

Attachment C

Acoustic Report and Responses



50-58 Sir John Crescent,
Woolloomooloo

Roof Top Terrace DA Acoustic Assessment

Pitch Properties Pty Ltd

Report number: 250116-50-58 Sir John Young Cres Woolloomooloo -DA Acoustic Assessment-R2

Date: 18 December 2025

Version: Issue 2



DOCUMENT CONTROL

Project Name	50-58 Sir John Crescent, Woolloomooloo
Project Number	250116
Report Reference	250116 – 50-58 Sir John Crescent, Woolloomooloo
Client:	Pitch Properties Pty Ltd

Revision	Description	Reference	Date	Prepared	Checked	Authorised
0	For Submission	250116-50-58 Sir John Young Cres, Woolloomooloo -DA Acoustic Assessment-R0	24 March 2025	Ben White	Matthew Furlong	Ben White
1	For Submission	250116-50-58 Sir John Young Cres, Woolloomooloo -DA Acoustic Assessment-R1	2 December 2025	Ben White	Matthew Furlong	Ben White
2	For Submission	250116-50-58 Sir John Young Cres, Woolloomooloo -DA Acoustic Assessment-R2	18 December 2025	Ben White	Matthew Furlong	Ben White

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1 INTRODUCTION

Pulse White Noise Acoustics Pty Ltd (PWNA) has been engaged by Pitch Properties Pty Ltd to undertake an acoustic assessment for the proposed use of the roof top terrace located on the roof of the existing building at 50-58 Sir John Young Crescent, Woolloomooloo.

This assessment will address the following:

- Potential for noise emissions from the proposed use of the roof top terrace on surrounding receivers.

This report will discuss the relevant acoustic criteria which have been adopted as well as the outcome of the assessment.

A list of acoustic terminology used in this report is included in Appendix A of this report.

1.1 Proposed Project

This development application (DA) includes the proposed activation of the rooftop of 50-58 Sir John Young Crescent, Woolloomooloo to include a roof top terrace.

The development site includes the roof top of the existing building at 50-58 Sir John Young Crescent, Woolloomooloo which is located on the eastern side of Sir John Young Crescent. The site is located within an area which includes existing commercial and residential receivers which neighbour the site. The site location, in relation to surrounding receivers, is detailed in Figure 2 below.

The project includes the design within the Sissons Architects drawings, dated September 2025, including the following:

1. Hours of use including 7:00 am to 8:00 pm on any day of the week.
2. Potential maximum number of people using the area with the following breakdowns:
 - a. Up to 50 people using the general areas of the roof top.
 - b. Up to 12 people using the exercise and wellness activities area (to be used for activities such as yoga, stretching and the like).

The architectural drawings used for this assessment are from Sissons Architects and dated 18/12/25.

Figure 1 Proposed Roof Top Layout



The nearest sensitive receivers to the site have been identified below.

- | | |
|--------------------|---|
| Receiver 1: | Residential receivers located to the south within the building at 68 Sir John Young Crescent with facades facing to the west. |
| Receiver 2: | Residential receivers located to the south within the building at 68 Sir John Young Crescent with facades facing to the east. |
| Receiver 3: | Residential dwellings within the terrace houses at 2-34 Crown Street and located to the east of the site. |
| Receiver 4: | Residential dwellings located within the multi story building at 22-40 Sir John Young Crescent to the north of the site. |

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Figure 2 Site Map, Measurement Locations and Surrounding Receivers



2 EXISTING ACOUSTIC ENVIRONMENT

This section of the report details the acoustic survey which has been undertaken at the site for the purpose of obtaining existing background noise levels such that noise emissions from the use of the roof top terrace can be assessed.

The ambient noise environment around the site includes the following:

1. Dominant noise levels resulting from road traffic noise on surrounding roadways including Sir John Young Crescent and others within the vicinity of the site which includes the Eastern Distributor to the north.
2. Rail noise resulting from movements along the railway line to the north of the site using the Bondi Junction railway Line
3. General environmental noise level including the use of The Domain which has major public recreational area servicing inner Sydney and is used for a range of activities from passive pursuits, to music concerts and festivals.

2.1 Unattended Noise Monitoring

As part of this assessment previously completed noise logging undertaken by Renzo Tonin and detailed in their report *50-58 Sir John Young Crescent, Woolloomooloo – use of rooftop terrace* dated 6 December 2024 has been used for the basis of existing noise levels on the site.

The Renzo Tonin noise logging was undertaken at the site, including the location detailed in Figure 1 above. Noise logging was conducted at the between the 28th November and 6th December 2022, details of the noise logging is included in Appendix B. The noise logger data undertaken by Renzo Tonin includes that which has been conducted in accordance with AS1055 and the NSW EPA *Noise Policy for Industry*. The charts present each 24-hour period and show the LA1, LA10, LAeq and LA90 noise levels for the corresponding 15-minute periods. This data has been filtered to remove periods affected by adverse weather conditions based on weather information.

This monitor was used to establish criteria for noise emissions (i.e., to determine the noise level representative of the nearest noise sensitive receiver locations to the proposed development).

The location of the noise logger is shown in Figure 2. The noise logger was positioned such that it did not require façade corrections.

Charts presenting summaries of the measured daily noise data are attached to this report in Appendix B. Noise Descriptors & Terminology

Environmental noise constantly varies in level with time. Therefore, it is necessary to measure environmental noise in terms of quantifiable time periods and statistical descriptors. Typically, environmental noise is measured over 15 minute periods and relevant statistical descriptors of the fluctuating noise are determined to quantify the measured level.

Noise (or sound) consists of minute fluctuations in atmospheric pressure capable of detection by human hearing. Noise levels are expressed in terms of decibels, abbreviated as dB or dBA, the “A” indicating that the noise levels have been frequency weighted to approximate the characteristics of normal human hearing. Because noise is measured using a logarithmic scale, ‘normal’ arithmetic does not apply, e.g., adding two sound sources of equal values result in an increase of 3dB (i.e., 60 dBA plus 60 dBA results in 63 dBA). A change of 1 dB or 2 dB in the sound level is difficult for most people to detect, whilst a 3 dB – 5 dB change corresponds to a small but noticeable change in loudness. A 10 dB change roughly corresponds to a doubling or halving in loudness.

The most relevant environmental noise descriptors are the LAeq, LA1, LA10 and LA90 noise levels. The LAeq noise level represents the “equivalent energy average noise level”. This parameter is derived by integrating the noise level measured over the measurement period. It represents the level that the fluctuating noise with the same acoustic energy would be if it were constant over the measured time period.

The LA1, LA10 and LA90 levels are the levels exceeded for 1%, 10% and 90% of the sample period. These levels can be considered as the maximum noise level, the average repeatable maximum and average repeatable minimum noise levels, respectively.

Specific acoustic terminology is used in this assessment report. An explanation of common acoustic terms is included as Appendix A.

2.2 Unattended Noise Monitoring Results

2.2.1 Results in accordance with the NSW EPA Noise Policy for Industry (NPI) 2017 (RBL's)

In order to assess the potential noise impacts of the development on nearby sensitive receivers the measured background noise data was processed in accordance with the Environmental Protection Authority (EPA) *Noise Policy for Industry* (NPI) and the City of Sydney Council DCP.

The Rating Background Noise Level (RBL) is the background noise level used for assessment purposes at the nearest potentially affected receiver. It is the 90th percentile of the daily background noise levels during each assessment period, being day, evening and night. RBL levels LA90 (15minute) and LAeq noise levels are presented in Table 1, which includes the summary of the results included in the Renzo Tonin noise logging previously undertaken at the site.

Table 1 Summary of Noise Logging Undertaken at the Site

Measurement Location	Daytime ¹ 7:00 am to 6:00 pm		Evening ¹ 6:00 pm to 10:00 pm		Night-time ¹ 10:00 pm to 7:00 am	
	LA90 ² (dB(A))	LAeq ³ (dB(A))	LA90 ² (dB(A))	LAeq ³ (dB(A))	LA90 ² (dB(A))	LAeq ³ (dB(A))
Roof Top of 50-58 Sir John Young Crescent, Woolloomooloo	52	57	52	57	47	53
<i>Note 1: For Monday to Saturday, Daytime 7:00 am – 6:00 pm; Evening 6:00 pm – 10:00 pm; Night-time 10:00 pm – 7:00 am. On Sundays and Public Holidays, Daytime 8:00 am – 6:00 pm; Evening 6:00 pm – 10:00 pm; Night-time 10:00 pm – 8:00 am</i> <i>Note 2: The LA90 noise level is representative of the "average minimum background sound level" (in the absence of the source under consideration), or simply the background level.</i> <i>Note 3: The LAeq is the energy average sound level. It is defined as the steady sound level that contains the same amount of acoustical energy as a given time-varying sound.</i>						

The measured spectrum noise levels recorded at the site and included in the Renzo Tonin report are summarised in the table below.

Table 2 Measured Spectrum Noise Levels

Time Period	Parameter	Octave Band Centre Frequency, Hz (dB)									Overall dB
		31.5	63	125	250	500	1k	2k	4k	8k	
Daytime (7:00 am – 6:00 pm)	Measured L _{Z90}	61	60	57	52	49	48	42	33	21	52
Evening (6:00 pm – 8:00 pm)	Measured L _{Z90}	59	59	57	51	49	48	42	33	21	52

The assessment of noise from the use of the roof top has included noise logging previously completed by Renzo Tonin Associates for the site. The noise logger location includes that which is deemed acceptable for the assessment of the site including a location to the east of the roof top, which is screened from Sir John Young Crescent.

Based on the location of the roof top of potentially worst affected receivers include those located within the existing multi-story residential towers to the south of the site and can be seen within the noise modelling included within this report. As such the noise logger location represents a location which is representative for the potential noise impacts resulting from the activity noise resulting from the proposed use of the roof top area.

It is noted that the receiver located to the east of the site, including the residential terraces are located within close proximity to the movement of traffic on the roadways including Sir John Young Crescent and Crown Street. The location of the noise logging included a location on the roof of the building which includes additional distance from the roadways.

3 ACOUSTIC CRITERIA

The acoustic criteria which have been adopted for this assessment are outlined below.

The proposal includes the use of a communal rooftop which does not include a liquor licensed premise. The City of Sydney DCP 2012 does not include specific acoustic requirements for the use of external areas such as that proposed in the application for the roof top of the building at 50-58 Sir John Young Crescent, Woolloomooloo.

Based on previous experience with projects within the City of Sydney Council the application of the entertainment noise level requirements include criteria which would be suitable for the assessment of potential noise emissions resulting from the use of the roof top area. Details of the relevant City of Sydney Council entertainment noise criteria are included in this section of the report.

3.1 Entertainment Noise Emissions Requirements

The criteria for Entertainment Noise level commonly used by the City of Sydney Council are reproduced below. This criterion is applicable for the assessment of activity noise emissions from the use of areas of the proposed roof top area proposed for the 50-58 Sir John young Crescent, Woolloomooloo building.

(1) NOISE - ENTERTAINMENT

- (a) *The $L_{Aeq, 15 \text{ minute}}$ noise level from the use must not exceed the background noise level ($L_{A90, 15 \text{ minute}}$) in any octave band (reference frequency 31.5 Hz to 8 kHz inclusive) by more than 5dB between 7.00am and 12.00 midnight when assessed at the boundary of any residential accommodation or tourist and visitor accommodation.*
- (b) *The $L_{Aeq, 15 \text{ minute}}$ noise level from the use must not exceed the background noise level ($L_{A90, 15 \text{ minute}}$) in any octave band (reference frequency 31.5 Hz to 8 kHz inclusive) between 12.00 midnight and 7.00am when assessed at the boundary of any residential accommodation or tourist and visitor accommodation.*
- (c) *Notwithstanding (a) above, the $L_{Aeq, 15 \text{ minute}}$ noise level from the use must not exceed the greater of the following levels between 7am and 12 midnight inside any habitable room of a residential*

accommodation or tourist and visitor accommodation, or at any time in an affected commercial premises:

- (i) The existing internal $L_{A90, 15 \text{ minute}}$ (from external sources excluding the use) in any octave band (reference frequency 31.5 Hz to 8 kHz inclusive). Or,
 - (ii) If the $L_{Z90, 15 \text{ minute}}$ background level is below the hearing threshold curve (T_f - Table 1 of ISO 226 : 2003) in an above octave band, the lowest audible sound level (L_p) of the T_f curve in that octave band shall become that octave's $L_{Zeq 15 \text{ minute}}$ noise criteria level.
- (d) Notwithstanding (b) above, the $L_{A1 15 \text{ minute}}$ noise level from the use must not exceed the greater of the following sound pressure levels inside any habitable room between 12 midnight and 7am inside any habitable room of an affected residential accommodation or tourist and visitor accommodation:
- (i) The existing internal $L_{A90, 15 \text{ minute}}$ (from external sources excluding the use) minus 10 dB in any octave band (reference frequency 31.5 Hz to 8 kHz inclusive) inside a habitable room of an affected residential accommodation or tourist and visitor accommodation. Or,
 - (ii) If the $L_{Z90, 15 \text{ minute}}$ minus 10 dB level is below the hearing threshold curve (T_f - Table 1 of ISO 226 : 2003) in an above octave band, the lowest audible sound level (L_p) of the T_f curve in that octave band shall become that octave's $L_{Z1 15 \text{ minute}}$ noise criteria level.

Note: L_{eq} , L_{01} , and L_{90} , metrics and 'A' (weightings) are as per the definitions in the standard AS1055-20148. 'Z' means unweighted noise. An internal L_{A90} level must be determined in the absence of noise emitted by the use and be sufficiently representative of the receiver in a low noise level quiet state. External L_{A90} levels for planning must be established as per the long-term methodology in Fact Sheet B of the NPfI unless otherwise agreed by the City's Area Planning Manager.

Reason

To protect the acoustic amenity of surrounding properties.

3.1.1 Project Relevant Entertainment External Noise Emission Criteria

For external noise emissions, octave band spectral criteria for each assessment period have been summarised in Table 3 below. This assessment applies the evening period criteria (the more stringent criteria) for all assessment times.

Table 3 City of Sydney Council Entertainment Noise Emission Criteria – L_{Zeq} (15 minutes) – External Residential Criteria

Time Period	Parameter ¹	Octave Band Centre Frequency, Hz (dB(Z))									Overall dB(A)
		31.5	63	125	250	500	1k	2k	4k	8k	
Daytime (7:00 am to 8:00 pm)	Surrounding Residential Receivers										
	Measured Lz90 (15 minute) ¹	59	59	57	51	49	48	42	33	21	52
	Criteria LzEq (15minute)	59	59	57	51	49	48	42	33	21	52
Note 1: The Lz90 noise level is representative of the "average minimum background sound level" (in the absence of the source under consideration), or simply the background level.											

4 ACOUSTIC ASSESSMENT

This section of the report details the assessment of noise emissions from the use of the proposed roof top area including compliance with the relevant project requirements detailed in Section 3 above.

4.1 Entertainment Noise Emissions – Roof Top Area

A detailed assessment of noise emissions resulting from the use of the proposed roof top terrace has been undertaken including noise modelling of the proposed layout included in Figure 1 above.

Details of the assessment of noise resulting from the roof top areas are included in this section of the report.

4.1.1 Assumption Regarding the Proposed Roof Top

As part of the acoustic assessment of the proposed roof top area, the following assumptions have been incorporated regarding the noise sources and source noise levels:

- It is assumed that there are a maximum of people using the rooftop will include the following:
 - o Up to 50 people using the general area, with 1 in 3 talking at any one time and evenly spread over the roof top (totalling 17 people talking at once) in the form of an area source.
 - For the purpose of this assessment, it is assumed that a single person speaking with a raised voice has a Sound Power Level (L_w) of 68 dB(A) for a male voice. This has been formulated in accordance with the published noise levels from Klark Teknik (*The Audio System Designer Technical Reference*, Chapman Partnership);
 - Source height of 1.5 m.
 - o In addition to the point above, up to 12 people using the exercise and wellness activities area (to be used for activities such as yoga, stretching and the like) with 1 in 4 talking simultaneously and evenly spaced over the wellness area (totalling 3 people talking at once) in the form of an area source.
 - For the purpose of this assessment, it is assumed that a single person speaking with a raised voice has a Sound Power Level (L_w) of 68 dB(A) for a normal male voice, including a reduced noise level based on the passive use of the wellness area.
 - Source height of 1.5 m.
- The roof top area is not to include the playing of amplified music or speech.
- The roof top area is not to be used for large gatherings including organised events or the like.
- Access to roof top will include the use of the internal stairs and lift as detailed in Figure 1.
- Noise generating scenarios are modelled on a worst case 15 minute period;

The external noise predictions are inclusive of the recommended mitigation measures (detailed within Section 4.1.4)

The modelled noise source levels are presented in Table 4 below and are illustrated in Figure 3.

Table 4 Noise source levels

Source / description	Octave band frequency, Hz (dB(Z))								Overall (dB(A))
	63	125	250	500	1 k	2 k	4 k	8 k	
Rooftop terrace (50 people (1/3 talking))	68	69	79	81	74	70	66	61	81
Rooftop wellness area (yoga / exercise lawn) (12 people (1/4 talking))	61	62	72	74	67	63	59	54	73

Figure 3 Source layout

4.1.2 Predictive Noise Modelling

Predictive noise modelling in this report was carried out using the ISO 9613 algorithm within Soundplan V9.1. The noise modelling software package was specifically used, as the 3D computational model of the site and surrounding area allows the terrain undulations, building heights and locations and noise source positions to be specifically modelled. In addition to terrain, buildings and noise sources, the noise model also includes ground absorption and receiver locations.

In addition, the following assumptions have been incorporated regarding the noise modelling:

- Noise generating scenarios are modelled on a worst case 15 minute period;
- Terrain has been sourced from the NSW Land and Property Information database Six Maps;
- Ground Absorption has been included in the model with the entire model having an absorption factor of 0, indicative of the surrounding hard surfaces;
- On site and surrounding buildings have been included in the model;
- The assessment for residential receivers has been conducted against the criteria as set out in Table 3, including the proposed hours of use including 7:00 am to 8.00 pm on any day of the week.

4.1.3 Predicted Noise Levels

Noise emission predictions for the cumulative noise from the proposed Rooftop area are provided below. Noise contours of the modelled L_{Zeq} (15 minute) level, including possible maximum capacity simultaneous use of the rooftop. For multilevel receivers (R03 and R04) only the worst affected floor is presented for brevity.

Table 5 Predicted Noise Emission Levels to Receiver 1

Parameter	Octave Band Centre Frequency, Hz dB(Z)									Overall dB(A)
	31.5	63	125	250	500	1k	2k	4k	8k	
Receiver 1 (Residential)										
Predicted L _{zeq} (15 minute) Noise Levels	21	23	24	33	35	28	24	19	11	34
Criteria (L _{z90} + 0 dB)	59	59	57	51	49	48	42	33	21	52
Compliance ¹	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Note 1: It is assumed that should compliance with the external noise criteria be achieved, then compliance with the internal noise criteria set out in the City of Sydney DCP will be achieved.										

Table 6 Predicted Noise Emission Levels to Receiver 2

Parameter	Octave Band Centre Frequency, Hz dB(Z)									Overall dB(A)
	31.5	63	125	250	500	1k	2k	4k	8k	
Receiver 2 (Residential)										
Predicted L _{zeq} (15 minute) Noise Levels	26	27	28	35	34	25	18	11	<10	33
Criteria (L _{Z90} + 0 dB)	59	59	57	51	49	48	42	33	21	52
Compliance ¹	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Note 1: It is assumed that should compliance with the external noise criteria be achieved, then compliance with the internal noise criteria set out in the City of Sydnev DCP will be achieved.										

Table 7 Predicted Noise Emission Levels to Receiver 3

Parameter	Octave Band Centre Frequency, Hz dB(Z)									Overall dB(A)
	31.5	63	125	250	500	1k	2k	4k	8k	
Receiver 3 (Residential)										
Predicted L _{Ze} (15 minute) Noise Levels	20	22	22	31	32	23	17	<10	<10	31
Criteria (L _{Z90} + 0 dB) (Level 01)	59	59	57	51	49	48	42	33	21	52
Compliance ¹	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Note 1: It is assumed that should compliance with the external noise criteria be achieved, then compliance with the internal noise criteria set out in the City of Sydney DCP will be achieved.										

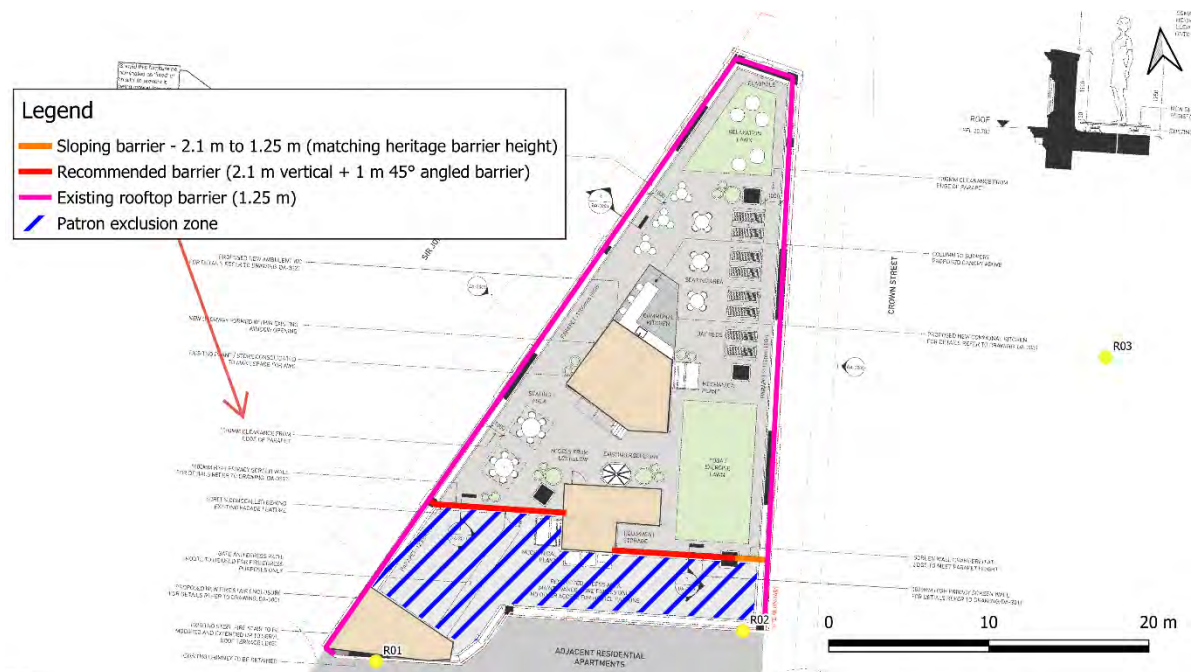
Table 8 Predicted Noise Emission Levels to Receiver 4

Parameter	Octave Band Centre Frequency, Hz dB(Z)									Overall dB(A)
	31.5	63	125	250	500	1k	2k	4k	8k	
Receiver 3 (Residential)										
Predicted L _{zeq} (15 minute) Noise Levels	13	15	18	29	33	26	22	17	<10	33
Criteria (L _{Z90} + 0 dB) (Level 08)	59	59	57	51	49	48	42	33	21	52
Compliance ¹	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Note 1: It is assumed that should compliance with the external noise criteria be achieved, then compliance with the internal noise criteria set out in the City of Sydney DCP will be achieved.										

4.1.4 Operational Noise Control Measures

Noise levels from the proposed use of the roof top, including possible maximum capacity, have been predicted to be compliant at all surrounding residential receivers, provided the following recommendations are implemented:

- The hours of use of the roof top will include 7:00 am to 8:00 pm on any day of the week.
- No playing of amplified music or speech on the roof top at any time.
- The roof top is not to be used for organised gatherings or events.
- Access to the rooftop is to include the stairs detailed within the drawings of the roof top area.
- The use of the southern portion of the rooftop is not to be used, including restriction by a physical barrier in the location detailed in the figure below.

Figure 4 Patron exclusion zone and recommended barrier

- The barrier indicated in Figure 4 above (red), must be 2.1 m high (vertical) and 1 m long at 45° (angled inwards towards the north). The barrier must be constructed of solid construction, this could include 12 mm thick Perspex panel (other suitable materials include: 9 mm FC sheet, 10.38 mm glazing). An example of the angled section is shown in Figure 5 below.
- The barrier indicated in Figure 4 above (orange), must be 2.1 m high sloping down to match the height of the existing heritage barrier. The barrier must be constructed of solid construction, this could include 12 mm thick Perspex panel (other suitable materials include: 9 mm FC sheet, 10.38 mm glazing).

Figure 5 Example of angled barrier section



On the assumption the recommendations outlined are incorporated, compliance with the acoustic project criteria outlined in Table 3 above will be achieved.

4.2 Predictive Noise Modelling Equipment

Predictive noise modelling in this report was carried out using the Soundplan 9.1 noise modelling. The noise modelling software package was specifically used, as the 3D computational model of the site and surrounding area allows the terrain undulations, building heights and locations and noise source positions to be specifically modelled. In addition to terrain, buildings and noise sources, the Soundplan model also includes ground absorption and receiver locations.

Details of the results of the noise modelling resulting from the entertainment noise levels are included in the figure below, which includes the details of the modelling complete during the proposed operational periods.

Figure 6 Rooftop source layout - I

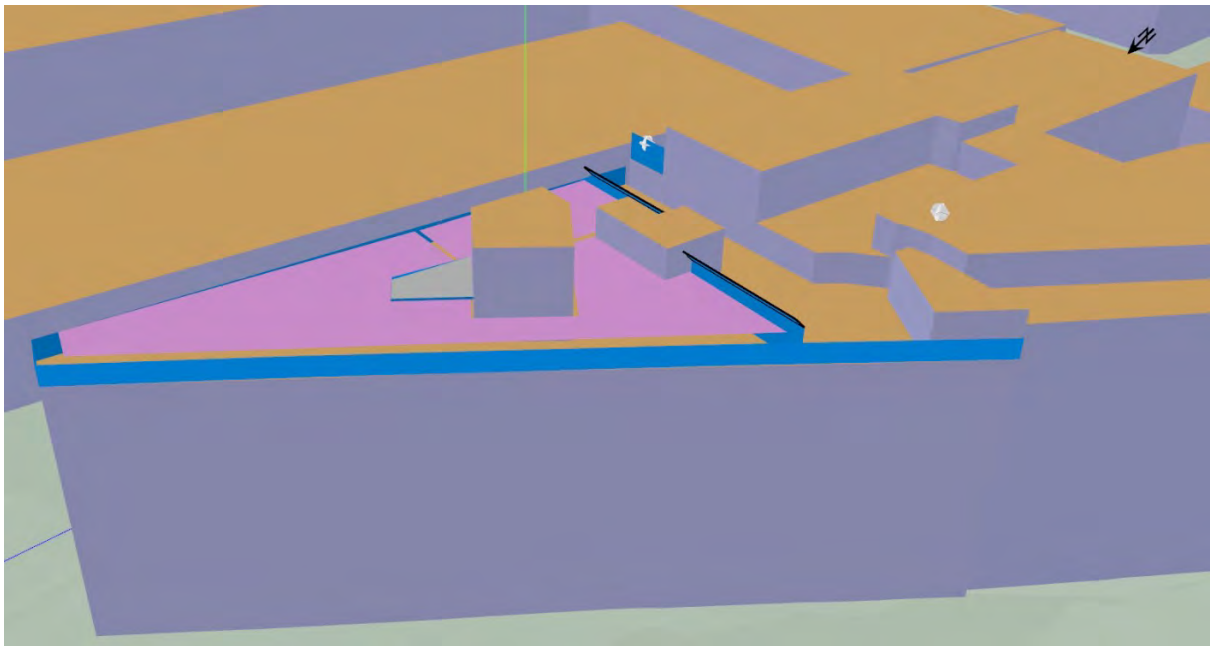


Figure 7 Rooftop source layout - II

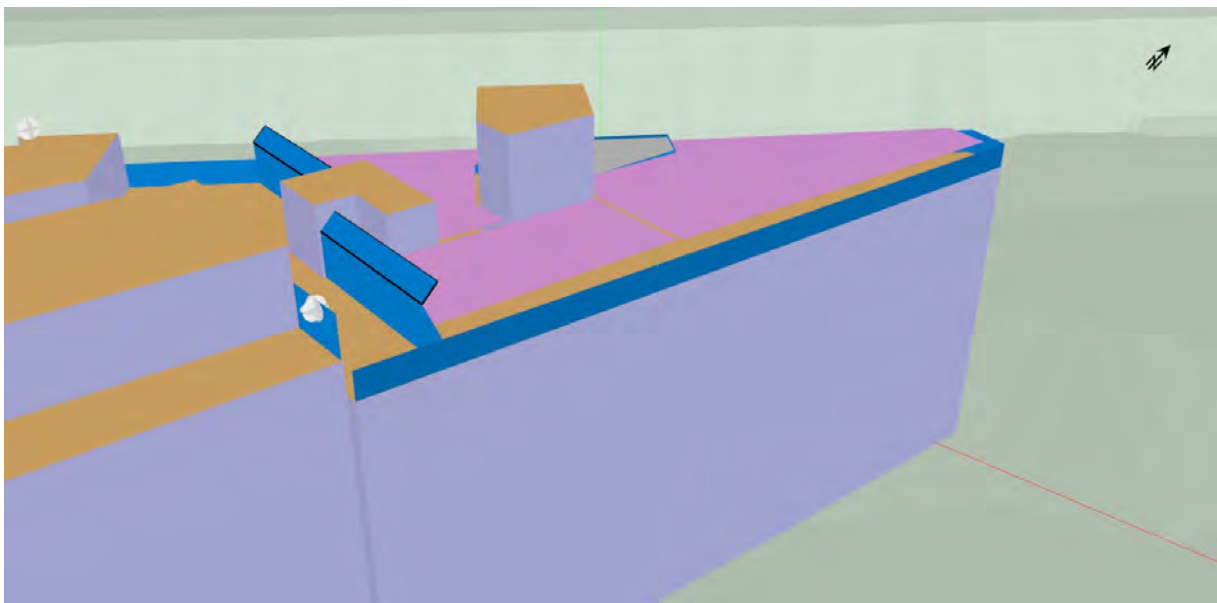


Figure 8 Noise contours (1.5 m above rooftop) – I (broadband A weighted)

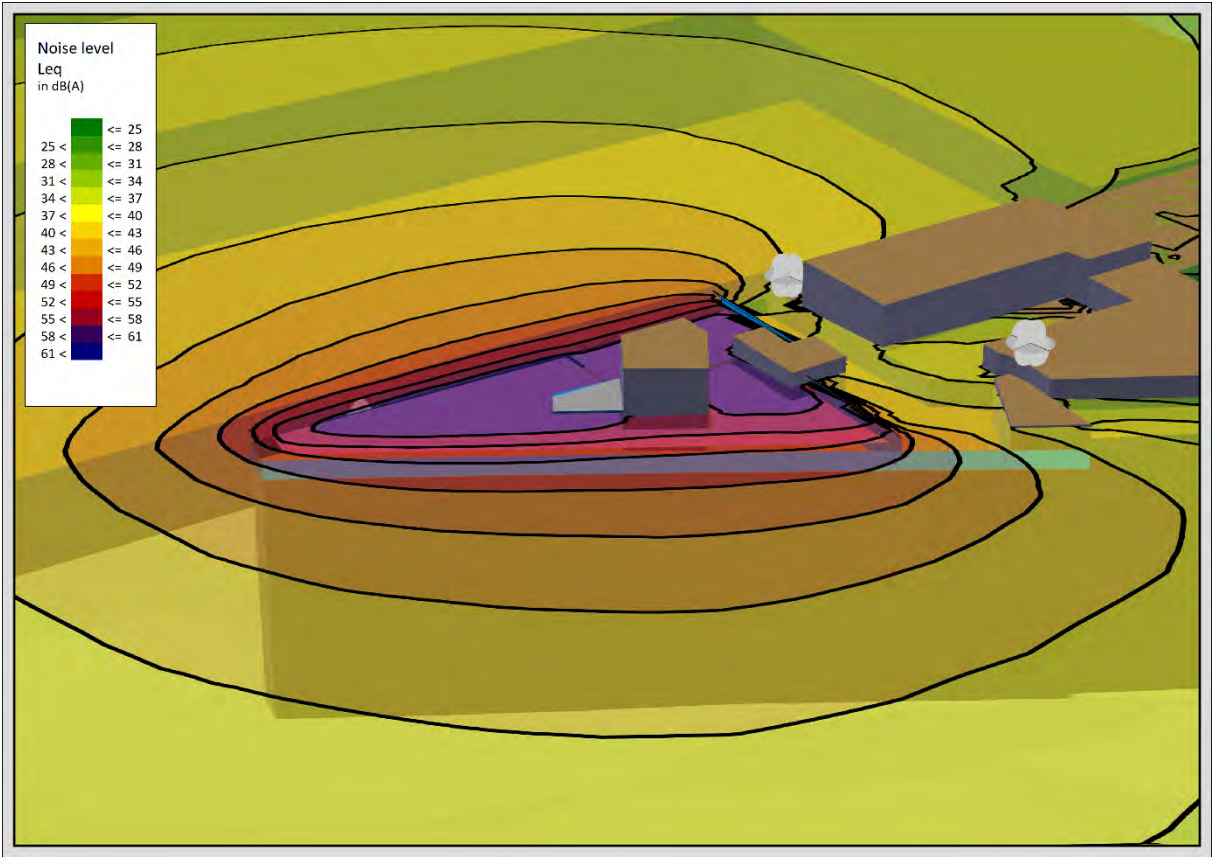


Figure 9 Cross section – I (broadband A weighted)

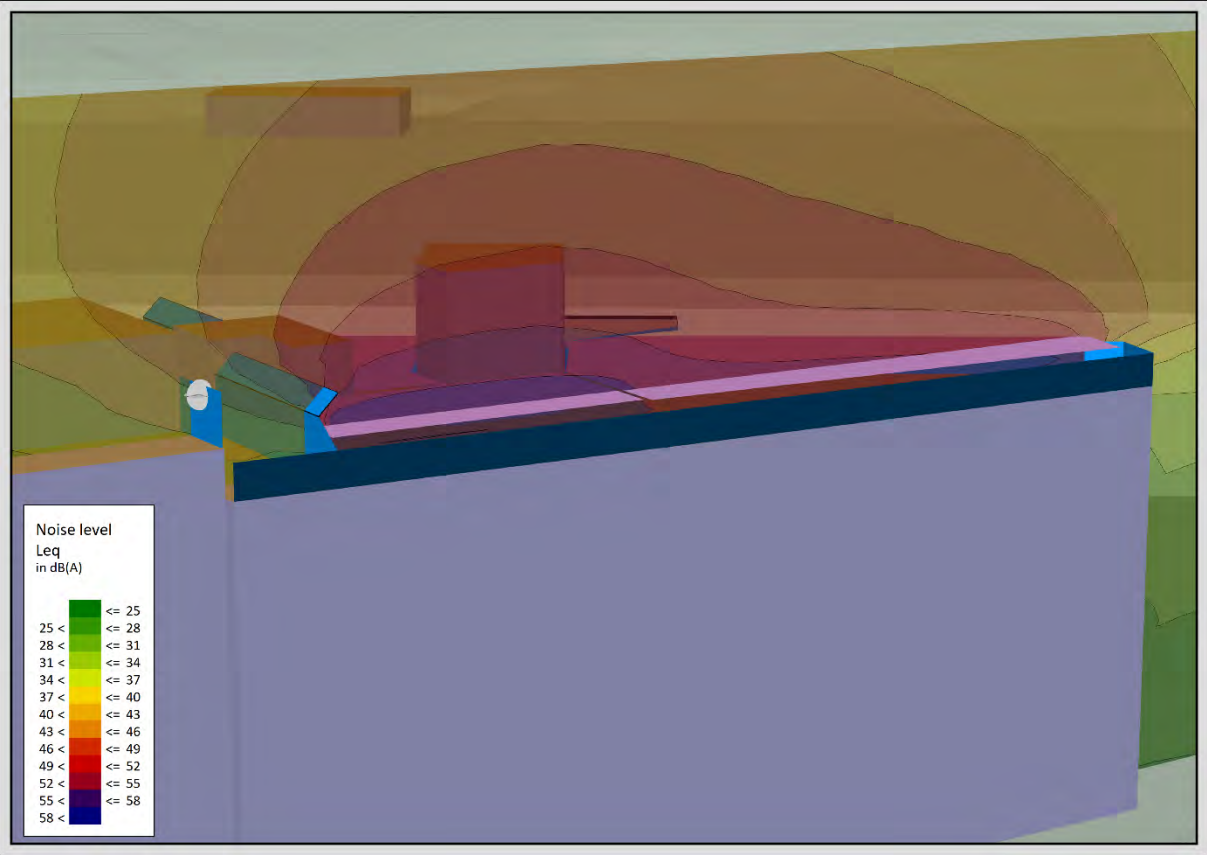


Figure 10 Cross section – II (broadband A weighted)

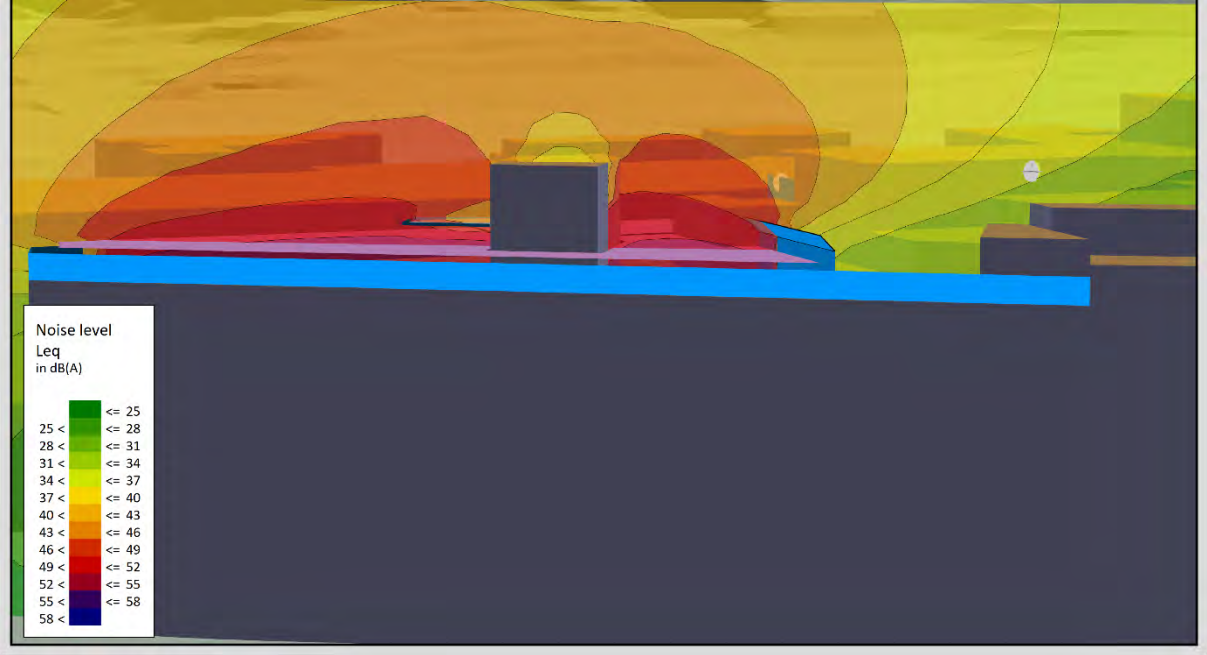
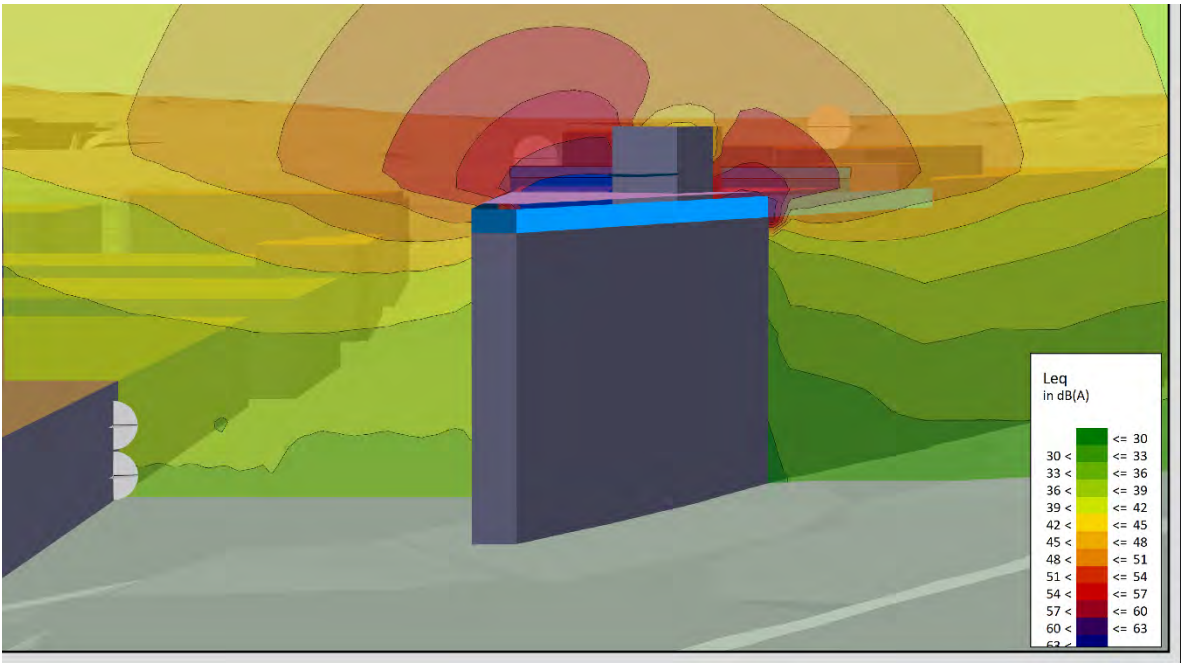


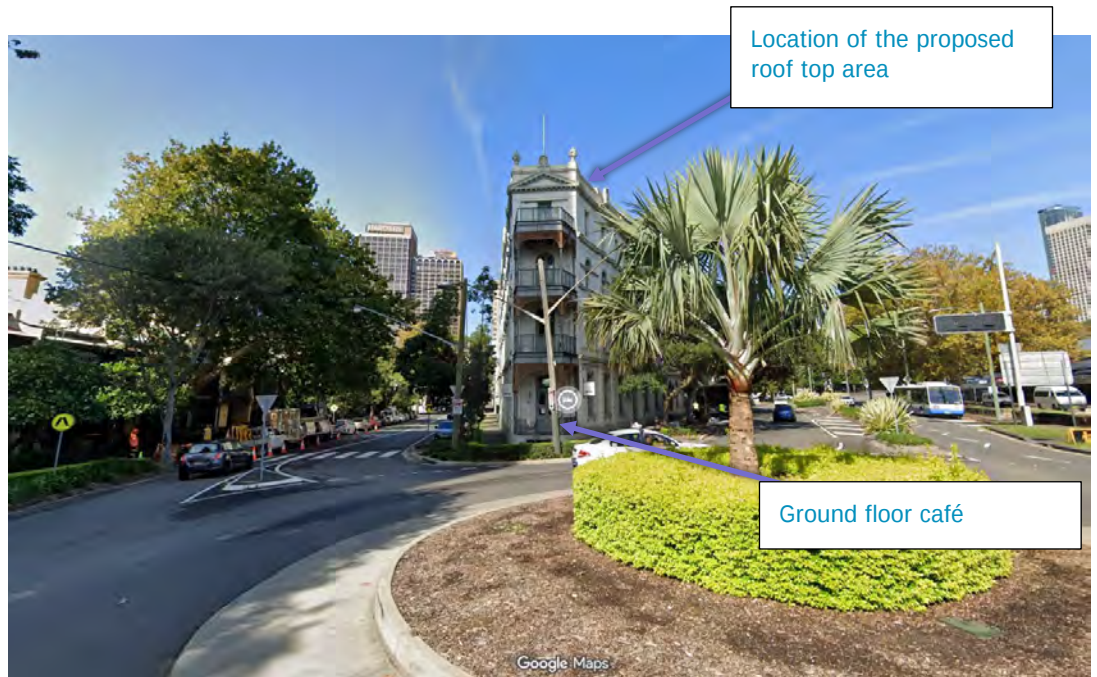
Figure 11 Cross section – III (broadband A weighted)



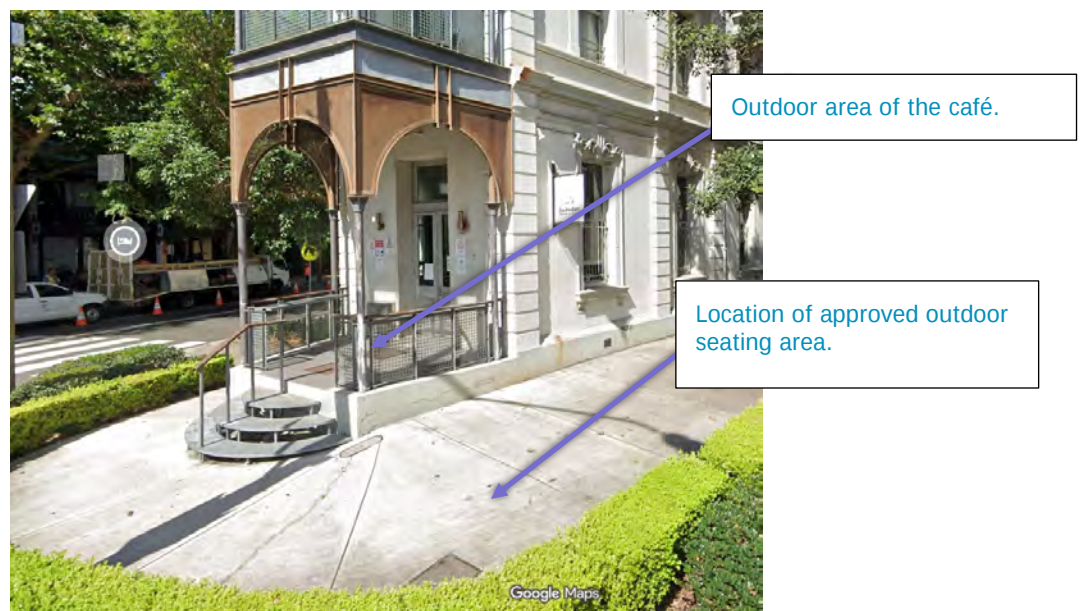
5 CUMULATIVE NOISE LEVELS

An assessment for the potential for cumulative noise levels resulting from the use of the roof top area and the ground floor café has been undertaken.

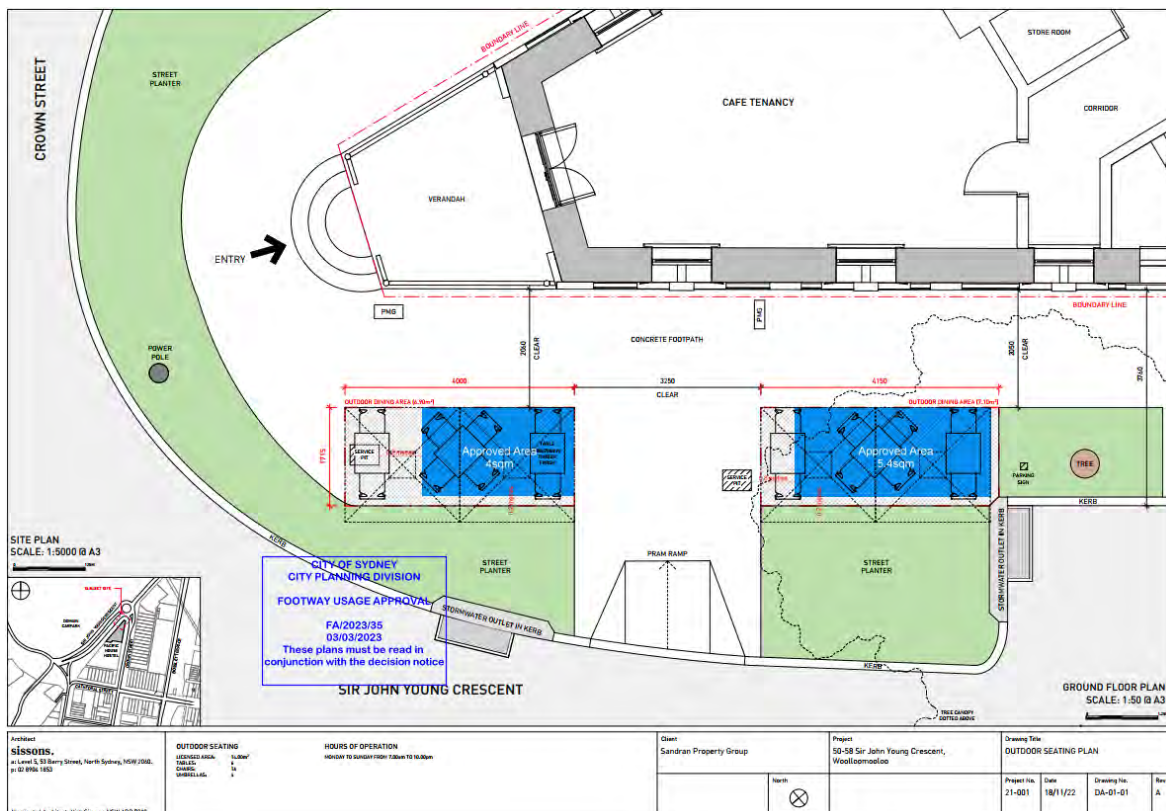
The café within the building is located on the ground floor of the building on the corner of Sire John Young Crescent and Crown Street, see the figure below.



The café includes a small external area, including that detailed in the figure below.



1. The café includes activities and uses which are contained within the building, including that detailed in the figures above.
2. The use of the café includes operations which are operating within current project approvals.
3. The operational hours of the café includes the following:
 - a. 8am to 10pm Monday – Sunday
4. The location of the café includes a separation of 3 stories of the building, resulting is significant distance separations from the potential noise sources.
5. The location of all receivers to the noise sources generated within the café include those which will not result as similar times and providing each source complies with the existing and proposed mitigations within the roof top proposal cumulative noise levels will comply with relevant criteria as required.
6. The café is located on the Ground floor of the project which also includes close proximity to the traffic movements of the roadways, including Sir John Young Crescent and Crown Street.
7. The café includes an approved area for external seating including those including that detailed within the figure below and approved within the *Notice of Determination FA/2023/35*.



Based on the details included in the assessment the cumulative noise levels of the proposed roof top and the café will be achieved.

6 CONCLUSIONS

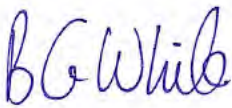
Pulse White Noise Acoustics Pty Ltd (PWNA) has undertaken an acoustic assessment for the proposed roof top area located at 50-58 Sir John Crescent, Woolloomooloo.

As part of the assessment and investigation into the potential for noise emissions resulting from the use of the rooftop terrace has been undertaken, including Soundplan noise modelling.

Based on the details included in this assessment compliance with the relevant noise emission criteria including the City of Sydney Council Entertainment noise level will be achieved.

Based on this assessment the proposed rooftop terrace will be acoustically acceptable and noise emissions will comply with the relevant City of Sydney Council requirements.

Regards,

A handwritten signature in blue ink that reads "Ben White".

Ben White

Director

PULSE WHITE NOISE ACOUSTICS PTY LTD



APPENDIX A: ACOUSTIC TERMINOLOGY

The following is a brief description of the acoustic terminology used in this report.

<i>Sound power level</i>	The total sound emitted by a source																						
<i>Sound pressure level</i>	The amount of sound at a specified point																						
<i>Decibel [dB]</i>	The measurement unit of sound																						
<i>A Weighted decibels [dB(A)]</i>	The A weighting is a frequency filter applied to measured noise levels to represent how humans hear sounds. The A-weighting filter emphasises frequencies in the speech range (between 1kHz and 4 kHz) which the human ear is most sensitive to, and places less emphasis on low frequencies at which the human ear is not so sensitive. When an overall sound level is A-weighted it is expressed in units of dB(A).																						
<i>Decibel scale</i>	The decibel scale is logarithmic in order to produce a better representation of the response of the human ear. A 3 dB increase in the sound pressure level corresponds to a doubling in the sound energy. A 10 dB increase in the sound pressure level corresponds to a perceived doubling in volume. Examples of decibel levels of common sounds are as follows: <table> <tr> <td>0dB(A)</td><td>Threshold of human hearing</td></tr> <tr> <td>30dB(A)</td><td>A quiet country park</td></tr> <tr> <td>40dB(A)</td><td>Whisper in a library</td></tr> <tr> <td>50dB(A)</td><td>Open office space</td></tr> <tr> <td>70dB(A)</td><td>Inside a car on a freeway</td></tr> <tr> <td>80dB(A)</td><td>Outboard motor</td></tr> <tr> <td>90dB(A)</td><td>Heavy truck pass-by</td></tr> <tr> <td>100dB(A)</td><td>Jackhammer/Subway train</td></tr> <tr> <td>110 dB(A)</td><td>Rock Concert</td></tr> <tr> <td>115dB(A)</td><td>Limit of sound permitted in industry</td></tr> <tr> <td>120dB(A)</td><td>747 take off at 250 metres</td></tr> </table>	0dB(A)	Threshold of human hearing	30dB(A)	A quiet country park	40dB(A)	Whisper in a library	50dB(A)	Open office space	70dB(A)	Inside a car on a freeway	80dB(A)	Outboard motor	90dB(A)	Heavy truck pass-by	100dB(A)	Jackhammer/Subway train	110 dB(A)	Rock Concert	115dB(A)	Limit of sound permitted in industry	120dB(A)	747 take off at 250 metres
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30dB(A)	A quiet country park																						
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90dB(A)	Heavy truck pass-by																						
100dB(A)	Jackhammer/Subway train																						
110 dB(A)	Rock Concert																						
115dB(A)	Limit of sound permitted in industry																						
120dB(A)	747 take off at 250 metres																						
<i>Frequency [f]</i>	The repetition rate of the cycle measured in Hertz (Hz). The frequency corresponds to the pitch of the sound. A high frequency corresponds to a high pitched sound and a low frequency to a low pitched sound.																						
<i>Ambient sound</i>	The all-encompassing sound at a point composed of sound from all sources near and far.																						
<i>Equivalent continuous sound level [L_{eq}]</i>	The constant sound level which, when occurring over the same period of time, would result in the receiver experiencing the same amount of sound energy.																						
<i>Reverberation</i>	The persistence of sound in a space after the source of that sound has been stopped (the reverberation time is the time taken for a reverberant sound field to decrease by 60 dB)																						
<i>Air-borne sound</i>	The sound emitted directly from a source into the surrounding air, such as speech, television or music																						
<i>Impact sound</i>	The sound emitted from force of one object hitting another such as footfalls and slamming cupboards.																						
<i>Air-borne sound isolation</i>	The reduction of airborne sound between two rooms.																						
<i>Sound Reduction Index [R] (Sound Transmission Loss)</i>	The ratio the sound incident on a partition to the sound transmitted by the partition.																						
<i>Weighted sound reduction index [R_w]</i>	A single figure representation of the air-borne sound insulation of a partition based upon the R values for each frequency measured in a laboratory environment.																						
<i>Level difference [D]</i>	The difference in sound pressure level between two rooms.																						



<i>Normalised level difference $[D_n]$</i>	The difference in sound pressure level between two rooms normalised for the absorption area of the receiving room.
<i>Standardised level difference $[D_{nT}]$</i>	The difference in sound pressure level between two rooms normalised for the reverberation time of the receiving room.
<i>Weighted standardised level difference $[D_{nT,w}]$</i>	A single figure representation of the air-borne sound insulation of a partition based upon the level difference. Generally used to present the performance of a partition when measured in situ on site.
C_{tr}	A value added to an R_w or $D_{nT,w}$ value to account for variations in the spectrum.
<i>Impact sound isolation</i>	The resistance of a floor or wall to transmit impact sound.
<i>Impact sound pressure level $[L_i]$</i>	The sound pressure level in the receiving room produced by impacts subjected to the adjacent floor or wall by a tapping machine.
<i>Normalised impact sound pressure level $[L_n]$</i>	The impact sound pressure level normalised for the absorption area of the receiving room.
<i>Weighted normalised impact sound pressure level $[L_{n,w}]$</i>	A single figure representation of the impact sound insulation of a floor or wall based upon the impact sound pressure level measured in a laboratory.
<i>Weighted standardised impact sound pressure level $[L'_{nT,w}]$</i>	A single figure representation of the impact sound insulation of a floor or wall based upon the impact sound pressure level measured in situ on site.
C_i	A value added to an L_{nW} or $L'_{nT,w}$ value to account for variations in the spectrum.
<i>Energy Equivalent Sound Pressure Level $[L_{A,eq,T}]$</i>	'A' weighted, energy averaged sound pressure level over the measurement period T.
<i>Percentile Sound Pressure Level $[L_{Ax,T}]$</i>	'A' weighted, sound pressure that is exceeded for percentile x of the measurement period T.

*Definitions of a number of terms have been adapted from Australian Standard AS1633:1985 "Acoustics – Glossary of terms and related symbols"



APPENDIX B: RENZO TONIN UNATTENDED NOISE MONITORING RESULTS

Roof of 50-58 Sir John Young Crescent

Background & Ambient Noise Monitoring Results - NSW 'Noise Policy for Industry', 2017

Periods with insufficient results excluded	L _{A90} Background Noise Levels ⁴			L _{Aeq} Ambient Noise Levels		
Date	Day ¹	Evening ²	Night ³	Day ¹	Evening ²	Night ³
Monday-28-November-2022	-	51	47	-	56	52
Tuesday-29-November-2022	53	51	46	56	55	51
Wednesday-30-November-2022	53	52	47	57	56	52
Thursday-01-December-2022	52	52	48	56	58	53
Friday-02-December-2022	52	53	48	58	58	53
Saturday-03-December-2022	51	54	48	57	59	55
Sunday-04-December-2022	51	52	47	56	57	54
Monday-05-December-2022	53	-	48	57	-	53
Tuesday-06-December-2022	-	-	-	-	-	-
Representative Weekday⁵	53	52	47	57	57	52
Representative Weekend⁵	51	53	47	57	58	54
Representative Week⁵	52	52	47	57	57	53

Notes:

- Day is 7:00am to 6:00pm on all days except Sundays and Public Holidays when it is 8:00am to 6:00pm
- Evening is 6:00pm to 10:00pm
- Night is the remaining periods
- Assessment Background Level (ABL) for individual days
- Rating Background Level (RBL) for L_{A90} and logarithmic average for L_{Aeq}
- L_{Aeq} is calculated in the free field. 2.5dB is subtracted from results if logger is placed at façade
- Number in brackets represents the measured (actual) RBL value, which is below the minimum policy value of 30 dB(A) during the evening or night period or 35 dB(A) during the day period.

Roof of 50-58 Sir John Young Crescent

Road / Rail Noise Monitoring Results (at one metre from façade)

Periods with insufficient results excluded	L _{Aeq} Noise Levels		L _{Aeq 1hr} Noise Levels			
Date	Day ¹	Night ²	Day - Up ⁴	Day - Low ⁵	Night - Up ⁴	Night - Low ⁵
Monday-28-November-2022	-	54	-	-	56	51
Tuesday-29-November-2022	58	54	59	57	56	51
Wednesday-30-November-2022	59	55	60	59	57	52
Thursday-01-December-2022	59	55	60	58	57	53
Friday-02-December-2022	60	56	61	58	59	52
Saturday-03-December-2022	60	57	63	57	61	52
Sunday-04-December-2022	59	56	60	57	60	51
Monday-05-December-2022	59	55	61	57	58	53
Tuesday-06-December-2022	-	-	-	-	-	-
Representative Weekday³	59	55	60	58	57	52
Representative Weekend³	59	57	61	57	60	52
Representative Week³	59	55	60	57	58	52

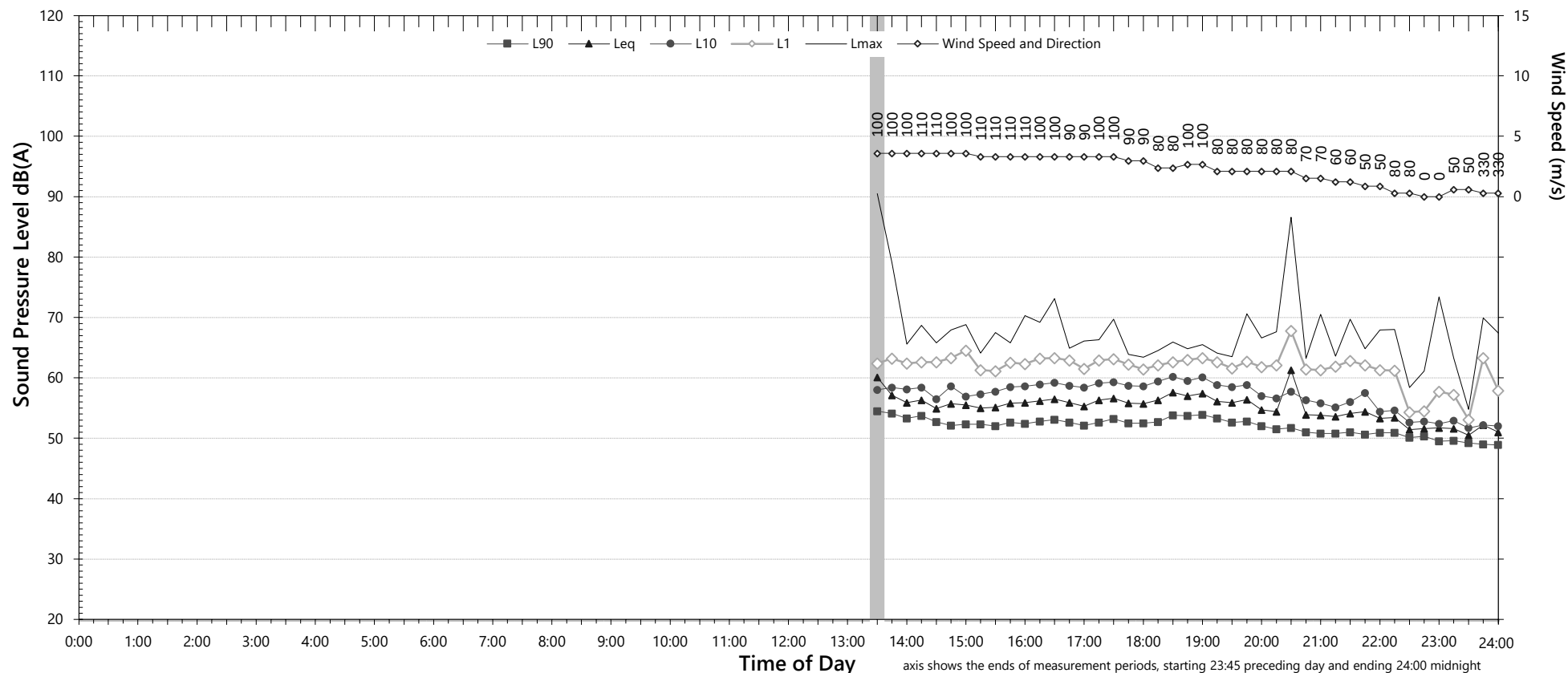
Notes:

- Day is 7:00am to 10:00pm
- Night is 10:00pm to 7:00am
- Median of daily L_{Aeq}
- Upper 10th percentile L_{Aeq 1hr}
- Lower 10th percentile L_{Aeq 1hr}
- Values are calculated at the façade. 2.5dB is added to results if logger is placed in the free field

Unattended Noise Monitoring Results

Roof of 50-58 Sir John Young Crescent

Monday, 28 November 2022



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day ²	Evening ³	Night ^{4,5}
L _{A90} ABL	-	51	47
L _{Aeq}	-	56	52

Night Time Maximum Noise Levels		(see note 7)	
L _{AFMax} (Range)	68	to	74
L _{AFMax} - L _{Aeq} (Range)	18	to	21

Notes:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.

3. "Evening" is the period from 6pm till 10pm

6. Graphed data measured in free-field; tabulated results facade corrected

4. "Night" relates to the remaining periods

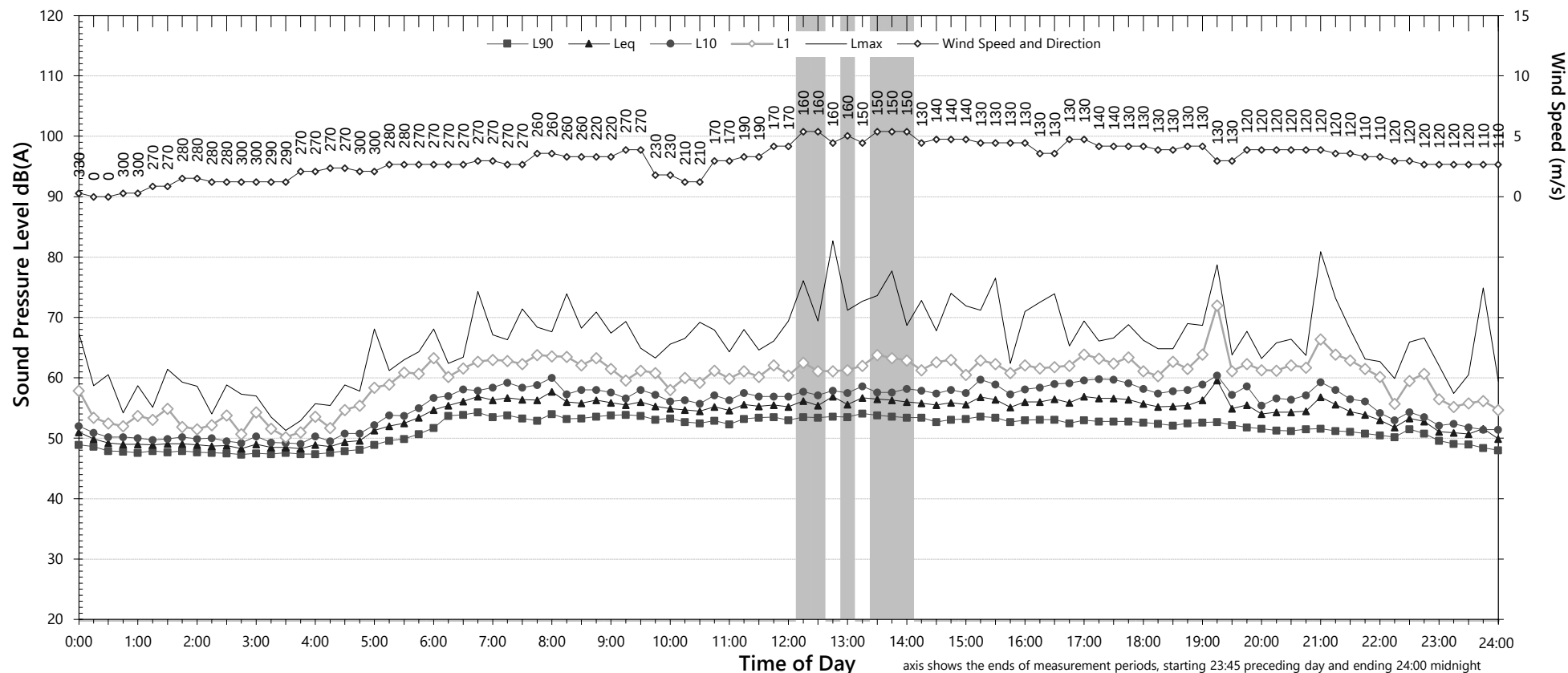
7. 1-hour values for L_{AFMax} are shown only where L_{AFMax} > 65dB(A) and where L_{AFMax} - L_{Aeq} ≥ 15dB(A)

NSW Road Noise Policy (1m from facade) (see note 6)		
Descriptor	Day	Night ⁵
	7am-10pm	10pm-7am
L _{Aeq} 15 hr and L _{Aeq} 9 hr	-	54
L _{Aeq} 1hr upper 10 percentile	-	56
L _{Aeq} 1hr lower 10 percentile	-	51

Unattended Noise Monitoring Results

Roof of 50-58 Sir John Young Crescent

Tuesday, 29 November 2022



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day ²	Evening ³	Night ^{4,5}
L _{A90} ABL	53	51	46
L _{Aeq}	56	55	51

Night Time Maximum Noise Levels		(see note 7)	
L _{AFMax} (Range)	67	to	77
L _{AFMax} - L _{Aeq} (Range)	15	to	24

Notes:

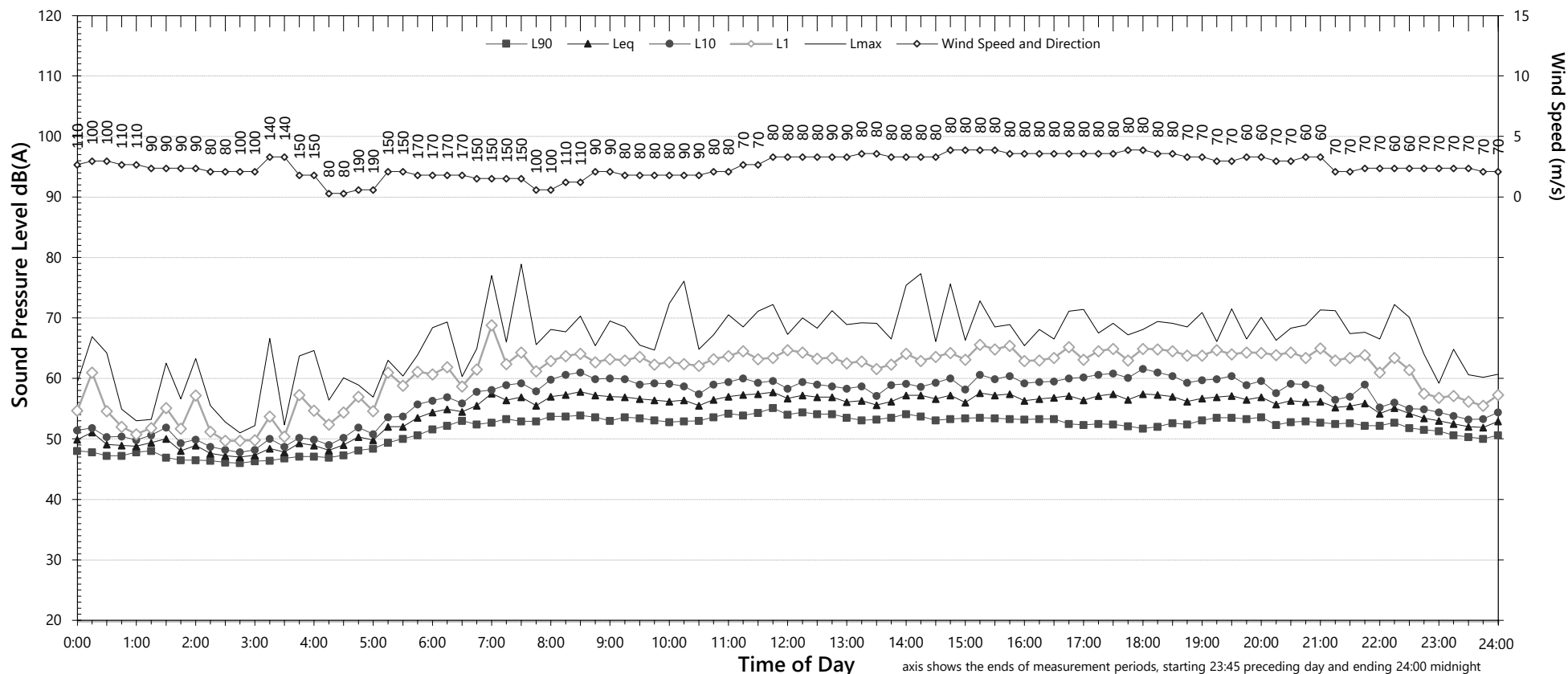
- Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
- "Day" is the period from 8am till 6pm on Sundays and 7am till 6pm on other days
- "Evening" is the period from 6pm till 10pm
- "Night" relates to the remaining periods
- Graphed data measured in free-field; tabulated results facade corrected
- 1-hour values for L_{AFMax} are shown only where L_{AFMax} > 65dB(A) and where L_{AFMax} - L_{Aeq} ≥ 15dB(A)

NSW Road Noise Policy (1m from facade) (see note 6)		
Descriptor	Day	Night ⁵
	7am-10pm	10pm-7am
L _{Aeq} 15 hr and L _{Aeq} 9 hr	58	54
L _{Aeq} 1hr upper 10 percentile	59	56
L _{Aeq} 1hr lower 10 percentile	57	51

Unattended Noise Monitoring Results

Roof of 50-58 Sir John Young Crescent

Wednesday, 30 November 2022



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day ²	Evening ³	Night ^{4,5}
L _{A90} ABL	53	52	47
L _{Aeq}	57	56	52
Night Time Maximum Noise Levels (see note 7)			
L _{AFMax} (Range)	67	to	76
L _{AFMax} - L _{Aeq} (Range)	17	to	21

Notes:

- Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
- "Evening" is the period from 6pm till 10pm
- "Night" relates to the remaining periods
- Graphed data measured in free-field; tabulated results facade corrected

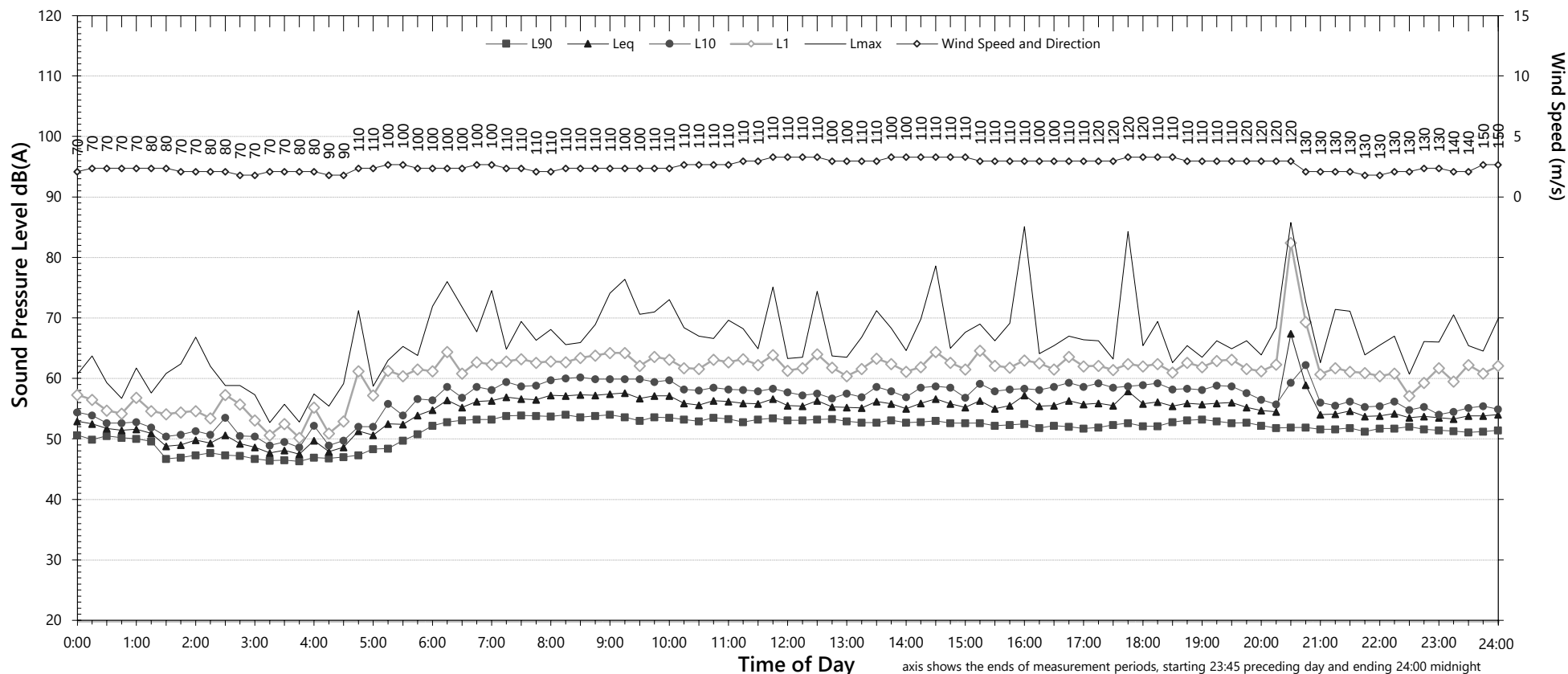
NSW Road Noise Policy (1m from facade) (see note 6)		
Descriptor	Day	Night ⁵
	7am-10pm	10pm-7am
L _{Aeq} 15 hr and L _{Aeq} 9 hr	59	55
L _{Aeq} 1hr upper 10 percentile	60	57
L _{Aeq} 1hr lower 10 percentile	59	52

- "Day" is the period from 8am till 6pm on Sundays and 7am till 6pm on other days
- "Night" relates to period from 10pm on this graph to morning on the following graph.
- 1-hour values for L_{AFMax} are shown only where L_{AFMax} > 65dB(A) and where L_{AFMax} - L_{Aeq} ≥ 15dB(A)

Unattended Noise Monitoring Results

Roof of 50-58 Sir John Young Crescent

Thursday, 1 December 2022



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day ²	Evening ³	Night ^{4,5}
L _{A90} ABL	52	52	48
L _{Aeq}	56	58	53

Night Time Maximum Noise Levels		(see note 7)	
L _{AFMax} (Range)	67	to	72
L _{AFMax} - L _{Aeq} (Range)	16	to	21

Notes:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.

3. "Evening" is the period from 6pm till 10pm

6. Graphed data measured in free-field; tabulated results facade corrected

4. "Night" relates to the remaining periods

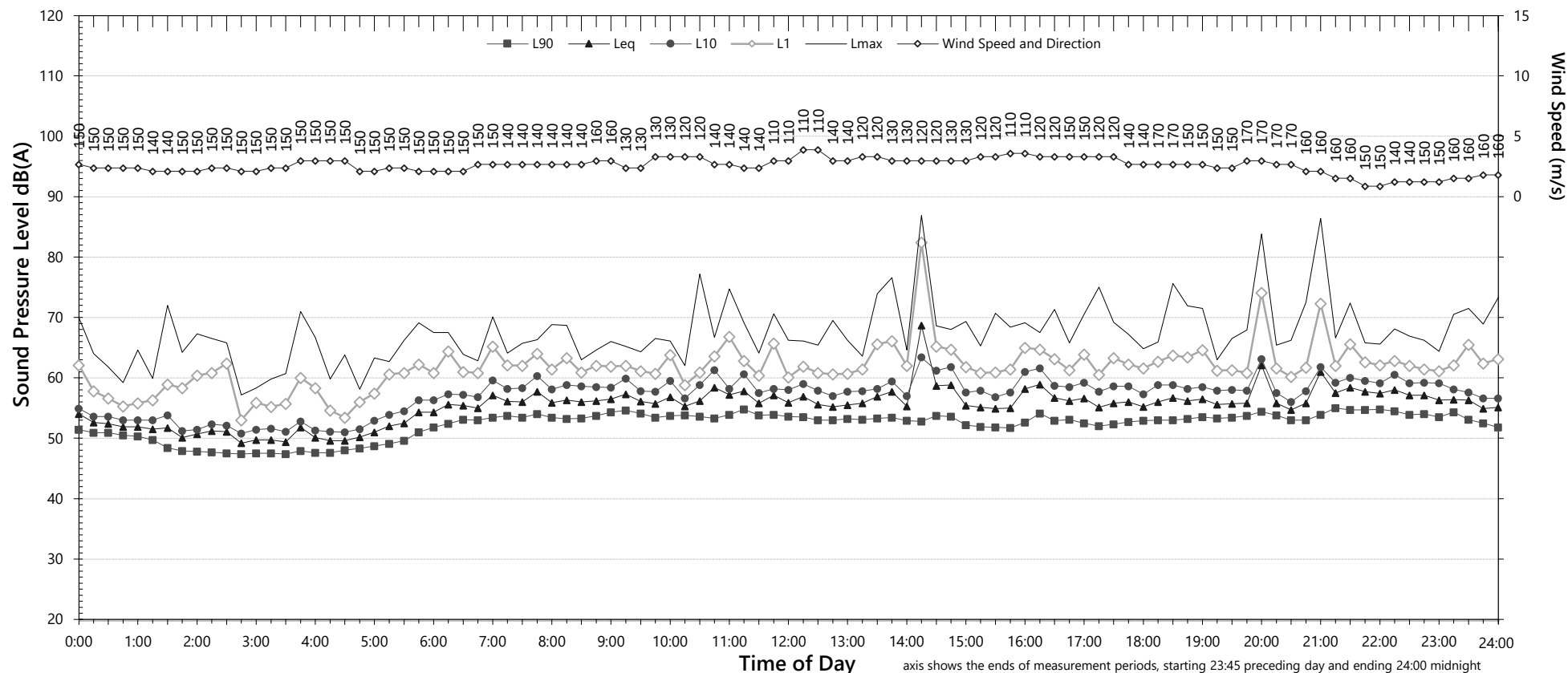
7. 1-hour values for L_{AFMax} are shown only where L_{AFMax} > 65dB(A) and where L_{AFMax} - L_{Aeq} ≥ 15dB(A)

NSW Road Noise Policy (1m from facade) (see note 6)		
Descriptor	Day	Night ⁵
	7am-10pm	10pm-7am
L _{Aeq} 15 hr and L _{Aeq} 9 hr	59	55
L _{Aeq} 1hr upper 10 percentile	60	57
L _{Aeq} 1hr lower 10 percentile	58	53

Unattended Noise Monitoring Results

Roof of 50-58 Sir John Young Crescent

Friday, 2 December 2022



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day ²	Evening ³	Night ^{4,5}
L _{A90} ABL	52	53	48
L _{Aeq}	58	58	53

Night Time Maximum Noise Levels		(see note 7)	
L _{AFMax} (Range)	66	to	73
L _{AFMax} - L _{Aeq} (Range)	17	to	19

Notes:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.

3. "Evening" is the period from 6pm till 10pm

6. Graphed data measured in free-field; tabulated results facade corrected

4. "Night" relates to the remaining periods

7. 1-hour values for L_{AFMax} are shown only where L_{AFMax} > 65dB(A) and where L_{AFMax} - L_{Aeq} ≥ 15dB(A)

NSW Road Noise Policy (1m from facade) (see note 6)		
Descriptor	Day	Night ⁵
	7am-10pm	10pm-7am
L _{Aeq} 15 hr and L _{Aeq} 9 hr	60	56
L _{Aeq} 1hr upper 10 percentile	61	59
L _{Aeq} 1hr lower 10 percentile	58	52

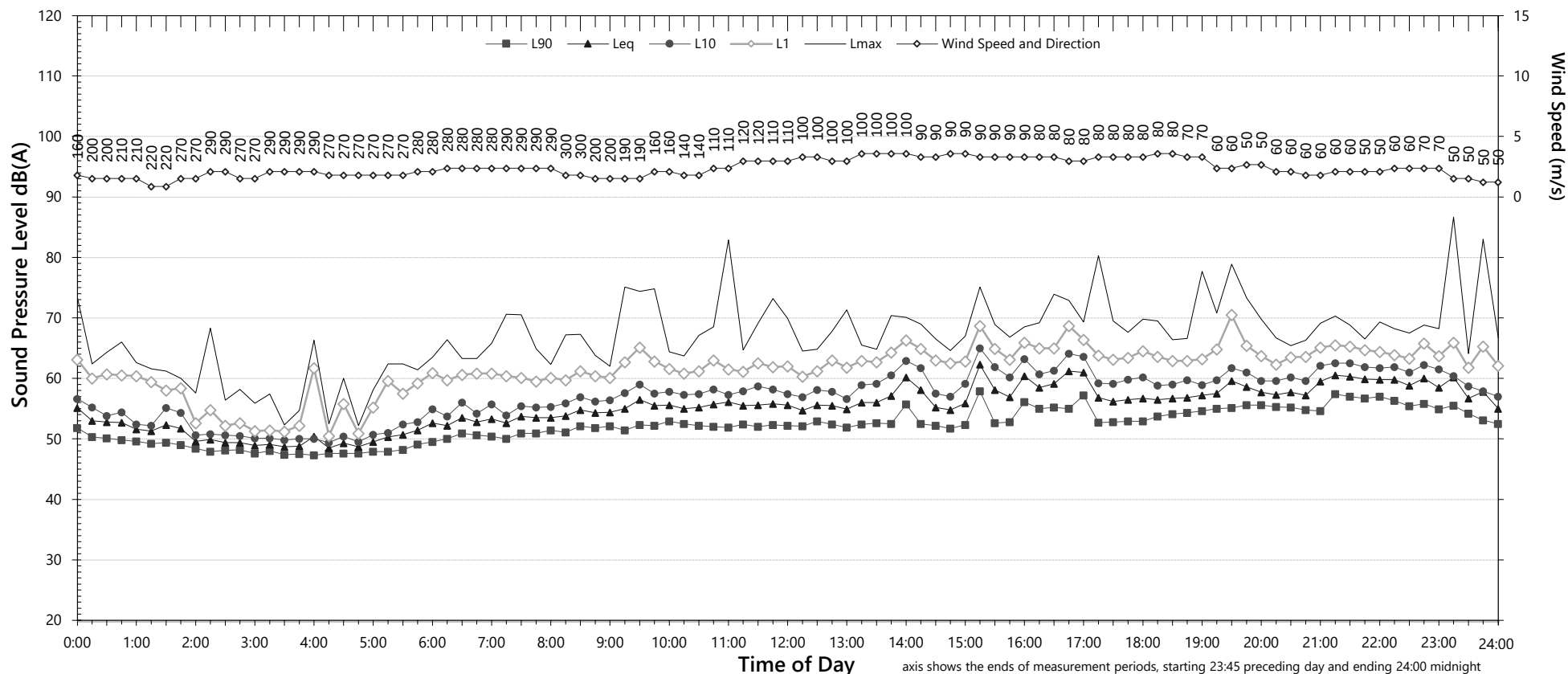
2. "Day" is the period from 8am till 6pm on Sundays and 7am till 6pm on other days

5. "Night" relates to period from 10pm on this graph to morning on the following graph.

Unattended Noise Monitoring Results

Roof of 50-58 Sir John Young Crescent

Saturday, 3 December 2022



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day ²	Evening ³	Night ^{4,5}
L _{A90} ABL	51	54	48
L _{Aeq}	57	59	55

Night Time Maximum Noise Levels		(see note 7)	
L _{AFMax} (Range)	67	to	90
L _{AFMax} - L _{Aeq} (Range)	15	to	34

Notes:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.

3. "Evening" is the period from 6pm till 10pm

6. Graphed data measured in free-field; tabulated results facade corrected

4. "Night" relates to the remaining periods

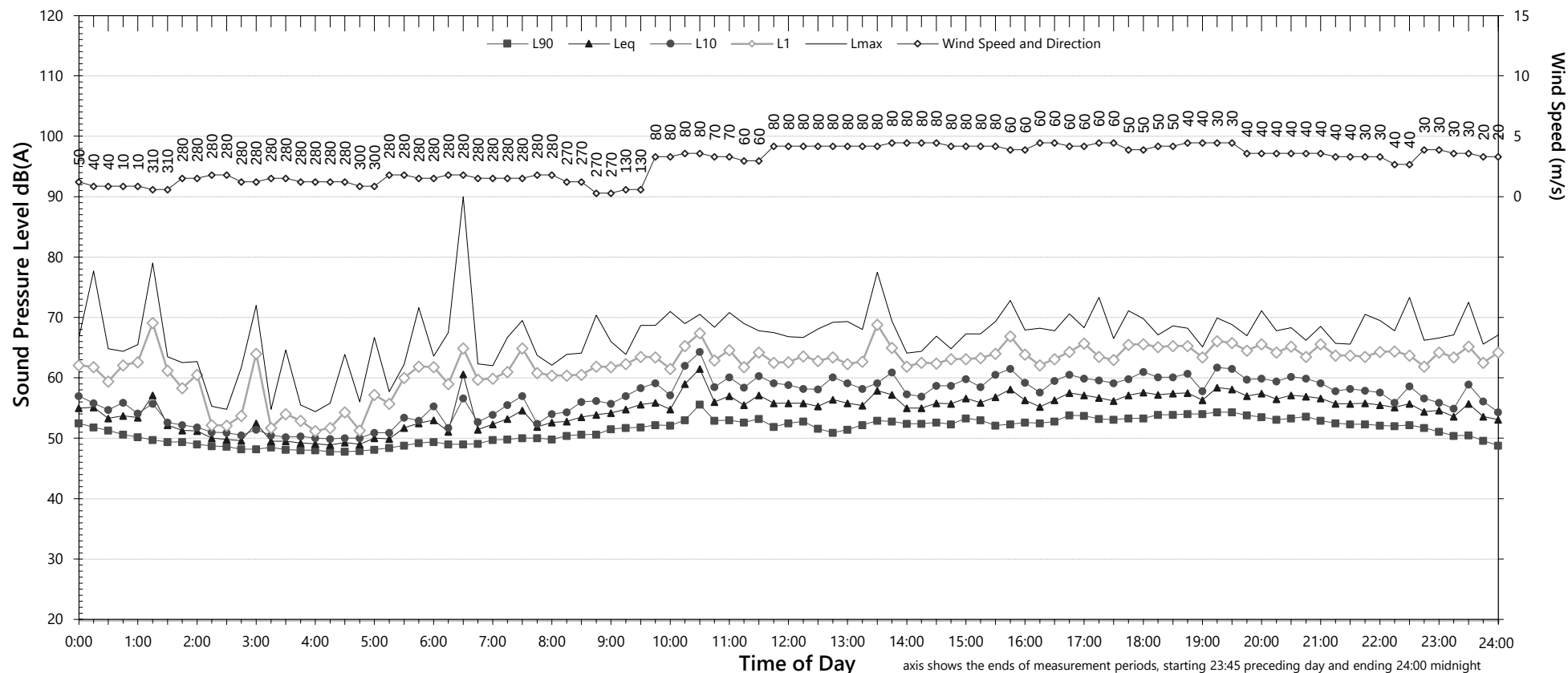
7. 1-hour values for L_{AFMax} are shown only where L_{AFMax} > 65dB(A) and where L_{AFMax} - L_{Aeq} ≥ 15dB(A)

NSW Road Noise Policy (1m from facade) (see note 6)		
Descriptor	Day	Night ⁵
	7am-10pm	10pm-7am
L _{Aeq} 15 hr and L _{Aeq} 9 hr	60	57
L _{Aeq} 1hr upper 10 percentile	63	61
L _{Aeq} 1hr lower 10 percentile	57	52

Unattended Noise Monitoring Results

Roof of 50-58 Sir John Young Crescent

Sunday, 4 December 2022



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day ²	Evening ³	Night ^{4,5}
L _{A90} ABL	51	52	47
L _{Aeq}	56	57	54

Night Time Maximum Noise Levels		(see note 7)	
L _{AFMax} (Range)	67	to	86
L _{AFMax} - L _{Aeq} (Range)	16	to	28

Notes:

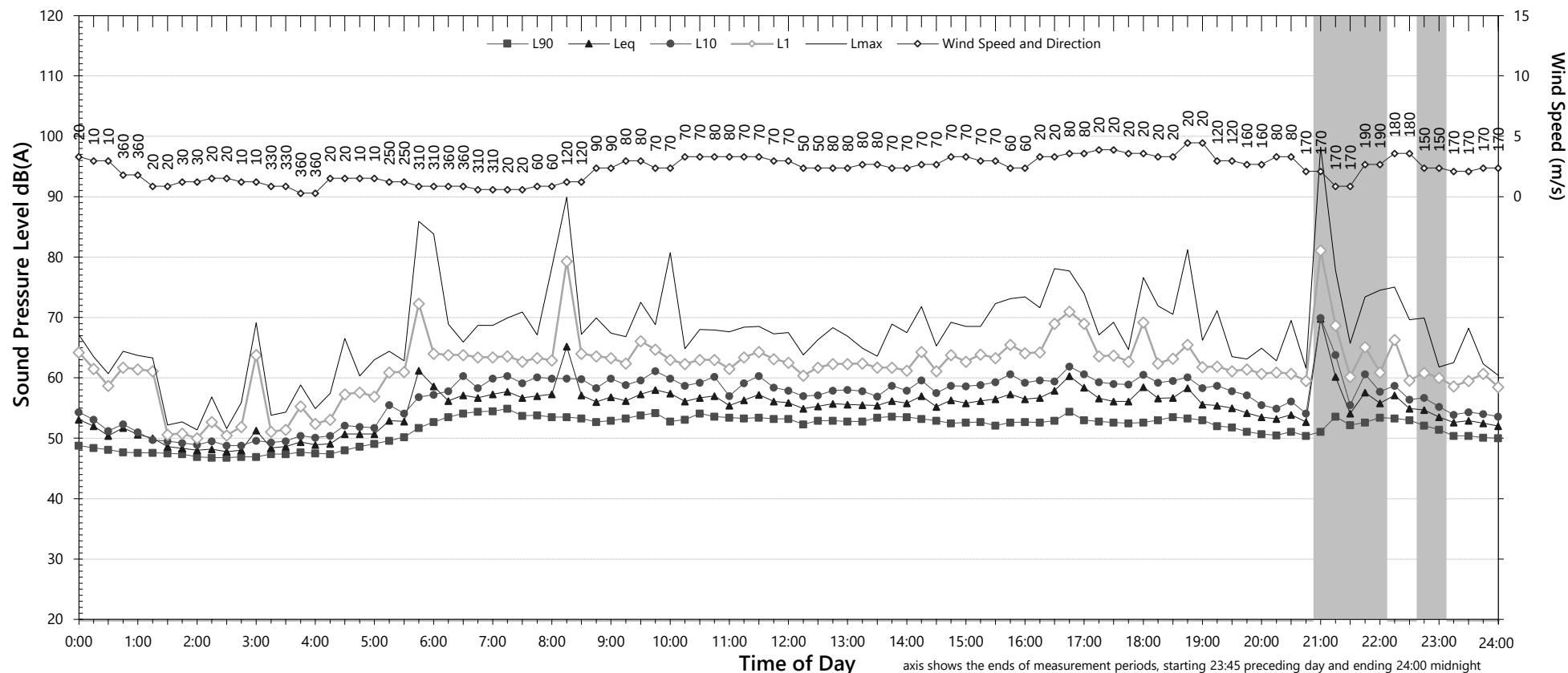
- Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
- "Day" is the period from 8am till 6pm on Sundays and 7am till 6pm on other days
- "Evening" is the period from 6pm till 10pm
- "Night" relates to the remaining periods
- Graphed data measured in free-field; tabulated results facade corrected
- 1-hour values for L_{AFMax} are shown only where L_{AFMax} > 65dB(A) and where L_{AFMax} - L_{Aeq} ≥ 15dB(A)

NSW Road Noise Policy (1m from facade) (see note 6)		
Descriptor	Day	Night ⁵
	7am-10pm	10pm-7am
L _{Aeq} 15 hr and L _{Aeq} 9 hr	59	56
L _{Aeq} 1hr upper 10 percentile	60	60
L _{Aeq} 1hr lower 10 percentile	57	51

Unattended Noise Monitoring Results

Roof of 50-58 Sir John Young Crescent

Monday, 5 December 2022



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day ²	Evening ³	Night ^{4,5}
L _{A90} ABL	53	-	48
L _{Aeq}	57	-	53

Night Time Maximum Noise Levels		(see note 7)	
L _{AFMax} (Range)	68	to	82
L _{AFMax} - L _{Aeq} (Range)	16	to	28

Notes:

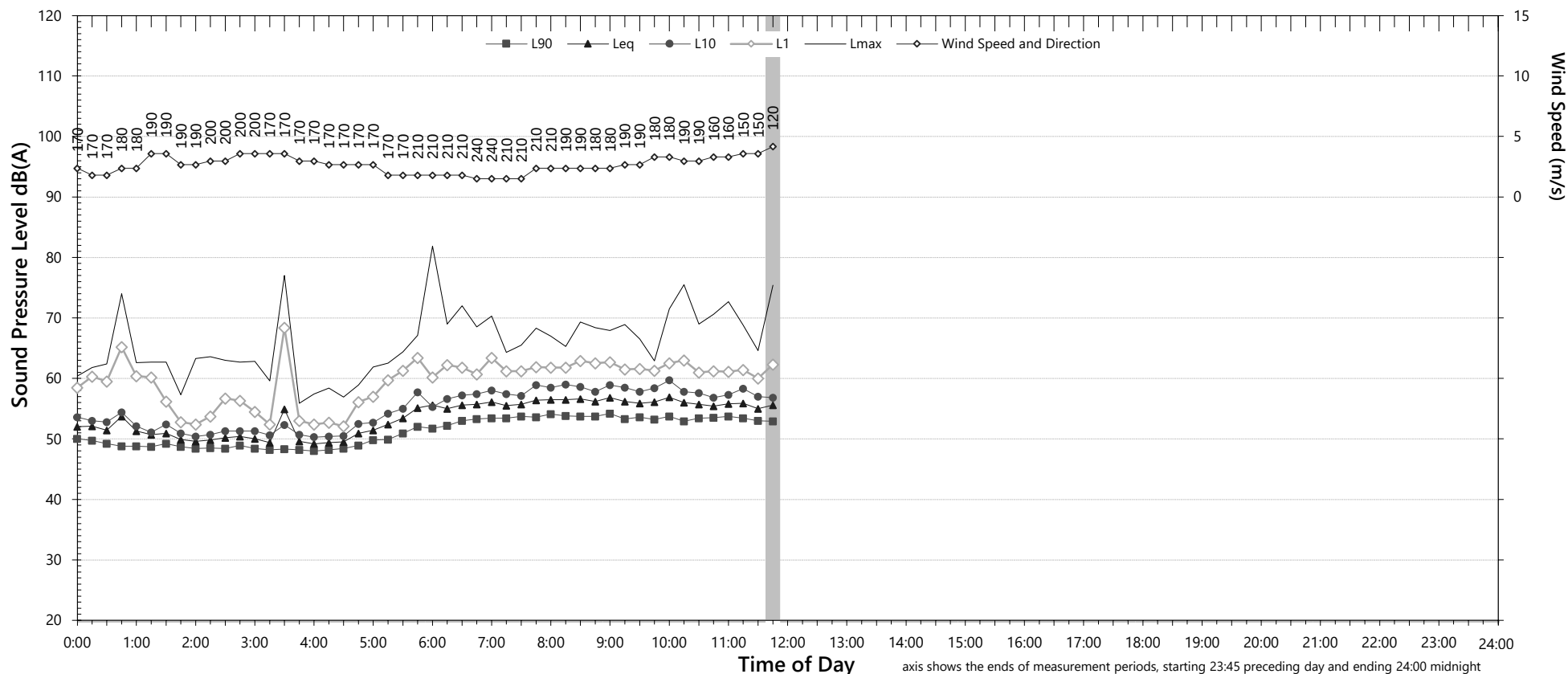
- Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
- "Day" is the period from 8am till 6pm on Sundays and 7am till 6pm on other days
- "Evening" is the period from 6pm till 10pm
- "Night" relates to the remaining periods
- "Night" relates to period from 10pm on this graph to morning on the following graph.
- Graphed data measured in free-field; tabulated results facade corrected
- 1-hour values for L_{AFMax} are shown only where L_{AFMax} > 65dB(A) and where L_{AFMax} - L_{Aeq} ≥ 15dB(A)

NSW Road Noise Policy (1m from facade) (see note 6)		
Descriptor	Day	Night ⁵
	7am-10pm	10pm-7am
L _{Aeq} 15 hr and L _{Aeq} 9 hr	59	55
L _{Aeq} 1hr upper 10 percentile	61	58
L _{Aeq} 1hr lower 10 percentile	57	53

Unattended Noise Monitoring Results

Roof of 50-58 Sir John Young Crescent

Tuesday, 6 December 2022



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day ²	Evening ³	Night ^{4,5}
L _{A90} ABL	-	-	-
L _{Aeq}	-	-	-

Night Time Maximum Noise Levels (see note 7)			
L _{AFMax} (Range)	-	to	-
L _{AFMax} - L _{Aeq} (Range)	-	to	-

Notes:

- Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
- "Day" is the period from 8am till 6pm on Sundays and 7am till 6pm on other days
- "Evening" is the period from 6pm till 10pm
- "Night" relates to the remaining periods
- Graphed data measured in free-field; tabulated results facade corrected
- 1-hour values for L_{AFMax} are shown only where L_{AFMax} > 65dB(A) and where L_{AFMax} - L_{Aeq} ≥ 15dB(A)

NSW Road Noise Policy (1m from facade) (see note 6)		
Descriptor	Day	Night ⁵
	7am-10pm	10pm-7am
L _{Aeq} 15 hr and L _{Aeq} 9 hr	-	-
L _{Aeq} 1hr upper 10 percentile	-	-
L _{Aeq} 1hr lower 10 percentile	-	-

MEMORANDUM



250116-50-58 SJYC, Woolloomooloo -Response to Comments-R1

TO: Kristy Hodgkinson

DATE: 1 December 2025

COMPANY: Hamptons

FROM: Ben White

50-58 Sir John Young Crescent, Woolloomooloo

SUBJECT: Acoustic Response to comments

CONFIDENTIALITY

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1 Introduction

This report details the acoustic supplementary report which includes the additional information and responses received for the proposed activation of the rooftop located at 50-58 Sir John Young Crescent, Woolloomooloo including the D/2025/268.

This supplementary report has been undertaken in response to the acoustic items, including the following:

1. The PWNA *50-58 Sir John Young Crescent, Woolloomooloo – Roof Top Terrace DA Acoustic Assessment* dated 24th March 2025 (DAAA).
2. The acoustic items included within the Council Responses to the application D/2025/268.

The acoustic responses to the submissions are included in this report.

2 Acoustic Response to Submissions

This section of the report includes the acoustic response to the submissions received from the City of Sydney council, including the follow:

1. Council Items – Deficient acoustic report
 - a. Inadequate noise monitoring location –

The assessment of noise from the use of the roof top has included noise logging previously completed by Renzo Tonin Associates for the site. The noise logger location includes that which is deemed acceptable for the assessment of the site including a location to the east of the roof top, which is screened from Sir John Young Crescent.

Based on the location of the roof top of potentially worst affected receivers include those located within the existing multi-story residential towers to the south of the site and can be seen within the noise modelling included within the DAAA. As such the noise logger location is representative for the potential noise emissions resulting from the use of the roof top area.

It is noted that the receiver located to the east of the site, including the residential terraces are located within close proximity to the movement of traffic on the roadways including Sir John Young Crescent and Crown Street. The location of the noise logging included a location on the roof of the building which includes additional distance from the roadways.

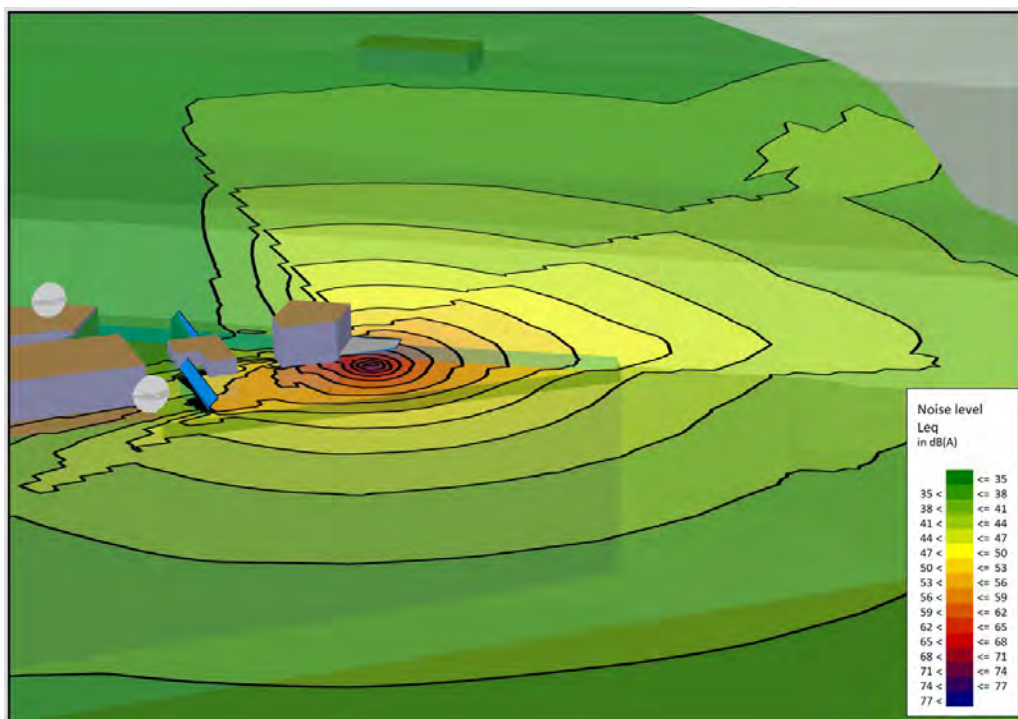
- b. Inadequate noise modelling-

Noise modelling of the roof top has included a plan noise source, including a noise levels spread over the entire roof top as detailed in 4.1.1 of the DAAA.

As part of the assessment noise modelling of the use of the roof top has been undertaken as represented within Figure 4, which clearly depicts the source noise levels located across the entire roof top, see below.



Councils' comments that noise modelling includes a single noise source adjusted to represent 50 persons is incorrect, in the event noise modelling has included a point source level the resulting noise model would have resulted in predictions similar to that in the figure below:



c. Noise criteria –

The acoustic assessment included within the DAAA has included the external noise level criteria.

A revised assessment which applies the internal noise level requirements to the external boundaries of receivers has been undertaken and is included in Revision 1 of the report which has been provided.

In the assumption that internal background noise levels result from ambient noise level ingress into buildings the assessment of internal noise level criteria at the external receiver locations compliance with the City of Sydney Council requirements would be achieved.

Details included within the revised DA Acoustic Assessment (Revision 1) include the assessment using the revised council criteria and the required mitigations such that compliance will be achieved.

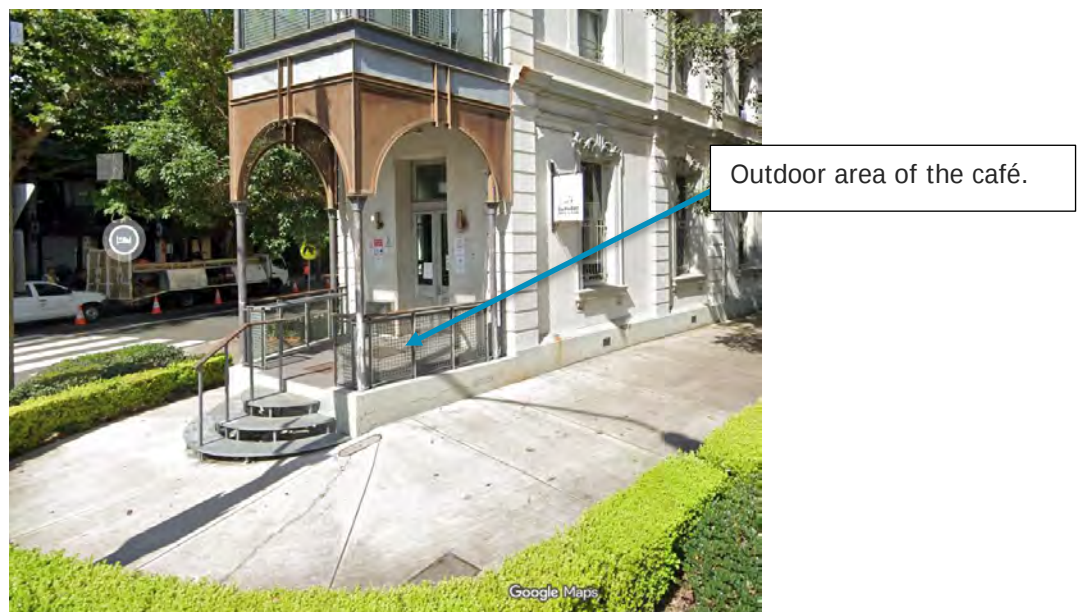
d. Cumulative noise levels

An assessment for the potential for cumulative noise levels resulting from the use of the roof top area and the ground floor café has been undertaken.

The café within the building is located on the ground floor of the building on the corner of Sire John Young Crescent and Crown Street, see the figure below.

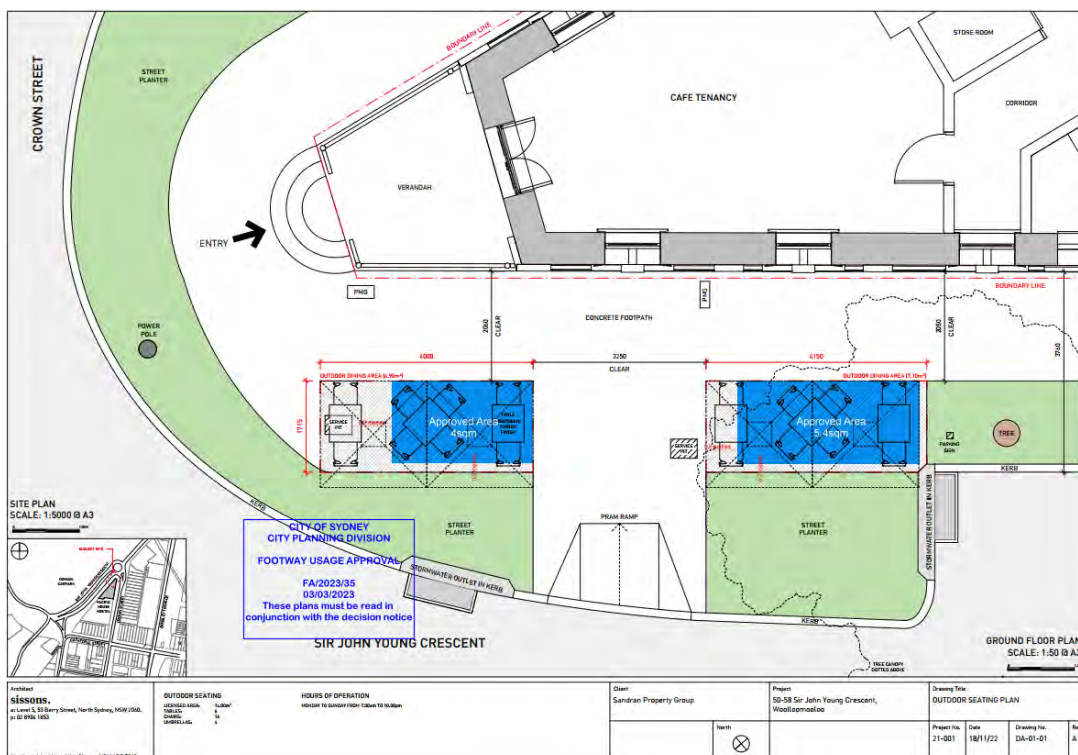


The café includes a small external area, including that detailed in the figure below.



Based on the location of the café and the general operation the following is discussed:

- i. The café includes activities and uses which are contained within the building, including that detailed in the figures above.
- ii. The use of the café includes operations which are operating within current project approvals.
- iii. The operational hours of the café includes the following:
 - 8am to 10pm Monday – Sunday
- iv. The location of the café includes a separation of 3 stories of the building, resulting in significant distance separations from the potential noise sources.
- v. The location of all receivers to the noise sources generated within the café include those which will not result as similar times and providing each source complies with the existing and proposed mitigations within the roof top proposal cumulative noise levels will comply with relevant criteria as required.
- vi. The café is located on the Ground floor of the project which also includes close proximity to the traffic movements of the roadways, including Sir John Young Crescent and Crown Street.
- vii. The café includes an approved area for external seating including those including that detailed within the figure below and approved within the *Notice of Determination FA/2023/35*.



Based on the location of the seating the building includes a barrier to the receivers within the vicinity of the building.

The proposed roof top area will not impact the café from complying with the Notice of determination FA/2023/35.

Based on the details included in the assessment the cumulative noise levels of the proposed roof top and the café will be achieved.

3 Conclusion

This report details the acoustic review and response to the DA submission for the roof top area of the 50-58 Sir John Young Crescent, Woolloomooloo.

Details in this report include the additional information and comments to all acoustic items which have been raised in the Response to Submissions, noting that a revised acoustic assessment has been undertaken for the project.

If you have any additional questions, please contact the author below.

Regards,

A handwritten signature in blue ink that reads "BG White". The signature is written in a cursive, flowing style.

Ben White
Director

Pulse White Noise Acoustics

4 Appendix A – Glossary of Terms

<i>Ambient Sound</i>	The totally encompassing sound in a given situation at a given time, usually composed of sound from all sources near and far.																				
<i>Audible Range</i>	The limits of frequency which are audible or heard as sound. The normal ear in young adults detects sound having frequencies in the region 20 Hz to 20 kHz, although it is possible for some people to detect frequencies outside these limits.																				
<i>Character, acoustic</i>	The total of the qualities making up the individuality of the noise. The pitch or shape of a sound's frequency content (spectrum) dictate a sound's character.																				
<i>Decibel [dB]</i>	The level of noise is measured objectively using a Sound Level Meter. The following are examples of the decibel readings of every day sounds; <table> <tr><td>0dB</td><td>the faintest sound we can hear</td></tr> <tr><td>30dB</td><td>a quiet library or in a quiet location in the country</td></tr> <tr><td>45dB</td><td>typical office space. Ambience in the city at night</td></tr> <tr><td>60dB</td><td>Martin Place at lunch time</td></tr> <tr><td>70dB</td><td>the sound of a car passing on the street</td></tr> <tr><td>80dB</td><td>loud music played at home</td></tr> <tr><td>90dB</td><td>the sound of a truck passing on the street</td></tr> <tr><td>100dB</td><td>the sound of a rock band</td></tr> <tr><td>115dB</td><td>limit of sound permitted in industry</td></tr> <tr><td>120dB</td><td>deafening</td></tr> </table>	0dB	the faintest sound we can hear	30dB	a quiet library or in a quiet location in the country	45dB	typical office space. Ambience in the city at night	60dB	Martin Place at lunch time	70dB	the sound of a car passing on the street	80dB	loud music played at home	90dB	the sound of a truck passing on the street	100dB	the sound of a rock band	115dB	limit of sound permitted in industry	120dB	deafening
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<i>dB(A)</i>	<i>A-weighted decibels</i> The ear is not as effective in hearing low frequency sounds as it is hearing high frequency sounds. That is, low frequency sounds of the same dB level are not heard as loud as high frequency sounds. The sound level meter replicates the human response of the ear by using an electronic filter which is called the "A" filter. A sound level measured with this filter switched on is denoted as dB(A). Practically all noise is measured using the A filter. The sound pressure level in dB(A) gives a close indication of the subjective loudness of the noise.																				
<i>Frequency</i>	Frequency is synonymous to <i>pitch</i> . Sounds have a pitch which is peculiar to the nature of the sound generator. For example, the sound of a tiny bell has a high pitch and the sound of a bass drum has a low pitch. Frequency or pitch can be measured on a scale in units of Hertz or Hz.																				
<i>Loudness</i>	A rise of 10 dB in sound level corresponds approximately to a doubling of subjective loudness. That is, a sound of 85 dB is twice as loud as a sound of 75 dB which is twice as loud as a sound of 65 dB and so on																				
<i>L_{Max}</i>	The maximum sound pressure level measured over a given period.																				
<i>L_{Min}</i>	The minimum sound pressure level measured over a given period.																				
<i>L₁</i>	The sound pressure level that is exceeded for 1% of the time for which the given sound is measured.																				
<i>L₁₀</i>	The sound pressure level that is exceeded for 10% of the time for which the given sound is measured.																				
<i>L₉₀</i>	The level of noise exceeded for 90% of the time. The bottom 10% of the sample is the L ₉₀ noise level expressed in units of dB(A).																				
<i>L_{eq}</i>	The "equivalent noise level" is the summation of noise events and integrated over a selected period of time.																				
<i>Background Sound Low</i>	The average of the lowest levels of the sound levels measured in an affected area in the absence of noise from occupants and from unwanted, external ambient noise sources. Usually taken to mean the L _{A90} value																				
<i>Ctr</i>	A frequency adaptation term applied in accordance with the procedures described in ISO 717.																				
<i>dB (A)</i>	'A' Weighted overall sound pressure level																				

<i>Noise Reduction</i>	The difference in sound pressure level between any two areas. The term "noise reduction" does not specify any grade or performance quality unless accompanied by a specification of the units and conditions under which the units shall apply
<i>NR Noise Rating</i>	Single number evaluation of the background noise level. The NR level is normally around 5 to 6 dB below the "A" weighted noise level. The NR curve describes a spectrum of noise levels and is categorised by the level at 1000 Hz ie the NR 50 curve has a value of 50 dB at 1000 Hz. The NR rating is a tangential system where a noise spectrum is classified by the NR curve that just encompasses the entire noise spectrum consideration.
<i>R_w</i>	Weighted Sound Reduction Index - Laboratory test measurement procedure that provides a single number indication of the acoustic performance of a partition or single element. Calculation procedures for R _w are defined in ISO 140-2:1991 "Measurement of Sound Insulation in Buildings and of Building Elements Part 2: Determination, verification and application of precision data".
<i>R'_w</i>	Field obtained Weighted Sound Reduction Index - this figure is generally up to 3-5 lower than the laboratory test determined level data due to flanked sound transmission and imperfect site construction.
<i>Sound Isolation</i>	A reference to the degree of acoustical separation between any two areas. Sound isolation may refer to sound transmission loss of a partition or to noise reduction from any unwanted noise source. The term "sound isolation" does not specify any grade or performance quality and requires the units to be specified for any contractual condition
<i>Sound Pressure Level, L_p dB</i>	A measurement obtained directly using a microphone and sound level meter. Sound pressure level varies with distance from a source and with changes to the measuring environment. Sound pressure level equals 20 times the logarithm to the base 10 of the ratio of the rms sound pressure to the reference sound pressure of 20 micro Pascals.
<i>Sound Power Level, L_w dB</i>	Sound power level is a measure of the sound energy emitted by a source, does not change with distance, and cannot be directly measured. Sound power level of a machine may vary depending on the actual operating load and is calculated from sound pressure level measurements with appropriate corrections for distance and/or environmental conditions. Sound power levels is equal to 10 times the logarithm to the base 10 of the ratio of the sound power of the source to the reference sound power of 1 picoWatt
<i>Speech Privacy</i>	A non-technical term but one of common usage. Speech privacy and speech intelligibility are opposites and a high level of speech privacy means a low level of speech intelligibility. It should be recognised that acceptable levels of speech privacy do not require that speech from an adjacent room is inaudible.
<i>Transmission Loss</i>	Equivalent to Sound Transmission Loss and to Sound Reduction Index in terminology used in countries other than Australia. A formal test rating of sound transmission properties of any construction, by usually a wall, floor, roof etc. The transmission loss of all materials varies with frequency and may be determined by either laboratory or field tests. Australian Standards apply to test methods for both situations.