



Rumble Boxing, Cromer

4-8 Inman Road, Cromer

Noise Impact Assessment

Do Your Rumble

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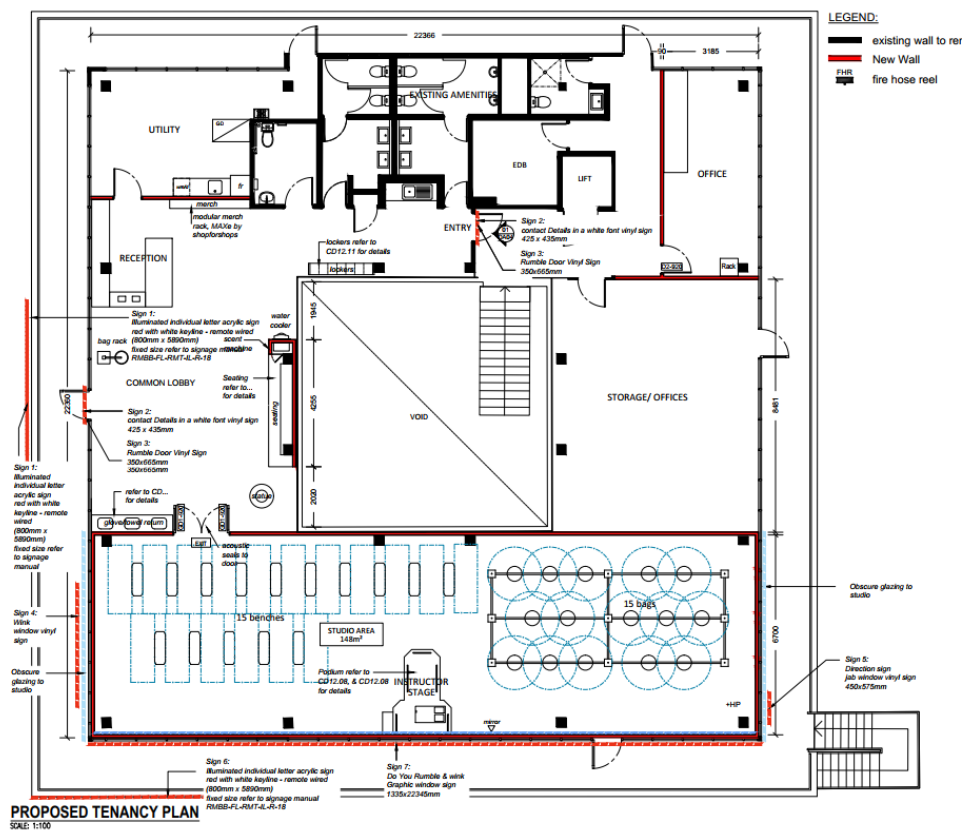
1 INTRODUCTION

Pulse White Noise Acoustics has been engaged to undertake the Noise Impact Assessment of the proposed Rumble Boxing tenancy located within the commercial building located at 4-8 Inman Road Cromer.

This assessment includes the acoustic investigation into the potential for noise impacts from the operation of gym on surrounding receivers external to the building.

The proposed project includes a Rumble Boxing gym to be located within the existing building, the proposed gym is detailed in the figure below.

Figure 1 Proposed Rumble Boxing gym tenancy

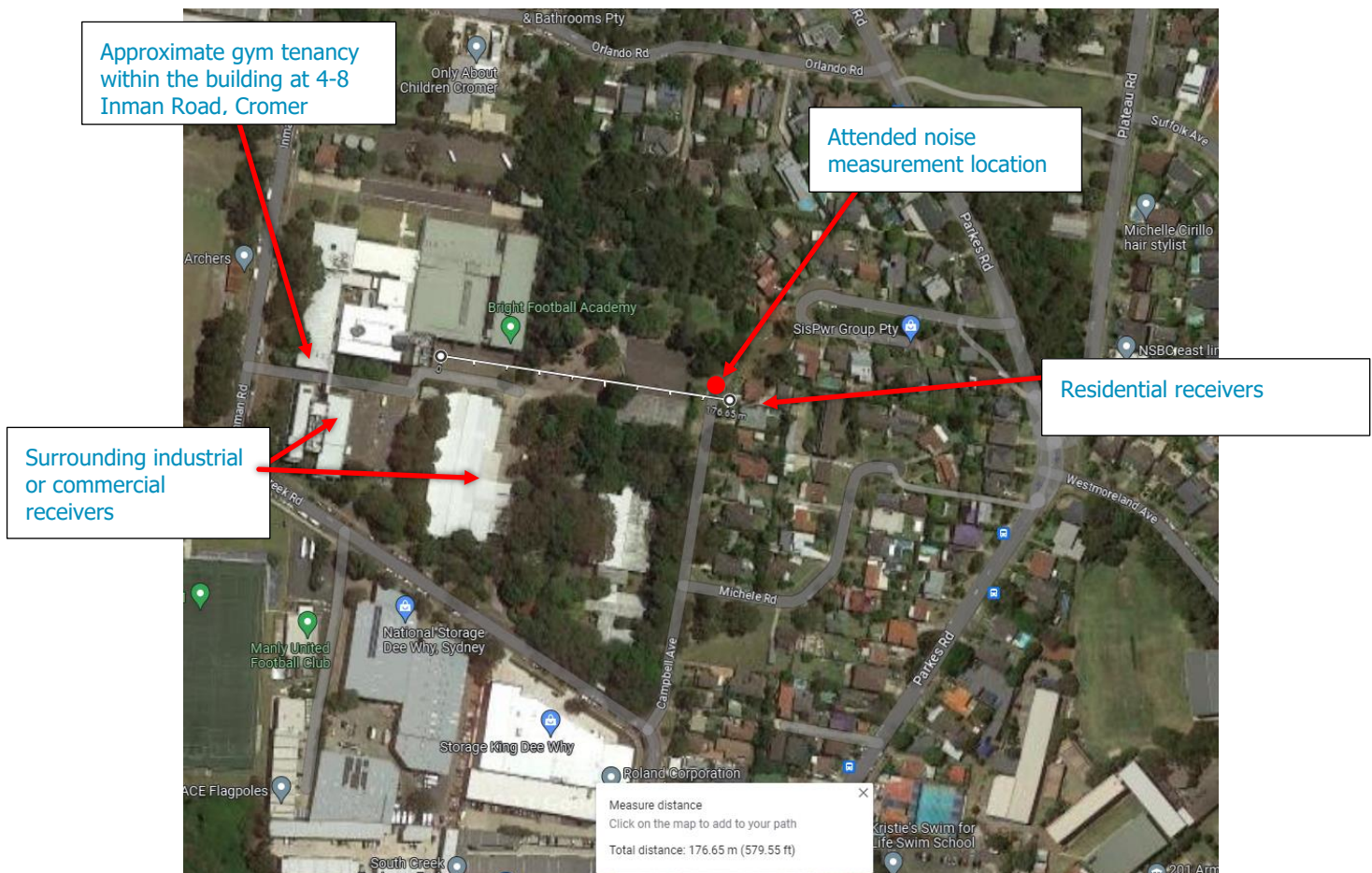


1.1 Development Description

The proposed Rumble Boxing gym is to be located within the existing building located at 4-8 Inman Road Cromer. The site is located to the east of Inman Road and north of South Creek Road, which carries high volumes of traffic. The site is located within an area which is neighboured by industrial/retail receivers. The closest potentially impacted residential receivers are located to the east of the site on Campbell Avenue and are approximately 170m from the tenancy.

The site location is detailed in Figure 1 below.

Figure 2 Site Location



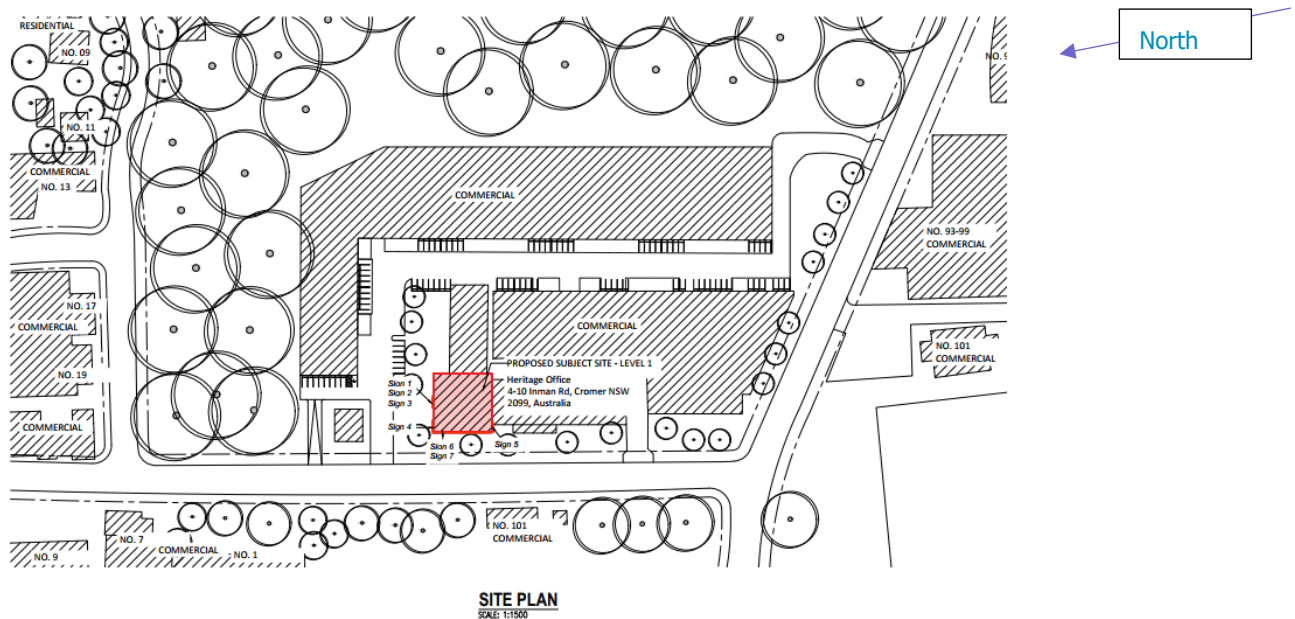
2 PROPOSED DEVELOPMENT

The proposed Rumble Boxing gym is to be located within the existing building located at 4-8 Inman Road, Cromer which is located with an industrial and retail area with no residential receivers neighbouring the site. The closest residential receiver is located on the east of the site on Campbell Avenue which includes a distance of approximately 170m, as detailed in Figure 1 above.

The site is located within the Northern Beaches Council local government jurisdiction.

The proposed location of the gym is included in the figure below.

Figure 3 Site Plan



3 EXISTING ACOUSTIC ENVIRONMENT

The existing environmental noise levels at the site are predominantly as a result from existing facilities within proximity of the site and traffic noise on Inman and South Creek Road. Existing receivers within the vicinity of the site include industrial and retail receivers. The closest residential receiver is located to the east of the site on Campbell Avenue which is approximately 170m from the existing building and is detailed in Figure 1 above.

As part of this assessment an acoustic survey of the existing acoustic environment at the site was undertaken. The survey included attended noise level measurements at the site, during various times of the day on the 24th August, 2023. During the testing periods of inclement weather have not been included in the assessment.

Attended noise level testing was conducted using a Rion NL-42EX type meter with Serial number 396932 and calibration number C19465. The meter was calibrated before and after testing and no significant drift was recorded.

3.1 Noise Survey Results

The attended noise locations were selected to obtain suitable noise levels for the assessment of background noise levels ($L_{90(t)}$) as well as the impact from traffic movements ($Leq(t)$). The results of the acoustic survey are detailed in the tables below which have been used as the basis of this assessment.

Table 1 Results of the Attended Noise Survey at the Site

Measurement Location	Time of Measurement	$L_{Aeq, 15min}$ dB(A)	$L_{A90, 15min}$ dB(A)	Comments
Corner Green Road and Showground Road	6.30am to 6.45 am	56	37	Noise level at the site dominated by vehicle movements on surrounding roadways

4 EXTERNAL NOISE EMISSION ASSESSMENT

This section of the report details the relevant noise level criteria for noise emissions generated on the site once completed.

The relevant authority which provides the required noise level criteria for noise levels generated on the site includes the NSW Environmental Protection Authority's (EPA) Noise Policy for Industry (NPfI).

4.1 NSW Environmental Protection Authority, Noise Policy for Industry

The NSW Environmental Protection Authority (EPA) Noise Policy for Industry (NPfI), previously Industrial Noise Policy, details noise criteria for the control of noise generated from the operation of developments and the potential for impact on surrounding receivers.

The NPI includes both intrusive and amenity criteria which are summarised below.

1. Intrusive noise level criteria, The NPfI states the following:

'The intrusiveness of an industrial noise source may generally be considered acceptable if the level of noise from the source (represented by the L_{Aeq} descriptor), measured over a 15minute period, does not exceed the background noise level by more than 5 dB when beyond a minimum threshold. This intrusiveness noise level seeks to limit the degree of change a new noise source introduces to an existing environment.'

2. Amenity noise level criteria, The NPfI states the following:

'To limit continuing increases in noise levels from application of the intrusiveness level alone, the ambient noise level within an area from all industrial noise sources combined should remain below the recommended amenity noise levels specified in Table 2.2 where feasible and reasonable. The recommended amenity noise levels will protect against noise impacts such as speech interference, community annoyance and some sleep disturbance.'

Project amenity noise level for industrial developments = recommended amenity noise level (Table 2.2) minus 5 dB(A)

Where the resultant project amenity noise level is 10 dB or more lower than the existing industrial noise level. In this case the project amenity noise levels can be set at 10 dB below existing industrial noise levels if it can be demonstrated that existing industrial noise levels are unlikely to reduce over time.

The LAeq is determined over a 15-minute period for the project intrusiveness noise level and over an assessment period (day, evening and night) for the project amenity noise level. This leads to the situation where, because of the different averaging periods, the same numerical value does not necessarily represent the same amount of noise heard by a person for different time periods. To standardise the time periods for the intrusiveness and amenity noise levels, this policy assumes that the LAeq,15min will be taken to be equal to the LAeq, period + 3 decibels (dB), unless robust evidence is provided for an alternative approach for the particular project being considered.

Project amenity noise level (ANL) is urban ANL (Table 2.1) minus 5 dB(A) plus 3 dB(A) to convert from a period level to a 15-minute level (dB = decibel; dB[A] = decibel [A-weighted]; RBL = rating background noise level).

Noise level used in the assessment of noise emission from the site have been based on the noise level survey conducted at the site and detailed in this section of the report.

Consequently, the resulting noise level criteria are summarised in the table below. The criteria are nominated for the purpose of determining the operational noise limits for the operation of the site including mechanical plant associated with the development which can potentially affect noise sensitive receivers and operational noise levels from the future tenancies. For each assessment period, the lower (i.e. the more stringent) of the amenity or intrusive criteria are adopted. The calculated *Project Amenity Noise Level* includes either the Recommended Amenity Noise Level minus 5 dB(A) plus 3 dB(A) (for a 15 minimum period) or the measured existing Leq noise level – 10 dB if this is greater as determined by the NPfI.

Table 2 Results of the Attended Noise Survey at the Site

Location	Time of Day	Project Amenity Noise Level, LAeq, period ¹ (dBA)	Measured LA90, 15 min (RBL) ² (dBA)	Intrusive LAeq, 15 min Criterion for New Sources (dBA) ³	Amenity LAeq, 15 min Criterion for New Sources (dBA) ^{3, 4}
Residence (Suburban)	Day	50	37	42	53
	Evening	40	37	42	43
	Night	35	37	42	38
Commercial	When in use	60	N/A	N/A	63
Industrial	When in use	65	N/A	N/A	68
<p><i>Note 1: Project Amenity Noise Levels corresponding to "suburban" areas, equivalent to the Recommended Amenity Noise Levels minus 5 dBA</i></p> <p><i>Note 2: LA90 Background Noise or Rating Background Level</i></p> <p><i>Note 3: Project Noise Trigger Levels are shown in bold</i></p> <p><i>Note 4: According to Section 2.2 of the NSW NPI, the LAeq, 15 minutes is equal to the LAeq, period + 3 dB</i></p>					

5 NOISE IMPACT ASSESSMENT

An assessment of noise generated on the site has been undertaken on this section of the report. The assessment of noise levels generated on the site are summaries below:

1. Mechanical Services Equipment –Detailed selections of the proposed mechanical plant and equipment to be used on the site are not available at this time. All future plant and equipment are to be acoustically treated to ensure the noise levels at all surrounding receivers comply with noise emission criteria detailed within this report. Experience with similar projects indicated that it is both possible and practical to treat all mechanical equipment such that the relevant noise levels are achieved. Examples of the possible acoustic treatments to mechanical equipment includes the following:
 - a. Supply and Exhaust Fans – location of fans within the building and treated using internally lined ductwork or acoustic silencers.
 - b. General supply and exhaust fans – general exhaust and supply fans such as toilet, kitchen, lobby and other small mechanical fans can be acoustically treated using acoustic flex ducting or internal lined ducting.

Details of the required mechanical services equipment and acoustic treatments to ensure the relevant noise level criteria is achieved will be provided as part of the CC submission of the project.

2. Operation of the Gym – Providing the following treatments and controls are included in the design and construction of the gym noise level at all surrounding receivers will comply with the relevant noise level criteria:
 - a. All windows within the gym are to be fixed closed during operation.
 - b. All door openings are to include self-closing devices.
 - c. No playing of music or the like externally to the building.

Providing the acoustic treatments and controls detailed in the points above are included in the Rumble Boxing gym operation compliance with all relevant noise level emission criteria will be achieved.

Based on the assessment of the proposed noise emissions from the proposed gym providing the recommendations detailed in this section of the report are included in the project the resulting noise levels at all surrounding residential receivers will generally be inaudible and compliance with the required intrusive and amenity requirement of the EPA NPfI will be achieved.

6 CONCLUSION

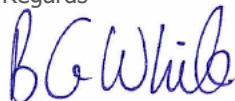
This report details the Noise Impact Assessment of the proposed Rumble Boxing gym to be located within the building located at 4-8 Inman Road, Cromer.

This report details the required acoustic treatments and controls to be included within the construction and operation of the proposed gym such that compliance with the relevant noise emission criteria based on the NSW Environmental Protection Authorities *Noise Policy for Industry* will be complied with.

Providing all recommendations detailed in this report are included in the future design and operation of the gym all noise emissions from the site comply with the EPA *NPI* criteria and ensure an acceptable noise impact on surrounding receivers will be achieved.

For any additional information please do not hesitate to contact the person below.

Regards

A handwritten signature in blue ink that reads 'BG White'.

Ben White
Director

Pulse White Noise Acoustics



7 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>Leq</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 <i>R_w</i> 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.