

La Salle Developments Pty Ltd

88 Helen Street, Sefton

Acoustic DA Assessment

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1 Introduction

The following report has been prepared by Acouras Consultancy on behalf of La Salle Developments Pty Ltd to assess the potential for noise impact associated with the 88 Helen Street, Sefton. The storage facility development will include:

- Carpark and loading dock on ground level.
- Self storage space and ground level and office space on mezzanine level.

The proposed storage facility development would be located on an existing industrial site surrounded by other light industrial facilities.

The nearest residential receivers that may potentially be impacted by the operation of the development are located opposite Helen Street to the west of the site. 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:

- NSW EPA 'Noise Policy for Industry' (NPfI).
- Australian standard AS/NZS 2107-2016: Acoustics – Recommended design sound levels and reverberation times for building interiors.
- Australian standard AS 1055.1-1997: Acoustics – Description and measurement of environmental noise - General procedures.

2.1 Internal Noise Levels

The AS/NZS 2107–2016 outlines the acceptable internal noise levels such that a satisfactory acoustic environment within non-residential spaces in new and existing buildings can be achieved. Table 1 presents the recommended internal design noise levels.

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

Type of occupancy/activity	Design sound level ($L_{Aeq,t}$) range
General office areas (commercial)	40 to 45
Corridors & Lobbies	45 to 50
Toilets	45 to 55
Warehouse (Packaging and delivery)	< 60

2.2 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 Wednesday 19th February to Wednesday 26th February 2025. The monitor was positioned as shown in Figure 1. Measurements were conducted using the following equipment:

- SVAN 977 Type 1 Real time Analyser/Noise Logger. Serial No. 34892.
- SVAN SV30A Type 1 Sound Level Calibrator. Serial No. 31830.

Noise monitoring was conducted in general accordance with Australian standard AS 1055.1-1997: 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.

2.2.1 Traffic Noise Levels

Table 2 presents a summary of the measured ambient noise level and traffic noise impacting the development.

Table 2 – Measured Traffic Noise Levels, dBA

Location	Period	Average L_{eq}	Highest L_{eq} 1hr
Helen St	Day (07:00-22:00)	57	63
	Night (22:00-07:00)	48	55

2.2.2 NSW EPA Noise Limits

Table 3 presents a summary of the measured background noise level and the allowable intrusive noise limit for this project in accordance with the EPA NPfI. The amenity criteria are based on a suburban receiver.

Table 3—Noise Survey Summary and EPA Project Limits, dBA

Receiver	Time Period	Existing Noise Levels		NSW EPA NPfI			Project Noise Trigger Level $L_{eq}(15min)$
		L_{eq} (period)	RBL	Recommended ANL	Project ANL ¹ $L_{eq}(15min)$	Intrusiveness Criteria, $L_{eq}(15min)$	
Residential	Day	58	41	55	53	46	46
	Evening	54	39	45	43	44	43
	Night	48	35	40	38	40	38
Commercial	When in use	-	-	-	-	-	65
Industrial	When in use	-	-	-	-	-	70

During detailed design stage, 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 the table above.

¹ 2. Project ANL is recommended ANL minus 5 dB(A) and plus 3 dB(A), to convert from a period level to a 15-minute level.

2.3 Traffic Noise Generation

The storage facility has the potential to generate increased traffic noise along Helen Street will be assessed in accordance with the NSW EPA Road Noise Policy (RNP). Table 4 sets out the assessment criteria for residences to be applied to particular types of project, road category and land use.

Table 4— Road Traffic Noise Assessment Criteria for Land Use Developments

Road Category	Type of project/land use	Assessment Criteria - dBA	
		Day (7am-10pm)	Night (10pm-7am)
Local roads	Existing residences affected by additional traffic on existing local roads generated by land use developments	L _{Aeq} , (1 hour) 55 (external)	L _{Aeq} , (1 hour) 50 (external)

For existing residences and other sensitive land uses affected by additional traffic on existing roads generated by land use developments, any increase in the total traffic noise level should be limited to 2 dB above that of the corresponding 'no build option'.

3 Assessment and Recommendations

3.1 Façade Glazing Requirements

Acoustic glazing for the storage facility 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 and AS/NZS 2107:2016.

Table 5 – Schedule of Window and Glazing (R_w)

Façade	Space	Glazing Thickness	Minimum R_w (Glazing+Frame)
All	Administration & office.	6.38mm laminated	30

All other non-habitable spaces, such as the amenities 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	Office and amenities- Masonry or concrete and lightweight cladding with internal plasterboard lining.	45
	Warehouse - Masonry or concrete.	45
Roof and ceiling	Office and amenities: Colorbond roof with a plasterboard or mineral tile cavity ceiling. Thermal insulation in ceiling cavity below roofing.	45
	Warehouse: Colorbond roof with sarking.	35

3.3 Mechanical Services

At the DA stage, the design and selection of mechanical equipment has not been finalised. Following the DA approval of the proposed development, during the Construction Certification Stage a detail assessment of all mechanical plant and equipment will be conducted to ensure compliance with the EPA noise criteria.

Typically for commercial and industrial projects we would expect the following noise control measures can be implemented:

- Exhaust and supply fans operate with a VSD.
- Install acoustic attenuators to the supply and discharge or internally lined ducts to the supply and discharge of the fans.
- Outdoor plant equipment, such as condensers, chillers, pumps, etc may include the construction of acoustic barriers, enclosures, attenuators and/or acoustic louvres.

Following the DA approval of the proposed development, during the Construction Certification Stage a detail assessment of all mechanical plant and equipment will be conducted to ensure compliance with the EPA INP and DCP noise criteria.

3.4 Assessment of Traffic Noise Generation

This section details a review of the expected future traffic noise generated from the development during the peak period (AM/PM).

Based on the report 'Traffic & Parking Impact Assessment' prepared by Hemanote Consultants Pty Ltd (dated 25 February 2025), the proposed development will result in a net increase in the traffic generation of approximately:

- 6.6 trips per weekday peak hour and 5.5 trips per weekend peak hour.
- 63 daily trips per weekday and 47.2 daily trips per weekend.

Traffic along Helen Street is dominated by commercial vehicles from the commercial and light industrial facilities. We would expect that the change in traffic noise levels on the surrounding roads during the peak times would not exceed 2dB increase and therefore comply with the EPA RNP guidelines.

4 Conclusion

An acoustic assessment of the proposed storage facility has been carried out in accordance with the requirements of NSW EPA NPfI guidelines and relevant Australian Standards.

An environmental noise survey of the site has been conducted and the noise limiting criteria for mechanical plant/equipment noise emission has been determined based on the EPA NPfI. The limits are presented in Table 3.

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 and surround commercial activity noise.

Traffic along Helen Street is dominated by commercial vehicles from the commercial and light industrial facilities. We would expect that the change in traffic noise levels on the surrounding roads during the peak times would not exceed 2dB increase and therefore comply with the EPA RNP guidelines.

Providing the recommendations in this report are implemented, the noise from the proposed storage facility is predicted to comply with acoustic requirements of the NSW EPA NPfI 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 – Architectural Drawings

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

Drawing	Issue	Date	Description
SK01	O	18/03/2025	Proposed Ground Floor Plan
SK02	O	18/03/2025	Mezzanine Plan
SK03	O	18/03/2025	Roof Plan
SK04	O	18/03/2025	Elevations
SK05	O	18/03/2025	Sections
SK06	O	18/03/2025	Perspectives

Appendix C – Noise Logger Results





