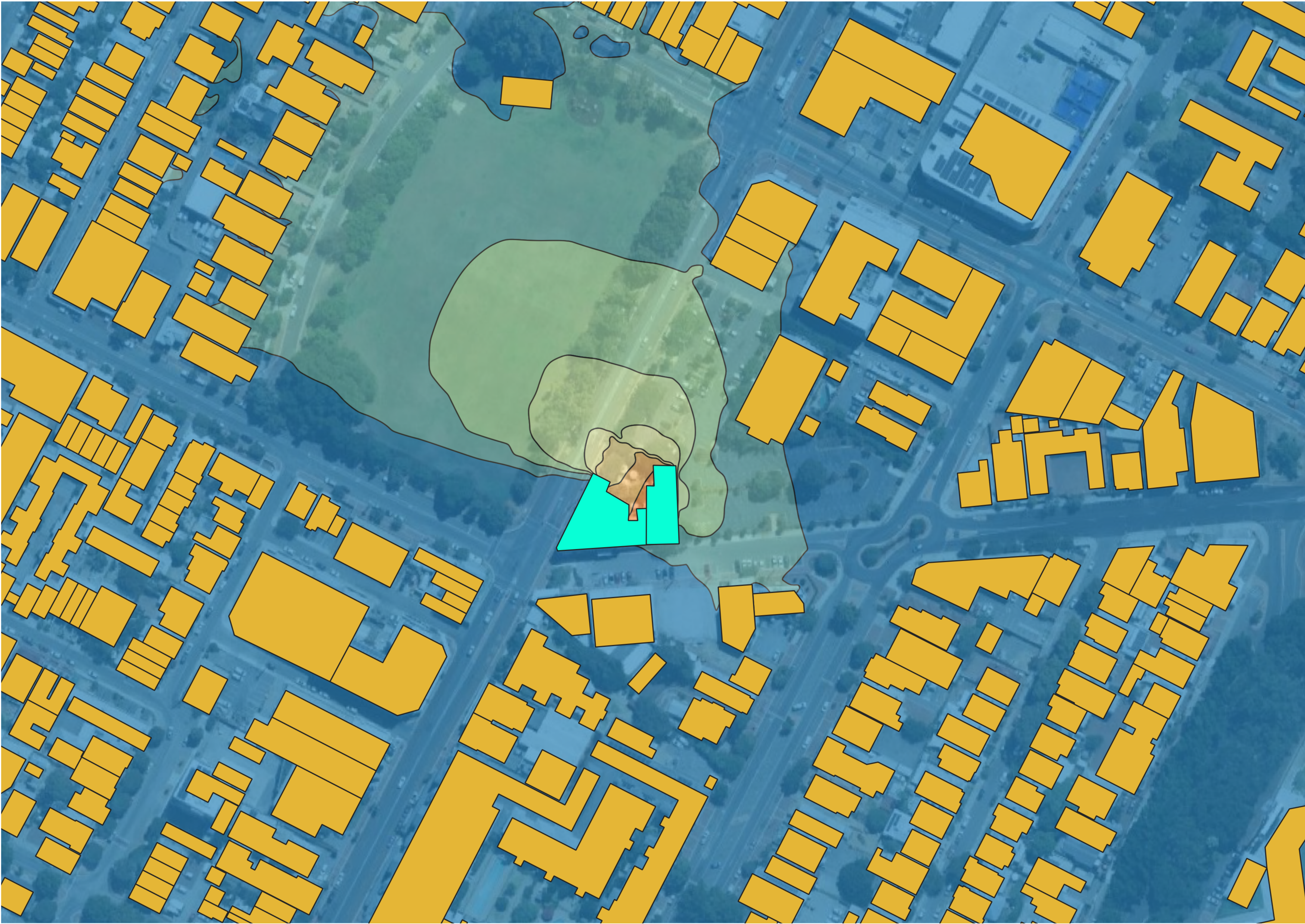
The assessment focuses on the impact of noise emissions from hotel operations on the nearest noise-sensitive receivers, considering the proposed refurbishment of the hotel, which includes minor modifications to the existing premises and development of an outdoor pavilion designed to provide an indoor-outdoor environment.

This acoustic report has been prepared as part of the Development Application for the project. A 3D noise model using Sound PLAN 9.0 was built to assess noise emissions from the operations of the premises. Based on assumptions made in this report the predicted noise levels comply with WA EPNR.

In summary, in view of the available information, we consider that the refurbishment will be able to comply with the WA EPNR with application of recommended management measures.

Appendix A **Noise Contours**





E-LAB CONSULTING

ISSUE	DATE	STATUS
1	01/10/2025	For Information

LEGEND

Noise Level - L_{eq} dB(A)

- 30
- 35
- 40
- 45
- 50
- 55
- 60
- 65
- 70

NOTES

- Surrounding Buildings
- Project Building

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PROJECT
THE BRISBANE HOTEL, BEAUFORT STREET

PROJECT NO.
P02644

ARCHITECT
WOODS BAGOT

CLIENT
ARK GROUP

SCALE
NTS

STATUS
ISSUE FOR INFORMATION

DRAWING
GRID NOISE MAP - OUTDOOR PAVILION

DISCIPLINE
ACOUSTICS

DRAWING NUMBER
AC-DWG-100-01-01

REVISION
001

