

OSC Property Group

67 Elimatta Road, 19A Rowan Street, Mona Vale

DRAFT

Acoustic DA Assessment

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1 Introduction

The following report has been prepared by Acouras Consultancy on behalf of OSC Property Group to undertake a noise impact assessment for the proposed residential development located at 67 Elimatta Road, 19A Rowan Street, Mona Vale. The proposal includes ten (10) two-storey townhouses with private courtyards, garages, and landscaped surrounds.

The proposed residential development is surrounded by existing residential buildings. The site location is shown in Figure 1.

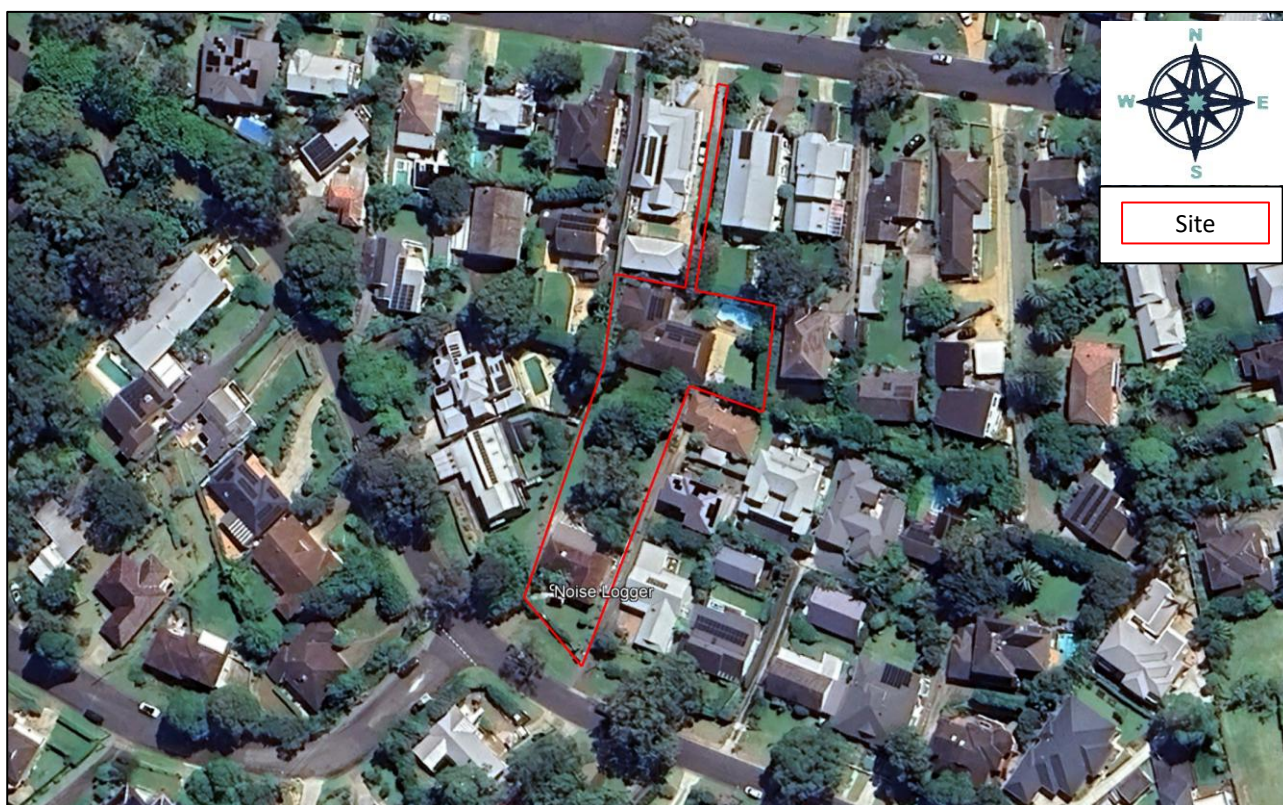


Figure 1 – Site Location, Nearest Residents and Noise Logger Position

2 Noise Criteria

The following standards and guidelines are applicable to this project:

- Northern Beaches Council Development Control Plan (Formerly Pittwater DCP).
- NCC/BCA Part F7 (2022).
- Australian standard AS/NZS 2107-2016: Acoustics – Recommended design sound levels and reverberation times for building interiors.
- Australian standard AS 1055-2018: Acoustics – Description and measurement of environmental noise - General procedures.

2.1 Northern Beaches DCP (Formerly Pittwater DCP)

According to the DCP, Section C1.6 for residential developments:

Noise-sensitive rooms, such as bedrooms, should be located away from noise sources, including main roads, parking areas, living areas and communal and private open space areas and the like.

Walls and/or ceilings of dwellings that are attached to another dwelling/s shall have a noise transmission rating in accordance with Part F(5) of the Building Code of Australia. (Walls and ceilings of attached dwellings must also comply with the fire rating provisions of the Building Code of Australia).

Noise generating plants including pool/spa motors, air conditioning units and the like shall not produce noise levels that exceed 5dBA above the background noise when measured from the nearest property boundary.

Developments must comply in all respects with the Protection of the Environment Operations Act 1997, and other relevant legislation.

2.2 Internal Noise Levels

For the residential development, the AS/NZS 2107–2016 outlines the acceptable internal noise levels such that a satisfactory acoustic environment within residential and non-residential spaces in new and existing buildings. Table 1 presents the recommended internal design noise levels in accordance with AS 2107 – 2016.

Table 1— Recommended Internal Design Noise Levels (AS/NZS 2107)

Type of occupancy/activity	Design sound level (L _{Aeq,t}) range
Living Areas	30 to 40 dB(A) L _{eq} (15hour)
Sleeping Areas	30 to 35 dB(A) L _{eq} (9hour)

2.3 Sound Insulation Requirement (Part F7 NCC/BCA)

For sound transmission and insulation between sole occupancy units (SOU) within the same development, walls and floors to be constructed in accordance with requirements of Part F7 of the Building Code of Australia (BCA). Sound insulation requirements are summarised in Table 2.

Table 2 - NCC Part F7 Requirements (Class 2 or 3)

Building Element	Minimum NCC Part F7 Requirements
Sound Insulation Rating of Walls (Class 2 or 3)	
Walls between separate sole occupancy units.	Rw + Ctr 50 (airborne)
Walls between wet areas (bathrooms, sanitary compartment, laundry or kitchen) and a habitable room (other than kitchen) in adjoining apartments.	Rw + Ctr 50 (airborne) & of discontinuous construction
Walls between sole occupancy unit and stairway, public corridors, public lobby or the like or parts of a different classification.	Rw 50 (airborne)
Walls between a plant room or lift shaft and a sole occupancy unit.	Rw 50 (airborne) & of discontinuous construction
Services (Class 2, 3 or 9c)	
If a storm water pipe, a duct, soil, waste or water supply pipe including a duct or pipe that is located in a wall or floor cavity serves or passes through more than one sole occupancy unit must be separated:	
if the adjacent room is a habitable room (other than a kitchen); or	Rw + Ctr 40
if the room is a kitchen or non-habitable room	Rw + Ctr 25

Construction Deemed to Satisfy

The forms of construction must be installed as follows:

- (a) Masonry—Units must be laid with all joints filled solid, including those between the masonry and any adjoining construction.
- (b) Concrete slabs—Joints between concrete slabs or panels and any adjoining construction must be filled solid.
- (c) Sheeting materials—
 - (i) if one layer is required on both sides of a wall, it must be fastened to the studs with joints staggered on opposite sides; and
 - (ii) if two layers are required, the second layer must be fastened over the first layer so that the joints do not coincide with those of the first layer; and
 - (iii) joints between sheets or between sheets and any adjoining construction must be taped and filled solid.
- (d) Timber or steel-framed construction—perimeter framing members must be securely fixed to the adjoining structure and—
 - (i) bedded in resilient compound; or
 - (ii) the joints must be caulked so that there are no voids between the framing members and the adjoining structure.
- (e) Services—
 - (i) Services must not be chased into concrete or masonry elements.
 - (ii) A door or panel required to have a certain $R_w + C_{tr}$ that provides access to a duct, pipe or other service must—
 - (A) not open into any habitable room (other than a kitchen); and
 - (B) be firmly fixed so as to overlap the frame or rebate of the frame by not less than 10 mm, be fitted with a sealing gasket along all edges and be constructed of—
 - (aa) wood, particleboard or blockboard not less than 33 mm thick; or
 - (bb) compressed fibre reinforced cement sheeting not less than 9 mm thick; or
 - (cc) other suitable material with a mass per unit area not less than 24.4 kg/m²
 - (iii) A water supply pipe must—
 - (A) only be installed in the cavity of discontinuous construction; and
 - (B) in the case of a pipe that serves only one sole-occupancy unit, not be fixed to the wall leaf on the side adjoining any other sole-occupancy unit and have a clearance not less than 10 mm to the other wall leaf.
 - (iv) Electrical outlets must be offset from each other—
 - (A) in masonry walling, not less than 100 mm; and
 - (B) in timber or steel framed walling, not less than 300 mm.

2.4 Noise Survey and Project Specific Limits

An unattended noise survey was carried out at the site to measure the background and ambient noise levels. Noise monitoring was conducted between Friday 29th September to Thursday 4th October 2025. The monitor was positioned as shown in Figure 1. Measurements were conducted using the following equipment:

- SVAN 977C Type 1 Real time Analyser/Noise Logger. Serial No. 98078.
- SVAN SV30A Type 1 Sound Level Calibrator. Serial No. 31830.

Noise monitoring was conducted in general accordance with Australian standard AS 1055-2018: Acoustics-Description and measurement of environmental noise-General procedures.

The noise analyser was calibrated immediately before and after measurements were taken with no discernible differences between these two recorded levels. The sound analyser is Type 1 and complies with Australian standard AS1259.2: 1990. During the monitoring period any adverse weather condition have been excluded. The noise logger results are presented in Appendix C.

2.4.1 Traffic Noise Levels

Table 3 presents the measured traffic noise levels surrounding the development according to the Acoustic Logic report.

Table 3 – Measured Traffic Noise Levels, dBA

Location	Period	Traffic Noise Level
Elimatta Road	Day (07:00-22:00)	51 dB(A) $L_{eq}(15hr)$
	Night (22:00-07:00)	43 dB(A) $L_{eq}(9hr)$

2.4.2 Northern Beaches Council Conditions

According to the Northern Beaches Council DCP, noise from the operation of mechanical equipment:

Noise generating plants including pool/spa motors, air conditioning units and the like shall not produce noise levels that exceed 5dBA above the background noise when measured from the nearest property boundary.

Table 4 presents a summary of the measured background noise level and the allowable intrusive noise limit for this project in accordance with the Consent Conditions.

Table 4—Noise Survey Summary and Project Limits, dBA

Time Period	Existing Noise Levels		Consent Condition Noise Limits, Leq
	Leq (period)	RBL	
Day	51	38	43
Evening	47	37	42
Night	43	30	35

The design and selection of the mechanical equipment required to service the proposed development will be required to achieve the EPA noise limits as presented in Table 4.

3 Assessment and Recommendations

3.1 Façade Glazing Requirements

Acoustic glazing for the residential are given in Table 5 are required to reduce noise impact on the internal occupants and should result in noise levels within such units in accordance with the DCP and Australian Standards.

Table 5 – Schedule of Window and Glazing (R_w)

Level	Apartment	Space	Glazing Thickness	Minimum R_w (Glazing+Frame)
All	All	Living & Bedrooms	6.38mm laminated	30

All other non-habitable spaces, such as bathrooms and laundries require minimum 6mm monolithic glass (R_w 28). All Windows/doors should be well sealed (air tight) when closed with good acoustic seals around the top and bottom sliders. Mohair seals are not considered to be acoustic seals.

3.2 Building Façade Construction

To provide sufficient acoustic attention of noise, the general external construction of the proposed building would need to be constructed as detailed in Table 6.

Table 6 – External Façade Construction (R_w)

Building Element	Proposed Construction	Minimum R_w
External Wall	- External 6mm Hardie Fibre Cement on both sides of stud. 92mm steel studs. 75mm Glasswool (11Kg/m^3) insulation in each cavity. 13mm or 16mm fire-resistant plasterboard on both sides of stud. - James Hardie System: JH214, JH215, or similar.	48-49
Roof and ceiling	- Tile or metal roof. 13mm plasterboard internal suspended ceiling. - Thermal insulation in ceiling cavity.	45

3.3 Mechanical Services

At this stage, the design and selection of mechanical equipment has not been selected or finalised. Typically, based on the current documentation, list of equipment and similar sized residential projects we would expect the following noise control measures to be implemented:

- Apartment exhaust fans (toilet, laundry, kitchen):
 - Electrically inter-locked with the light switch or have manual switch for the room served.
 - Internally lined ducts and acoustic flex ducts to be fitted to the fans.
 - These units would be inaudible at the boundary and at the nearest affected receivers.
- Typical residential condenser would be located in the ground level open terrace of each townhouse.
 - Each condenser has a typical noise level of approximately SPL 52dBA at 1m.
 - Condensers are to be located at least 2.5m boundary.
- Vibration isolation mounts are to be selected in accordance with manufacturer's recommendations. Where required, incorporate restraining devices to prevent excessive movement of plant, equipment and piping systems.

During the Construction Certification stage review, a detail assessment of all mechanical plant and equipment will be conducted to ensure compliance with the DCP noise criteria.

4 Conclusion

An acoustic assessment of the proposed residential development has been carried out in accordance with the requirements of Northern Beaches Council Development Control Plan (DCP), NCC/BCA Part F7 and relevant Australian Standards.

An environmental noise survey of the site has been conducted, noise limiting criteria for the operation of mechanical plant/equipment are given Section 2.4 . During the Construction Certification stage review, a detail assessment of all mechanical plant and equipment will be conducted to ensure compliance with the DCP noise criteria.

Construction for glazing, external walls and the roof/ceiling systems have been provided to achieve the internal noise criteria and are detailed in Section 3.1 and Section 3.2 based on the impact of road traffic noise.

Providing the recommendations in this report are implemented, the noise from the proposed residential development is predicted to comply with acoustic requirements of the Northern Beaches Council Development Control Plan (DCP), NCC/BCA Part F7 and relevant Australian Standards.

Appendix A – Acoustic Terminology

Decibel, dB: A dimensionless unit which denotes the ratio between two quantities that are proportional to power, energy or intensity. One of these quantities is a designated reference by which all other quantities of identical units are divided. The sound pressure level in decibels is equal to 10 times the logarithm (to the base 10) of the ratio between the pressure squared divided by the reference pressure squared. The reference pressure used in acoustics is 20 micro Pascals.

A-WEIGHTING: A measure of sound pressure level designed to reflect the response of the human ear, which does not respond equally to all frequencies. To describe sound in a manner representative of the human ear's response it is necessary to reduce the effects of the low and high frequencies with respect to medium frequencies. The resultant sound level is said to be A-weighted, and the units are in decibels (dBA). The A-weighted sound level is also called the noise level.

Sound Pressure Level, L_p (dB), of a sound: 20 times the logarithm to the base 10 of the ratio of the r.m.s. sound pressure to the reference sound pressure of 20 micro Pascals. Sound pressure level is measured using a microphone and a sound level meter, and varies with distance from the source and the environment.

Ambient Noise/Sound: All noise level present in a given environment, usually being a composite of sounds from many sources far and near. Traffic, HVAC, masking sound or even low-level background music can contribute to ambient level of noise or sound.

Percentile Level - L_{90} , L_{10} , etc: A statistical measurement giving the sound pressure level which is exceeded for the given percentile of an observation period, e.g. L_{90} is the level which is exceeded for 90% of a measurement period. L_{90} is commonly referred to as the "background" sound level.

Background Noise (L_{90}): The sum total of all unwanted residual noise generated from all direct and reflected sound sources in a space that can represent an interface to, or interfere with good listening and speech intelligibility.

Rating Background Level – RBL: Method for determining the existing background noise level which involves calculating the tenth percentile from the L_{A90} measurements. This value gives the Assessment Background Noise Level (ABL). Rating Background Level is the median of the overall ABL.

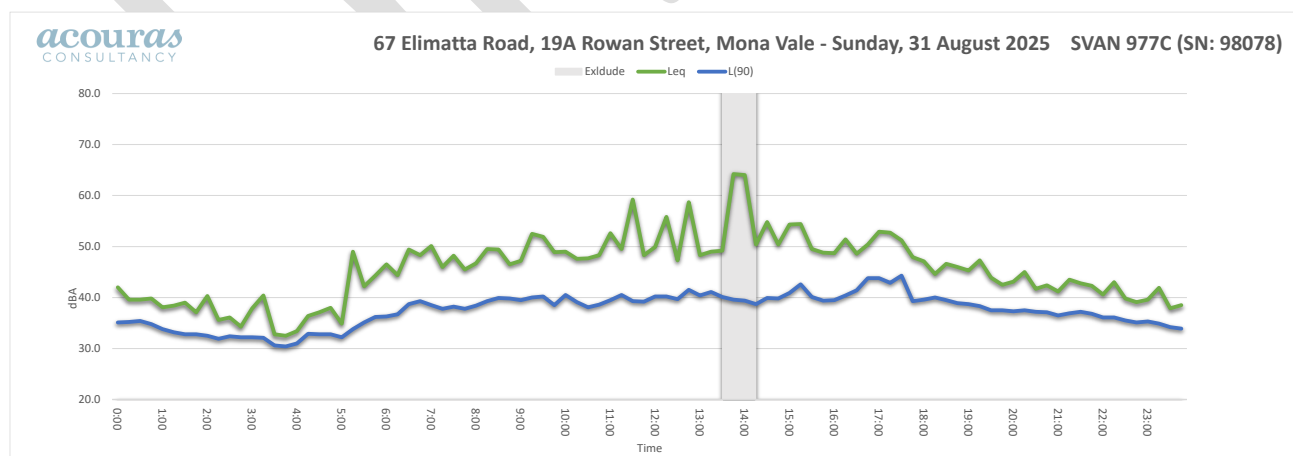
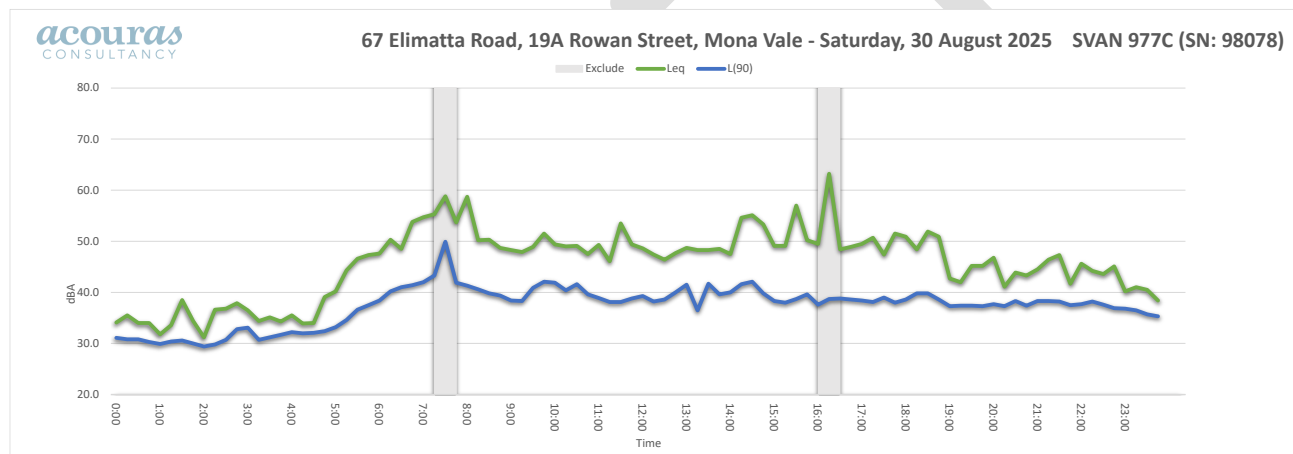
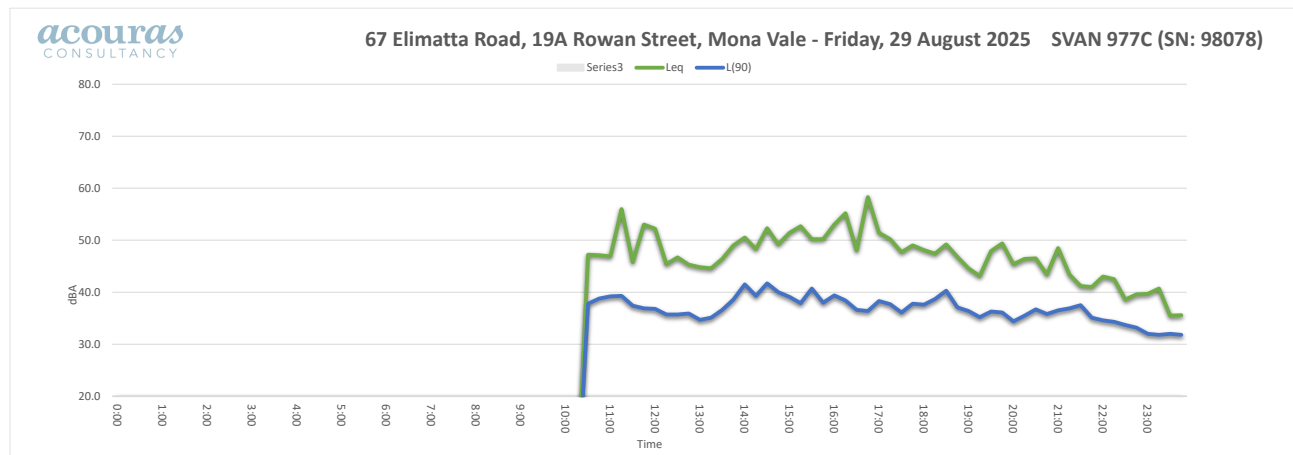
$L_{AEQ,T}$: Equivalent continuous A-weighted sound pressure level. The value of the A-weighted sound pressure level of a continuous steady sound that, within a measurement time interval T, has the same A-weighted sound energy as the actual time-varying sound.

Appendix B – List of Drawings

This assessment was based on the following architectural drawings provided by JKM Architects.

Drawing	Issue	Date	Description
DA00.40	C	16.10.2025	Site Plan
DA02.10	B	16.10.2025	Proposed Ground Plan - South
DA02.11	B	16.10.2025	Proposed Ground Plan - North
DA02.12	B	16.10.2025	Proposed L1 Plan - South
DA02.13	B	16.10.2025	Proposed L1 Plan - North
DA02.14	B	16.10.2025	Proposed Attic Plan - South
DA02.15	B	16.10.2025	Proposed Attic Plan - North
DA02.16	B	16.10.2025	Proposed Roof Plan - South
DA02.17	B	16.10.2025	Proposed Roof Plan - North
DA03.10	B	16.10.2025	Site Elevations

Appendix C – Noise Logger Results



OSC PROPERTY GROUP

67 ELIMATTA ROAD, 19A ROWAN STREET, MONA VALE - ACOUSTIC DA ASSESSMENT

SYD2025-1159-R001B

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