



NATIONAL NOISE & VIBRATION

439 CONDAMINE ST, ALLAMBIE HEIGHTS NSW 2100

TRAFFIC NOISE INTRUSION ASSESSMENT

MAY 27, 2025

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Project Information

Details	
Report Title:	TRAFFIC NOISE INTRUSION ASSESSMENT
Site Address:	439 Condamine St, Allambie Heights NSW 2100
Client:	Ron Rohani
Attention:	Walsh Architects

Document Control

Reference	Issue Date	Revision	Prepared	Reviewed	Authorised
J1121	MAY 27, 2025	0	MP	MP	MP

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1 INTRODUCTION

National Noise & Vibration has been engaged by Ron Rohani to conduct a Traffic Noise Intrusion Assessment for the proposed development to be located at 439 Condamine St, Allambie Heights NSW 2100.

Road traffic noise intrusions to the proposed development were assessed in accordance with framework presented in the following documents:

NSW Department of Planning and Environment

- *Development Near Rail Corridors and Busy Roads – Interim Guideline (2008).*
- *State Environmental Planning Policy (SEPP) (Transport and Infrastructure) 2021.*

This assessment was based on architectural drawings as provided by Walsh Architects, detailed in Table 1 below.

Table 1 – Architectural Drawings (Rafla Arch)

Document title	Drawing No.	Issue	Date
COVER PAGE	DA000	A	30.05.2025
EXISTING SITE PLAN	DA010		
SITE ANALYSIS	DA020		
DEMOLITION PLAN	DA030		
PROPOSED SITE PLAN	DA040		
BASEMENT PLAN	DA100		
GROUND FLOOR PLAN	DA101		
LEVEL 1 PLAN	DA102		
LEVEL 2 PLAN	DA103		
ROOF PLAN	DA104		
SECTIONS	DA200		
SECTIONS	DA201		
ELEVATIONS	DA300		
ELEVATIONS	DA301		
AREA CALCULATIONS	DA400		
EXTERNAL FINISHES	DA900		

2 SITE DESCRIPTION

The proposed residential development is located at 439 Condamine St, Allambie Heights NSW 2100, within the Northern Beaches Council. The development includes the construction of two apartment blocks containing a total of 15 units.

Construction elements are proposed such that traffic noise intrusions from vehicles on Condamine Street to internal spaces are to comply with indoor design sound level objectives outlined Section 4.3.

Figure 1 - Subject Site Aerial View (Google Maps)



3 EXISTING NOISE ENVIRONMENT

3.1 Sound Level Descriptors

Environmental noise constantly varies and to accurately determine it, 15-minute measurement interval measurements are utilised. Noise levels are monitored on a continuous basis and statistical and integrated techniques are used to determine noise description parameters. For analysing environmental noise, the following descriptors are used.

- L_{90} is known as background noise. L_{90} is a statistical sound level which describes the percentage of times a sound level is exceeded. This parameter is used to set up the allowable noise levels for intrusive noise sources since the level of disturbance of the intrusive noise source will be dependent on how audible it is above the existing noise environment.
- L_{10} is a statistical sound level which describes the percentage of times a sound level is exceeded for 10% of the measurement period.
- L_{eq} is the equivalent sound level which represents the average noise level during a measurement period. L_{eq} describes a receiver's cumulative noise exposure from all events over a specified period of time for compliance assessment purposes.

- A-weighted Sound Level (instantaneous) is the most common weighting used in noise measurements and it represents the frequency range detectable by the human ear. A-weighted is used for noise measurements and prediction purposes.

3.2 Unattended Traffic Noise Monitoring

Unattended noise monitoring was conducted using an Acoustics Research Laboratory Type 1 environmental noise logger set on A-weighted fast response mode and recording in 15-minute intervals. Unattended noise measurements were undertaken with the microphone located 1.5m above the natural surface level and at least 3m from buildings, fences, and other reflective surfaces.

Instrument calibration was checked before and after measurements, with variation in calibrated levels not exceeding $\pm 0.5\text{dB}$. The acoustic instrumentation employed was designed to comply with the requirements of AS IEC 61672.1—2004 – Electroacoustics—Sound level meters, Part 1: Specifications and carries current manufacturer calibration certificates.

Long-term unattended noise logging was conducted at the subject property for the purpose of quantifying the equivalent noise level generated by road traffic on Condamine St. The location of the noise logger is shown in Figure 1. Traffic noise data is presented in Table 2.

Table 2 - Measured Traffic Noise at Property Facade

Location	Date / May 2025	Day Period $L_{Aeq\ 15h}$ (07:00am – 10:00pm)	Night Period $L_{Aeq\ 9h}$ (10:00pm – 07:00am)
439 CONDAMINE ST, ALLAMBIE HEIGHTS NSW 2100	Thursday, 1 st	65	59
	Friday, 2 nd	65	58
	Saturday, 3 rd	65	60
	Sunday, 4 th	64	60
	Monday, 5 th	65	60
	Tuesday, 6 th	65	61
	Wednesday, 7 th	63	59

As a more conservative approach, the loudest recorded $L_{Aeq, 15min}$ noise level 61dB (Night-time - bedrooms all facing Condamine Street) has been used in this assessment to calculate the minimum construction requirements for the proposed development.

3.2.1 Road Noise Validation

Traffic noise measurements have been validated by using the calculation of Road Traffic Noise (CoRTN). The CoRTN method is defined in the United Kingdom, Department of Environment/Transport (UKDOE), Welsh Office HMSO, 'Calculation of Road Traffic Noise' manual published 1988. This method is an updated version of the 1975 version method.

In NSW, application of the CoRTN is considered as a robust model in predicting traffic noise levels that are representative of Australian environments. As such, the methodology within been used to model the existing site conditions in order validate the $L_{Aeq\ 15\text{-hour}}$ and $L_{Aeq\ 9\text{-hour}}$ traffic noise levels at the logging location and façade as derived from the environmental noise logging data.

4 NOISE CRITERIA

4.1 NSW Department of Planning and Environment – State Environmental Planning Policy (SEPP) (Transport and Infrastructure) 2021

Section 2.120 of Subdivision 2 *Development in or adjacent to road corridors and road reservations of the NSW State Environmental Planning Policy (Transport and Infrastructure) 2021* (SEPP) stipulates the following regarding road traffic noise:

2.120 *Impact of road noise or vibration on non-road development*

- (1) *This section applies to development for any of the following purposes that is on land in or adjacent to the road corridor for a freeway, a tollway or a transitway or any other road with an annual average daily traffic volume of more than 20,000 vehicles (based on the traffic volume data published on the website of TfNSW) and that the consent authority considers is likely to be adversely affected by road noise or vibration—*
 - *residential accommodation,*
 - *a place of public worship,*
 - *a hospital,*
 - *an educational establishment or centre-based child care facility.*
- (2) *Before determining a development application for development to which this section applies, the consent authority must take into consideration any guidelines that are issued by the Planning Secretary for the purposes of this section and published in the Gazette.*
- (3) *If the development is for the purposes of residential accommodation, the consent authority must not grant consent to the development unless it is satisfied that appropriate measures will be taken to ensure that the following LAeq levels are not exceeded—*
 - *in any bedroom in the residential accommodation—35 dB(A) at any time between 10 pm and 7 am,*
 - *anywhere else in the residential accommodation (other than a garage, kitchen, bathroom or hallway)—40 dB(A) at any time.*
- (4) *Subsection (3) does not apply to a building to which State Environmental Planning Policy (Housing) 2021, Chapter 3, Part 7 applies.*
- (5) *In this section, freeway, tollway and transitway have the same meanings as they have in the Roads Act 1993.”*

4.2 NSW Department of Planning – Development Near Rail Corridors and Busy Roads – Interim Guideline 2008

Section 3.5 of the *NSW Department of Planning – Development near Rail Corridors and Busy Roads (Interim Guideline)* states the following:

“The following provides an overall summary of the assessment procedure to meet the requirements of clause 102 of the Infrastructure SEPP. The procedure covers noise at developments for Road.

For Clauses 102 (Road):

- (3) *If the development is for the purposes of residential accommodation, the consent authority must not grant consent to the development unless it is satisfied that appropriate measures will be taken to ensure that the following LAeq levels are not exceeded—in any bedroom in the residential accommodation—35 dB(A) at any time between 10 pm and 7 am, anywhere else in*

the residential accommodation (other than a garage, kitchen, bathroom or hallway)—40 dB(A) at any time.”

4.3 Summary of Noise Intrusion Criteria

Summarised internal noise criteria for each internal space are presented in Table 3 below.

Table 3 - Resultant Noise intrusion Criteria

Room	Assessment Criteria	Applicable Time Period
Sleeping Areas (Bedrooms)	35	Night (10pm to 7am)
Other Habitable Rooms	40	At any time
Note	airborne noise is calculated as Leq (9h) (night) and Leq (15h)(day)	

5 NOISE INTRUSION ASSESSMENT

5.1 Analysis of Noise Intrusion

Internal noise levels in the proposed residential development will be primarily from noise transferred through the building elements, namely the walls, roof, windows and doors, especially from light-weight constructions as light-weight materials have less resistance to the transmission of sound.

Noise transmitted through all building elements has been predicted based on the spectral characteristics of traffic movements, the area of each assessed building element, the absorption characteristics of each room and the noise reduction performance of each of the building elements. Based on the predicted noise levels, the following construction recommendations are provided to achieve compliance with the internal noise criteria as stated in Table 5.

6 CONSTRUCTION RECOMMENDATIONS

Environmental noise intrusions into the proposed development were assessed using the measured external noise levels reported above as a basis. Calculations were performed taking into account the orientation of the windows, the total glazing area, façade transmission loss and the sound absorption characteristics of each room.

Internal noise levels will primarily be as a results of noise transfer through the windows and doors as these are relatively light building elements that offer less resistance to the transmission of sound. Noise transfer through the masonry elements will not be significant, therefore will not need to be considered further and will not require acoustic upgrade.

This section presents necessary constructions to achieve the internal noise level requirements as presented in Section 4.3.

6.1 Glazing

Recommended minimum constructions for glazed elements such as windows and glazed doors are provided in Table 4 below.

Where glazing requirements are greater than specified as minimum in this assessment e.g., for safety/ thermal purposes – this will be acceptable acoustically.

Table 4 - Main residential structure glazing recommendations

Unit	Room	Minimum Glazing Construction and Thickness
Front Apartment Block Facing Condamine Street (Front Units)	Bedrooms / Studio / Living	10mm Float
Front Apartment Block Facing Condamine Street (Rear Units)		6mm Float
Rear Apartment Block Facing Condamine Street (Front Units)		6mm Float
Rear Apartment Block Facing Condamine Street (Rear Units)		4mm Float
All	Bathrooms	4mm Float

In addition to the above minimum glazing thickness requirements for compliance with AS2021-2015, the Rw rating of the windows (including the glaze and the window/sliding door frame) should be minimum as detailed in Table 5. Acoustic seals are also required around the full perimeter of operable frames and the frame will need to be sealed into the building opening using a flexible sealant. Mohair seals are not acceptable.

Table 5 - Rw Requirement of Glazing Element with Acoustic Seals

Glazed Element	Rw Rating
4mm Float	30 (or STC29)
6mm Float	32 (or STC30)
10mm Float	34

*Rw can be substituted for STC unless stated otherwise

6.2 External Walls

The proposed Brick walls are deemed acoustically suitable and do not need any additional construction elements for adequate acoustic insulation.

6.3 Roof/Ceiling

The proposed tiled pitched roof is deemed acoustically suitable and does not need any additional construction elements for adequate acoustic insulation.

6.4 External Doors

To maintain adequate acoustic amenity, we recommend external doors have a minimum depth of 40mm and are solid core of minimum density 480kg/m³. Any glazed doors are required to be acoustically sealed.

6.5 Manufacturers Recommendations

Where manufacturers have installation recommendations required to achieve a specified acoustic rating system, these should be followed in order to achieve the appropriate acoustic rating.

7 CONCLUSION

An environmental noise intrusion assessment has been undertaken for the proposed residential development at 439 Condamine Street, Allambie Heights NSW 2100, in accordance with the NSW State Environmental Planning Policy (Transport and Infrastructure) 2021 and the Development Near Rail Corridors and Busy Roads – Interim Guideline (2008).

Unattended environmental noise monitoring confirmed that traffic noise levels from Condamine Street exceed the design criteria of LAeq 35 dB(A) for bedrooms and LAeq 40 dB(A) for other habitable rooms. The highest recorded façade noise level during the night period was LAeq 61 dB(A), which was used as the basis for minimum construction requirements.

To comply with the relevant internal noise intrusion criteria, a suite of construction recommendations has been provided, including enhanced glazing, and solid-core doors with effective acoustic seals. These recommendations align with the measured site conditions and the anticipated performance of construction elements.

Provided the construction measures outlined in Section 6 are adopted, the proposed development is expected to comply with the applicable road traffic noise intrusion criteria.

Please contact us if you have any further queries.

Sincerely,

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