



REPORT R250522R1

Revision 0

Acoustic Report Review  
Proposed Parish Church  
2 Darcy Road, Westmead

PREPARED FOR:  
Catholic Schools Parramatta Diocese

2 September 2025



# Acoustic Report Review

## Proposed Parish Church

### 2 Darcy Road, Westmead

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## 1 INTRODUCTION

Rodney Stevens Acoustics Pty Ltd (RSA) has been engaged by Catholic Schools Parramatta Diocese to prepare a supporting document for the modification application for the works located at 2 Darcy Road, Westmead specifically the Sacred Heart Parish Church.

This report documents a review of the acoustical performance requirements applying to the project to accompany the modification application submission. This construction certificate stage review has been prepared to perform the following functions:

- Review the current architectural plans to ensure compliance with the requirements outlined in JHA DA report (190529 Rev D dated 23 June 2020).

The acoustical assessment has been based upon Catholic Schools Parramatta Diocese’s issue documentation (provided in Appendix B) and JHA DA report (190529 Rev D dated 23 June 2020).

## 2 ACOUSTIC REQUIREMENTS

The building works are required to be carried out in accordance with the provisions of the requirements outlined in the SSD application number 10383 conditions of consent.

JHA DA report (190529 Rev D dated 23 June 2020) provides recommendations for the proposed glazing of the Parish Church to comply with the requirements of the State Environmental Planning Policy (Transport and Infrastructure) 2021 (SEPP).

The recommendations from the JHA report are presented below:

Figure 1 Minimum Glazing Requirements

<i>Location</i>	<i>Weighted Sound Reduction Index (R<sub>w</sub>)</i>	<i>Fixed Single Glazing System</i>	<i>Fixed Double Glazing System</i>
<i>All glazing areas</i>	35	10.38mm laminated	6mm / 12mm air gap / 10mm

### 3 DISCUSSION & CONCLUSION

Rodney Stevens Acoustics Pty Ltd has reviewed Design Formation Architect's CC issue drawings detailed below in Appendix B. The proposed parish church at 2 Darcy Road, Westmead, will comply with the noise intrusion requirements presented in JHA DA report (190529 Rev D dated 23 June 2020).

It is the opinion of Rodney Stevens Acoustics that the recommendations presented in JHA DA report (190529 Rev D dated 23 June 2020) have been incorporated in the plans and specifications of the proposed development.

Prepared by:



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Approved by:



Desmond Raymond  
Director

## Appendix A – Acoustic Terminology

<b>A-weighted sound pressure</b>	The human ear is not equally sensitive to sound at different frequencies. People are more sensitive to sound in the range of 1 to 4 kHz (1000 – 4000 vibrations per second) and less sensitive to lower and higher frequency sound. During noise measurement an electronic ' <i>A-weighting</i> ' frequency filter is applied to the measured sound level <i>dB(A)</i> to account for these sensitivities. Other frequency weightings (B, C and D) are less commonly used. Sound measured without a filter is denoted as linear weighted dB(linear).
<b>Ambient noise</b>	The total noise in a given situation, inclusive of all noise source contributions in the near and far field.
<b>Community annoyance</b>	Includes noise annoyance due to: character of the noise (e.g. sound pressure level, tonality, impulsiveness, low-frequency content) character of the environment (e.g. very quiet suburban, suburban, urban, near industry) miscellaneous circumstances (e.g. noise avoidance possibilities, cognitive noise, unpleasant associations) human activity being interrupted (e.g. sleep, communicating, reading, working, listening to radio/TV, recreation).
<b>Compliance</b>	The process of checking that source noise levels meet with the noise limits in a statutory context.
<b>Cumulative noise level</b>	The total level of noise from all sources.
<b>Extraneous noise</b>	Noise resulting from activities that are not typical to the area. Atypical activities may include construction, and traffic generated by holiday periods and by special events such as concerts or sporting events. Normal daily traffic is not considered to be extraneous.
<b>Feasible and reasonable measures</b>	Feasibility relates to engineering considerations and what is practical to build; reasonableness relates to the application of judgement in arriving at a decision, taking into account the following factors: Noise mitigation benefits (amount of noise reduction provided, number of people protected). Cost of mitigation (cost of mitigation versus benefit provided). Community views (aesthetic impacts and community wishes). Noise levels for affected land uses (existing and future levels, and changes in noise levels).
<b>Impulsiveness</b>	Impulsive noise is noise with a high peak of short duration or a sequence of these peaks. Impulsive noise is also considered annoying.
<b>Low frequency</b>	Noise containing major components in the low-frequency range (20 to 250 Hz)



**Noise criteria**

The general set of non-mandatory noise levels for protecting against intrusive noise (for example, background noise plus 5 dB) and loss of amenity (e.g. noise levels for various land use).

**Noise level (goal)**

A noise level that should be adopted for planning purposes as the highest acceptable noise level for the specific area, land use and time of day.

**Noise limits**

Enforceable noise levels that appear in conditions on consents and licences. The noise limits are based on achievable noise levels, which the proponent has predicted can be met during the environmental assessment. Exceedance of the noise limits can result in the requirement for either the development of noise management plans or legal action.

**Performance-based goals**

Goals specified in terms of the outcomes/performance to be achieved, but not in terms of the means of achieving them.

**Rating Background Level (RBL)**

The rating background level is the overall single figure background level representing each day, evening and night time period. The rating background level is the median value of the lowest 10<sup>th</sup> percentile L<sub>A90</sub> noise level measured over all day, evening and night time monitoring periods.

**Receptor**

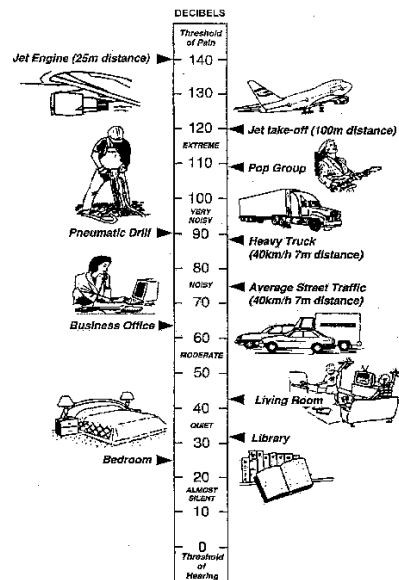
The noise-sensitive land use at which noise from a development can be heard.

**Sleep disturbance**

Awakenings and disturbance of sleep stages.

**Sound and decibels (dB)**

Sound (or noise) is caused by minute changes in atmospheric pressure that are detected by the human ear. The ratio between the quietest noise audible and that which should cause permanent hearing damage is a million times the change in sound pressure. To simplify this range the sound pressures are logarithmically converted to decibels from a reference level of  $2 \times 10^{-5}$  Pa. The picture below indicates typical noise levels from common noise sources.



dB is the abbreviation for decibel – a unit of sound measurement. It is equivalent to 10 times the logarithm (to base 10) of the ratio of a given sound pressure to a reference pressure.

**Sound power Level (SWL)**

The sound power level of a noise source is the sound energy emitted by the source. Notated as SWL, sound power levels are typically presented in  $dB(A)$ .

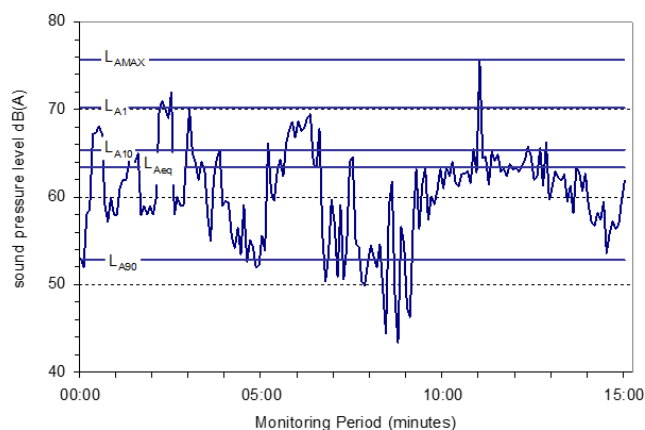
**Sound Pressure Level (SPL)**

The level of noise, usually expressed as SPL in  $dB(A)$ , as measured by a standard sound level meter with a pressure microphone. The sound pressure level in  $dB(A)$  gives a close indication of the subjective loudness of the noise.

**Statistic noise levels**

Noise levels varying over time (e.g. community noise, traffic noise, construction noise) are described in terms of the statistical exceedance level.

A hypothetical example of A weighted noise levels over a 15 minute measurement period is indicated in the following figure:



**Key descriptors:**

- $L_{Amax}$  Maximum recorded noise level.
- $L_{A1}$  The noise level exceeded for 1% of the 15 minute interval.
- $L_{A10}$  Noise level present for 10% of the 15 minute interval. Commonly referred to the average maximum noise level.
- $L_{Aeq}$  Equivalent continuous (energy average) A-weighted sound pressure level. It is defined as the steady sound level that contains the same amount of acoustic energy as the corresponding time-varying sound.
- $L_{A90}$  Noise level exceeded for 90% of time (background level). The average minimum background sound level (in the absence of the source under consideration).

**Threshold**

The lowest sound pressure level that produces a detectable response (in an instrument/person).

**Tonality**

Tonal noise contains one or more prominent tones (and characterised by a distinct frequency components) and is considered more annoying. A 2 to 5  $dB(A)$  penalty is typically applied to noise sources with tonal characteristics



