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# 70 Harley Crescent, Condell Park

Noise Impact Assessment

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# **1 INTRODUCTION**

Acoustic Logic (AL) have been engaged to undertake an acoustic assessment of potential noise impacts associated with the proposed change of use of the existing warehouse site for conversion into an RSPCA NSW Spey clinic located at 70 Harley Crescent, Condell Park.

As part of this assessment, the following has been undertaken:

- Quantification of the existing noise environment.
- Identification of external noise sources.
- Identification of nearby noise sensitive receivers and the noise emission sources.
- Establishment of suitable noise criteria for the development.
- Predictions of the level of noise from external noise sources into the development and provision of complying mitigation measures.
- Predictions of the level of noise from proposed use of the site to surrounding receivers.
- Recommendations to control noise to surrounding development where required to mitigate any adverse impacts identified.

This report should be read in conjunction with all supporting material associated with the DA submission.

# 2 **REFERENCED DOCUMENTS**

#### 2.1 BACKGROUND INFORMATION USED

The assessment is based on the architectural drawings provided by DW & SL Baxter Pty Ltd (Rev H, dated 28/10/2024)

#### 2.2 GUIDELINES

The following planning instruments and guidelines have been used in the assessment:

- Australian Standard AS2021:2015 'Acoustics–Aircraft noise intrusion–Building siting and construction'
- Canterbury-Bankstown Development Control Plan (DCP) 2023
- NSW Department of Environment and Heritage, Environment Protection Authority document Noise Policy for Industry ("NPfI") 2017

# **3 SITE DESCRIPTION AND THE PROPOSAL**

The site is located within an IN2 Light Industrial Zone at 70 Harley Crescent, Condell Park. The site is occupied by an existing warehouse and identified as 70A and 70B Harley Crescent.

The site is proposed to accommodate an RSPCA Spey clinic whilst retaining the existing storage area. There are provisions for 14 car parking spaces along the external courtyard of the site with access from Harley Crescent.

We have been informed that only 70B will be converted into a Spey clinic, with 70A to remain as storage.

Operating hours (max 5 staff at any one time) are as follows:

- Monday to Friday 8:30am to 5pm
- Saturday closed.
- Sundays and public holidays closed.

Acoustic investigation has been carried out by this office with regards to surrounding noise sources and noise sensitive receivers. These are detailed below:

- Existing industrial developments on all sides.
- External aircraft movements from the Bankstown Airport further to the south-west
- Existing multi-storey residential dwellings approximately 140m to the east.

#### 3.1 SURROUNDING RECEIVERS

Sensitive noise receivers near to site include:

- Receiver R1 Existing residential dwellings to the east along Townsend Street.
- **Receiver C1** Existing industrial development to the north of the site.
- **Receiver C2** Existing industrial development to the south of the site.
- **Receiver C3** Existing industrial development further to the west.
- Receiver C4 Existing industrial development further to the east.

A site map, measurement description and surrounding receivers are presented in Figure 1 below

The surrounding road network is comprised of local roads.



Figure 1 - Site Survey, Surrounding Receivers and Monitoring Locations (Source: SIX Maps NSW)

# 4 AMBIENT NOISE SURVEY SUMMARY

#### 4.1 UNATTENDED MONITORING

Long term unattended noise monitoring was conducted to quantify the existing acoustic environment at the project site. Acoustic Logic have obtained noise data undertaken in January 2025.

Unattended measurements have been undertaken as per the procedures outlines in Fact Sheet A & B of the NSW EPA Noise Policy for Industry. Detailed graphs of the measured noise levels from unattended noise monitoring are presented in the appendices of this report.

Rating background noise levels and traffic noise levels are presented for the relevant operating hours and have been summarised in the tables below. Appendix A provides detailed information on the selected monitoring locations, duration and calculation procedures required for the assessment, as well as detailed graphs of the measured noise levels from the monitor.

# Table 1 – Measured Rating Background Noise Levels

Monitor	Time of Day	Rating Background Noise Level dB(A) <sub>L90(Period)</sub>
M1	Day (7am – 6pm)	52

Traffic noise levels at the monitoring location have been calculated from the data in accordance with RNP guidelines and are summarised in the following table.

#### Table 2 – Measured Traffic Noise Levels

Monitor Location	Time	Traffic Noise Level dB(A) L <sub>eq,period</sub>
M1	Day (7am-10nm)	61 dB(A) L <sub>eq(1-hr)</sub>
		58 dB(A) L <sub>eq(15-hr)</sub>

#### Table 3 – Attended Background Noise Measurement

Measurement Location Time / Date		Background Noise Level dB(A) L <sub>90</sub>
A1	1:45pm-2:00pm 28/01/2025	46

Note: Noise emissions from the development will be conservatively assessed based on the attended measurement at A1.

# 5 NOISE ASSESSMENT GUIDELINES

Potential noise emissions from the proposed development will be assessed against project specific noise criteria derived using the relevant EPA guideline. The primary potential noise sources from the use of the site will be from vehicle noise (cars and SRV movements) and any proposed mechanical plant and equipment servicing the development.

The following guidelines have been referenced to as part of the assessment:

- Australian Standard AS2021:2015 'Acoustics-Aircraft noise intrusion-Building siting and construction'
- Canterbury-Bankstown Development Control Plan (DCP) 2023
- NSW EPA Noise Policy for Industry ("NPfI") 2017

An outline of relevant acoustic criteria is presented below.

# 5.1 AUSTRALIAN STANDARD AS2021:2015 'ACOUSTICS-AIRCRAFT NOISE INTRUSION-BUILDING SITING AND CONSTRUCTION'

The acceptability of aircraft noise exposure is assessed using Australian Standard AS2021:2015 'Acoustics-Aircraft noise intrusion-Building siting and construction'. The standard provides criteria to assess whether noise exposure is consistent with the proposed land use for the site.

Aircraft noise exposure is measured using the Australian Noise Exposure Forecast System (ANEF). Three basic parameters influence perception of aircraft noise: the frequency of aircraft movements overhead, the noise level and duration of individual aircraft movements, and the time of the day in which they occur. ANEF was developed to provide a rating system that reflects actual human response to these factors so that noise exposure at a particular location can be readily assessed.

The Bankstown Airport 2039 ANEF contour map indicates the project site is located on the ANEF 30 contour. Therefore, the proposed site is considered to be "conditionally acceptable" provided the building is constructed so that internal noise levels from aircraft flyovers are limited to those recommended in AS2021.



Figure 2 – ANEF 2039 Map and Site Location

AS2021 stipulates design internal noise levels for commercial and industrial buildings. These levels are summarised in the table below. These will be used to assess aircraft noise intrusion, and the treatment needed to comply.

Building Type	Indoor Design Sound Level from Aircraft Flyover dB(A)(L <sub>max,slow</sub> )	Aircraft Noise Reduction (ANR)			
Cor	Commercial buildings, offices and shops				
Private offices, conference rooms	55	18			
Drafting, open offices	65	8			
Typing, data processing	70	3			
Shops, supermarkets, showrooms	75	0			
Industrial					
Inspection, analysis, precision work	75	0			
Light machinery, assembly, bench work	80	0			

# Table 4 – Indoor Design Sound Levels for Aircraft Noise Reduction Assessment

### 5.2 CANTERBURY-BANKSTOWN DEVELOPMENT CONTROL PLAN (DCP) 2023

The Canterbury-Bankstown DCP does not provide specific (numerical) controls relating to noise impacts associated with the development. Therefore, noise emission criteria will be established from EPA guidelines.

#### 5.3 NSW EPA NOISE POLICY FOR INDUSTRY (NPFI) 2017

The EPA NPfI has two criteria which both are required to be satisfied, namely intrusiveness and amenity. The NPfI sets out acceptable noise levels for various localities. The policy indicates four categories to assess the appropriate noise level at a site. They are rural, suburban, urban and urban/industrial interface. Under the policy the nearest residential receivers would be assessed against the 'suburban' criteria.

Noise levels are to be assessed at the property boundary or nearby dwelling, or at the balcony or façade of an apartment.

#### 5.3.1 Intrusiveness Criterion

The guideline is intended to limit the audibility of noise emissions at <u>residential</u> receivers and requires that noise emissions measured using the  $L_{eq}$  descriptor not exceed the background noise level by more than 5dB(A).

Location	Period/Time	Background Noise Level dB(A) L <sub>90,(15min)</sub>	Intrusiveness Noise Level dB(A) L <sub>eq(15min)</sub>
Surrounding residential receivers	Day (7am-6pm)	46	51

# Table 5 – NPfl Intrusiveness Noise Trigger Levels

#### 5.3.2 Amenity Criterion

The guideline is intended to limit the absolute noise level from all noise sources to a level that is consistent with the general environment.

The EPA's NPfl sets out acceptable noise levels for various localities. The recommended noise amenity area is based upon the measured background noise levels at the sensitive receiver. Based on the measured background noise levels, the Noise Policy for Industry suggests the adoption of the 'Suburban' categorisation.

The NPfI requires project amenity noise levels to be calculated in the following manner:

 $L_{Aeq,15min}$  = Recommended Amenity Noise Level – 5 dB(A) + 3 dB(A)

The amenity levels appropriate for the receivers surrounding the project site are presented below.

Type of Receiver	Time of day	Recommended Noise Level dB(A) L <sub>eq(15min)</sub>	Amenity Noise Level dB(A) L <sub>eq(15min)</sub>
Residential – Suburban	Day	55	53
Industrial	When in use	70	68

# Table 6 – NPfl Amenity Noise Trigger Levels

#### 5.3.3 Summarised NPfl Project Noise Trigger Levels

NPfl project noise trigger levels have been presented for the relevant periods below.

### **Table 7 – NPfl Project Noise Trigger Levels**

Receiver	Period	Assessment Background Noise Level dB(A)L <sub>90</sub>	Amenity Noise Level dB(A) L <sub>eq(15min)</sub>	Intrusiveness Noise Level L <sub>eq(15min)</sub>
Residential Receivers (Suburban) R1	Day	46	53	51
Industrial C1-C4	When in use	N/A	68	N/A

### 6 NOISE INTRUSION ASSESSMENT

#### 6.1 EXTERNAL AIRCRAFT NOISE LEVELS

Aircraft noise levels at the site were determined using AS2021. The Standard gives aircraft noise levels for aircraft landing and taking off for locations near airports. The location of the runways was obtained from the Bankstown Airport Masterplan 2039 ANEF.

Based on the distance from the site to the runways, the flight path, and the site elevation, AS2021 predicts that the loudest typical aircraft movement will be from either a Beech Barion or Cessna 182 during departing. The noise level at the site as indicated by the standard is 73dB(A). This noise level will be used to predict the resultant internal noise levels.

#### 6.2 COMPLYING MITIGATION

#### 6.2.1 Glazed Windows and Doors

Acoustically rated external windows and doors are required to new occupied areas. Aluminium framed/sliding glass doors and windows will be satisfactory provided they meet the following criteria.

All external windows and doors listed are required to be fitted with Q-lon type (or equal) acoustic seals. (**Mohair Seals are unacceptable**). The suitability of alternative seal types should be determined to an appropriately qualified acoustic expert.

The complying constructions are listed below.

Level	Space	Glazing Construction	Acoustic Seals
All	Generally occupied areas (reception/waiting, WC, offices)	4mm Toughened	Yes
	Storage, BOH and the like	Standard glazing	No

# **Table 8 – Complying Glazing Constructions**

Thicker glazing may be required for structural, safety or other purposes. Where it is required to use thicker glazing than scheduled, this will also be acoustically acceptable.

It is recommended that only window systems having test results indicating compliance with the required ratings obtained in a certified laboratory be used where windows with acoustic seals have been recommended.

In addition to complying with the minimum complying glazing construction, the R<sub>w</sub> rating of the glazing fitted into open-able frames and fixed into the building opening should not be lower than the values listed in the following table. This will require the use of acoustic seals around the full perimeter of open-able frames and the frame will need to be sealed into the building opening using a flexible sealant.

# Table 9 – Minimum Rw of Glazing (with Acoustic Seals)

Glazing Assembly	Minimum R <sub>w</sub> of Installed Window
4mm Toughened	27

#### 6.2.2 Roof Construction Details

The following ceiling/roof construction options over occupied rooms are shown below. Ensure that the cavity is maintained regardless of roof angle.



# Table 10 – Complying External Light Weight Roof Construction

Level	Space	Internal Lining	Truss System	External Lining
All	Occupied Areas	1x13mm plasterboard or grid ceiling tile	75mm thick 14kg/m <sup>3</sup> glass wool insulation within the ceiling cavity	Steel Sheet Metal

If any penetrations are required through the external skin, an acoustic sealant should be used to minimise all gaps.

#### 6.2.3 External Walls

External walls constructed from brick, concrete/masonry elements will not require any acoustic upgrading to achieve the acoustic requirements.

#### 6.2.4 Non-Glazed Entry Doors

External doors to be minimum 40mm thick solid core timber (minimum 32 kg/m<sup>2</sup> surface density), fitted with full perimeter acoustic seals equal to Raven RP10 to the top and sides and Raven RP38 to the underside of a hinged door.

For glazed external doors refer Section 6.2.1.

#### 6.3 VENTILATION REQUIREMENTS

AS2021:2015 requires the installation of ventilation or air conditioning where aircraft noise exposure exceeds ANEF 20. The required internal noise levels can only be achieved with closed external windows and doors. An alternative outside air supply system or air conditioning complying with AS1668.2 must be installed to all spaces required to be assessed.

Noise emitted to the property boundaries by any ventilation system shall comply with Council requirements.

#### 6.3.1 Plasterboard Corner Details

The recommended plasterboard ceiling/wall corner construction options over the rooms are shown below. If the internal plasterboard lining of the ceiling is pitched, the same design applies, ensure that all junctions between the wall and the ceiling are fully sealed.



Figure 3 – Plasterboard Corner Options

Acoustically treat all penetrations in the external envelope, including any supplementary ventilation system, to prevent that the acoustic performance of the building envelope from being reduced.

# 7 NOISE EMISSION ASSESSMENT

The main potential noise sources will be from vehicular movements (cars) as well as from mechanical plant/equipment. Noise from the various activities associated with the proposal has been predicted at the potentially affected residential receivers as identified in Section 3.

The following noise sources have been assessed:

- Preliminary assessment of mechanical plant noise emissions
- Traffic noise generation from the development

## 7.1 ASSUMPTIONS ADOPTED

The following additional operating assumptions have been adopted, based on the findings of the referenced traffic assessment prepared by McLaren:

- Access during day and evening peak periods (between 8:30am 6pm)
  - In a given 15-minute period, up to 5 trips are assumed to occur (4 cars, 1 SRV movements)
- Noise emissions from use of site are predicted to the nearest residential receivers based on the noise levels outlined in the table below. Noise levels presented below are based on data held by this office for vehicles of a similar make and size. These are considered an accurate representation of noise emitted from the use of the self-storage facility.

~					
	Table 7	ole 7 – Acoustic Data Used for Assessment			

Noise Source	Sound Power Level	Area Assessed	
Car Manoeuvring at 10 km/h	84 dB(A) L <sub>eq</sub>	Carpark	
SRV Manoeuvring at 10 km/h	90 dB(A) L <sub>eq</sub>		
Engine Start / door slam	95 dB(A) L <sub>max</sub>		

#### 7.2 ASSESSMENT OF SITE OPERATIONAL NOISE EMISSIONS

Noise emissions from the additional proposed activities on the site have been assessed using the methodology in the EPA NPfI.

#### 7.2.1 Carpark Noise Emissions

An assessment of potential noise impacts has been undertaken based on the assumptions presented in Section 6.1 for typical operating hours. The assessment is detailed for average noise levels to nearby receivers below:

Receiver	Noise Sources	Predicted Noise Level dB(A)L <sub>eq</sub>	Noise Emission Objective	Compliance
R1	Car and SRV movements along	< 30	51 dB(A)L <sub>eq(15-min)</sub> <u>Day (</u> 7am – 6pm)	Yes
C1-C4	carpark	< 60	68 dB(A)L <sub>eq(15-min)</sub>	Yes

#### **Table 11 – Predicted Average Leg Noise Emissions to Receivers**

#### 7.2.2 Internal Facility Noise Emissions

Noise from internal areas within the site are predicted to be compliant with the relevant noise emission criteria at all times based on the following information:

- All animal holding bays/cages are located internally within the facility
- All new areas are provided with an internal ceiling separate to the existing roof of the warehouse
- There are no operable windows along the façade to internal holding/surgery areas.
- The nearest residential receivers are located approximately 140-150m away from the site and are shielded by existing buildings to the east and north of the site.

### 7.3 NOISE FROM MECHANICAL PLANT

Detailed mechanical plant selections have not been made at this stage. It is expected that a ventilation system that caters to the use of the facility will be installed.

Indicatively, the cumulative sound power level from all additional mechanical plant servicing the site shall be no greater than 100 dB(A) in order to achieve compliance at the nearest residential receivers. This is highly conservative and it is expected that any typical fan selection will be able to achieve compliant noise levels at surrounding residential receivers.

Satisfactory levels will be achievable through appropriate plant selection, location and if necessary, standard acoustic treatments such as duct lining, acoustic silencers, acoustic louvres and enclosures.

# 8 **RECOMMENDATIONS**

The assessment indicates that compliance with the relevant noise criteria can be achieved at all times.

The building shell should be designed and constructed to meet the minimum complying constructions outlined in Section 6.2 of this report.

To ensure ongoing compliance an assessment of new mechanical plant and equipment should be undertaken by a qualified acoustic consultant prior to CC stage to ensure that noise emissions are complaint with the noise emission criteria outlined within this report.

# 9 CONCLUSION

An acoustic assessment of potential noise impacts associated with the proposed RSPCA NSW Spey clinic located at 70 Harley Crescent, Condell Park has been undertaken.

The predicted noise levels have been assessed against project trigger levels determined using the EPA Noise Policy for Industry (to assess noise emissions from the site. The findings are as follows:

- Noise emissions from the operation of the proposed development are predicted to be compliant with all relevant noise criteria.
- Any new ventilation plant should be selected such that the cumulative noise emission from the site will comply with the emission criteria outlined in Section 5.3.3 of this report.
- On this basis, no additional management conditions would be required for the facility to operate during proposed staffed-hours and be compliant with the requirements outlined within this report.

Please contact us should you have any further queries.

Yours faithfully,

Acoustic Logic Pty Ltd Hyde Deng MAAS

### APPENDIX A AMBIENT NOISE MONITORING

This appendix summarises the ambient noise data measured near the subject site, and the calculated noise level descriptors adopted to characterise the existing noise environment.

Monitoring has been undertaken to provide the following ambient data:

- Background noise levels at the site.
- Existing traffic noise levels

#### A.1 UNATTENDED LONG TERM NOISE MONITORING

#### A.1.1 Ambient Noise Descriptors

Ambient noise constantly varies in level from moment to moment, so it is not possible to accurately determine prevailing noise conditions by measuring a single, instantaneous noise level.

To quantify ambient noise, a 15 minute measurement interval is typically utilised. Noise levels are monitored on a continuous basis over this period, and statistical and integrating techniques are used to characterise the noise being measured.

The principal measurement parameters are:

 $L_{eq}$  - represents the average noise energy during a measurement period. This parameter is derived by integrating the noise levels measured over the measurement period.  $L_{eq}$  is important in the assessment of noise impact as it closely corresponds with how humans perceive the loudness of steady state and quasi-steady state noise sources (such as traffic noise).

 $L_{90}$  – This is commonly used as a measure of the background noise level as it represents the noise level heard in the quieter periods during the measurement interval. The L<sub>90</sub> parameter is used to set noise emission criteria for potentially intrusive noise sources since the disturbance caused by a noise source will depend on how audible it is above the pre-existing noise environment, particularly during quiet periods, as represented by the L<sub>90</sub> level.

 $L_{10}$  is used in some guidelines to measure noise produced by an intrusive noise source since it represents the average of the loudest noise levels produced at the source. Typically, this is used to assess noise from licenced venues.

 $L_{max}$  is the highest noise level produced during a noise event, and is typically used to assess sleep arousal impacts from short term noise events during the night. It is also used to assess internal noise levels resulting from aircraft and railway ground vibration induced noise.

 $L_1$  is sometimes used in place of  $L_{max}$  to represent a typical noise level from a number of high level, short term noise events.

#### A.1.2 Monitoring Locations

Monitoring locations are as outlined in Section 3, Figure 1 and detailed as follows:

• M1 – Monitor located along the south boundary facing Harley Crescent.

#### A.1.3 Measurement Period and Equipment Used

Long term unattended noise monitoring was conducted between the 16<sup>th</sup> to 28<sup>th</sup> January 2025.

Unattended noise monitoring was conducted using an Acoustic Research Laboratories Rion-NL42 noise monitor

The monitoring was continuous, with statistical noise levels recorded at 15-minute intervals throughout the monitoring period. Measurements were taken on "A" frequency weighting and fast time response, unless noted otherwise.

All monitoring equipment used retains current calibration - either manufacturers' calibration or NATA certified calibration. The monitors were field calibrated at the beginning and the end of the measurement with no significant drift in calibration noted.

#### A.1.4 Weather Affected and Extraneous/Outlying Data

Periods affected by adverse weather conditions are indicated on the following data graphs. Weather data was obtained from records provided by the Bureau of Meteorology for the following station:

Bankstown Airport AWS

#### A.2 CALCULATION OF REPRESENTATIVE AMBIENT NOISE LEVELS

The noise data for the day, evening and night periods have been processed to determine the period ambient noise levels at the monitoring locations. Noise levels that are in bold type indicate that these periods were determined to have been significantly affected by non-representative noise sources (weather, mechanical plant, etc.) and these periods were excluded from subsequent calculations.

The following tables summarise the daily measurements and the representative rating background noise levels and traffic noise levels at the monitoring location.

Location	Date	ABL			
		Day	Evening	Night	
	16/01/2025	_	45	44	
	17/01/2025	-	-	_	
	18/01/2025	-	-	39	
	19/01/2025	43	44	41	
	20/01/2025	52	40	40	
	21/01/2025	52	38	37	
Location M1	22/01/2025	52	43	40	
	23/01/2025	52	42	37	
	24/01/2025	53	42	35	
	25/01/2025	40	36	35	
	26/01/2025	39	38	35	
	27/01/2025	50	-	36	
	RBL	52	42	37	

#### Table 12 – NPfl Assessment Background Noise Levels – Location M1

#### Table 13 – Measured Traffic Noise Levels – Location M1

Location	Date	Traffic Noise Level dB(A) Leq,1-hour		Traffic Noise Level dB(A)	
		Day	Night	Day L <sub>eq,15-hour</sub>	Night L <sub>eq,9-hour</sub>
Location M1	16/01/2025	60	60	57	54
	17/01/2025	62	56	59	52
	18/01/2025	57	56	55	50
	19/01/2025	57	61	59	53
	20/01/2025	62	57	60	51
	21/01/2025	61	55	59	50
	22/01/2025	61	62	58	55
	23/01/2025	61	57	59	50
	24/01/2025	61	56	59	49
	25/01/2025	62	55	58	49
	26/01/2025	57	65	54	57
	27/01/2025	58	57	56	53

## A.3 UNATTENDED NOISE MONITORING DATA

Unattended noise monitoring locations are outlined in Section 3.



![](_page_21_Figure_0.jpeg)

![](_page_22_Figure_0.jpeg)

![](_page_23_Figure_0.jpeg)

![](_page_24_Figure_0.jpeg)

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![](_page_32_Figure_0.jpeg)

Wind Speed is corrected using factor 0.5000 based on logger location