

ACOUSTIC DA REPORT

Karitane Integrated Care Hub, Carramar

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25 September 2024

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The work reported herein has been carried out in accordance with the terms of membership. We stress that the advice given herein is for acoustic purposes only, and that the relevant authorities should be consulted with regard to compliance with regulations governing areas other than acoustics.

1.0 INTRODUCTION

PKA has been engaged by Angel Mahchut to perform an acoustic assessment pertaining to the proposed development of the existing healthcare facility Karitane Integrated Care Hub, located at 138-150 The Horsley Dr, Carramar. The purposed of this report is to present the results of the acoustic survey conducted and recommendations that must be implemented as part of the DA documentation to be submitted to the Fairfield City Council for approval.

The project involved primarily internal refurbishment and upgrades, with some minor changes to external areas, and the replacement of the rooftop mechanical plant.

The project does not propose to modify the existing façade (excepting minor changes that are not directly impacted by traffic noise), and therefore traffic noise intrusion has not been required at this stage.

2.0 SUMMARY

An acoustic assessment has been conducted in accordance with the acoustic requirements of the Fairfield City Council, the NSW EPA Noise Policy for Industry 2017 (NPfI), and other relevant Australian acoustic guidelines to assess noise breakout and set noise goals for the development and immediate surroundings.

Unattended noise measurements were conducted on site to obtain ambient and traffic noise levels. A noise monitor was placed on site for a period of 7 days to measure the day and night-time traffic noise levels. Based on the measurement results, noise goals have been established to comply with the NPfI design limits.

Providing the recommendations detailed in Section 6.0 are implemented, the proposed healthcare refurbishment project at Karitane Integrated Care Hub, Carramar will comply with the acoustic requirements of the Fairfield City Council.

3.0 SITE DESCRIPTION

The site is located at 138-150 The Horsley Drive, Carramar. The site is bound by commercial (primarily healthcare) to the south, west, and north; to the east is The Horsley Drive, with residential premises on the opposite side of the street. The residences (151 – 159) are identified as the nearest and sensitive-most receivers. The site location is shown in Figure 3-1.

Figure 3-1 Site Location



R1 Residential Premises, 151-159 The Horsley Drive

R2 Healthcare Facility, 152-168 The Horsley Drive

R3 Aged Care Facility, Heiden Park Lodge, 16 Matthews St

R4 Healthcare Facility, 128-136 The Horsley Drive

4.0 NOISE CRITERIA

4.1 NSW EPA Noise Policy for Industry (NPfI)

Noise generated from commercial premises and from mechanical noise to other external receivers is generally assessed against the requirements of the current *NSW EPA Noise Policy for Industry 2017 (NPfI)*. The policy sets out separate criteria to ensure environmental noise goals are met. The first criterion considers intrusive noise to residential properties and the second is set to ensure the amenity of the land use is protected. The lower value of both criteria is considered to be the Project noise trigger level, which is the limit of the $L_{Aeq, 15min}$ noise level that must not be exceeded for the corresponding period of the day.

Amenity Criterion

To limit continuing increases in noise levels, the maximum ambient noise level within an area from commercial noise sources should not normally exceed the levels as specified in Table 2.2 of the policy for the specified time of the day. The following contains a summary of amenity noise levels.

Table 4-1 Noise Criteria - Amenity for receiver buildings

Type of receiver	Time of day	Recommended Amenity Noise Level $L_{Aeq, (period)}$
Residential (Urban)	Day	60 dB(A)
	Evening	50 dB(A)
	Night	45 dB(A)
Commercial	When in use	65 dB(A)

To ensure that industrial noise levels (existing plus new) remain within the recommended amenity noise levels for an area, a project amenity noise level applies for each new source of industrial noise as follows:

Project amenity noise level for development = recommended amenity noise level **minus 5 dB(A)**.

To standardise the time periods for the intrusiveness and amenity noise levels, this policy assumes that the Amenity $L_{Aeq, 15min}$ will be taken to be equal to the $L_{Aeq, period} + 3$ decibels (dB).

Intrusiveness Criterion

The intrusiveness of a stationary noise source may be considered acceptable if the average of the maximum A-weighted levels of noise, $L_{Aeq, 15 minute}$ from the source do not exceed by more than 5dB the Rating Background Level (RBL) measured in the absence of the source. This applies during all times of the day and night, and is typically only applied to residential receivers. There also exists an adjustment factor to be applied as per the character of the noise source. This includes factors such as tonal, fluctuating, low frequency, impulsive, intermittent etc. qualities of noise. The RBL is determined in accordance with Section 2.3 of the NSW EPA NPfI. The intrusiveness criterion is $L_{Aeq, 15 minute} < RBL + 5$.

Amenity noise levels in areas of high traffic noise

While this site is impacted by traffic, the traffic noise levels measured do not appear to require a traffic noise correction as per the NPfI guidelines.

5.0 NOISE SURVEY AND PROJECT CRITERIA

5.1 Methodology

Unattended noise monitoring was conducted on site between 22nd and 29th August 2024 to record the existing ambient noise levels at the boundary of the site. The noise monitor was programmed to store the L_n percentile noise levels for each 15-minute sampling period. Measurements were made of L_{min} , L_{max} , L_{90} , and L_{eq} and were later retrieved for analysis. The position of the noise monitor is shown in Figure 3-1. The results and summary of the noise monitoring used in establishing the background noise levels are listed in graphical form in Appendix B of this report. The assessment periods are defined by the NSW NPfI are as Daytime: 7 am to 6 pm, Evening: 6 pm to 10 pm and Night: 10 pm to 7 am. Adverse periods of weather were manually excluded from the overall measurements.

5.2 Instrumentation

Noise measurements were conducted using the following equipment:

- Sound analyser NTi XL2 Type Approved, Serial No. A2A-15268-E0.
- Sound calibrator Pulsar Model 105 Acoustic Calibrator, Serial number 83440.

The instruments were calibrated before and after the noise measurements and there were no adverse deviations between the two. The analysers are type 1 and comply with AS IEC 61672.2-2004. The instruments carry traceable calibration certificates.

5.3 Project Noise Goals

The tables below present the results of the ambient noise monitor measurements. As a guide, the noise criteria defined in the NPfI is listed below (Table 5-1) as no additional conditions have been provided by the council at this stage. The assessment periods are defined by the NSW NPfI are as Daytime: 7 am to 6 pm, Evening: 6 pm to 10 pm and Night: 10 pm to 7 am.

Table 5-1 NPfI Project Noise Trigger Levels

All values in dB(A)

Residential Receivers	Period	Measured RBL (L_{A90})	Acceptable Noise Levels $L_{Aeq(period)}$	NSW Noise Policy for Industry Criteria		Project Noise Trigger Levels $L_{Aeq15min}$
				Amenity $L_{Aeq15min}$	Intrusiveness $L_{Aeq15min}$	
R1	Day	56	60	58	61	58
	Evening	56	50	48	61	48
	Night	44	45	43	49	43

6.0 ASSESSMENT AND RECOMMENDATIONS

As the proposed use of the building does not include conventionally noise generating activities, the only assessment relevant to the noise breakout control measures is vehicular movement and mechanical noise. There is no proposed modification to the on-site carparking and is there not required to be reassessed.

6.1 Mechanical Plant & Equipment

PKA have coordinated with Angel Mahchut regarding mechanical plant location. It has been determined that the mechanical plant is to be located within the existing rooftop plant area at the northern/central area of the roof level. This location faces away from the residential receiver located at The Horsley Drive. This is acoustically suitable, and compliance can be achieved with minimal acoustic treatment.

As the selection and plant data is unavailable for the DA stage, all plant items, (including any condensers, rooftop plant, exhaust fans) must be designed to acoustically comply with the criteria established in Table 5-1 of this report.

APPENDIX A DRAWINGS USED TO PREPARE REPORT

This report was prepared using drawings provided by Angel Mahchut Pty Ltd (Job ID: 24022)

No.	Rev.	Title	Date
A00	DA1	General Notes & Location Plan	April 2024
A01	DA1	Site Plan and Areas	April 2024
A02	DA1	Overall Plan and Area of Work	April 2024
A03	DA1	Demolition Plan	April 2024
A04	DA1	General Arrangement Plan	April 2024
A05	DA1	Reflected Ceiling Plan	April 2024
A10	DA1	Sections and Elevations - Sheet 1	April 2024
A11	DA1	Sections and Elevations - Sheet 2	April 2024
A20	DA1	3d Views and Colours	April 2024

APPENDIX B NOISE MEASUREMENTS (GRAPHICAL)

12909 Karitane Integrated Care Hub, Carramamba

Project Address: 138-150 The Horsley Dr, Carramar

Logger Location: $\approx 2\text{m}$ in from site boundary, opposite 155 The Horsley Dr

PKA Acoustic Consulting

		Background Noise Levels L _{A90} dB					
		Daytime 07:00 - 18:00		Evening 18:00 - 22:00		Nighttime 22:00 - 07:00	
		Measured	Corrected	Measured	Corrected	Measured	Corrected
Thursday	22/08/2024			58.3	58.3	45.4	45.4
Friday	23/08/2024	56.9	56.9	58.3	58.3	43.7	43.7
Saturday	24/08/2024	56.1	56.1	55.8	55.8	41.9	41.9
Sunday	25/08/2024	54.2	54.2	55.9	55.9	44.1	44.0
Monday	26/08/2024	54.6	54.6	52.9	52.9	42.9	42.9
Tuesday	27/08/2024	55.4	55.4	55.6	55.6	43.8	43.8
Wednesday	28/08/2024	56.9	56.7	55.3	55.1	41.9	41.9
Thursday	29/08/2024						
Rating Background Level (RBL)		56	56	56	56	44	44

		Existing Noise Levels L _{Aeq} dB					
		Daytime 07:00 - 18:00		Evening 18:00 - 22:00		Nighttime 22:00 - 07:00	
		Measured	Corrected	Measured	Corrected	Measured	Corrected
Thursday	22/08/2024			67.5	67.5	66.5	66.5
Friday	23/08/2024	68.0	68.0	67.8	67.8	65.1	65.1
Saturday	24/08/2024	66.7	66.7	65.1	65.1	61.0	61.0
Sunday	25/08/2024	64.9	64.9	64.3	64.3	71.6	63.1
Monday	26/08/2024	71.6	65.3	64.1	64.1	63.3	63.3
Tuesday	27/08/2024	65.8	65.8	65.1	65.1	62.6	62.6
Wednesday	28/08/2024	66.1	66.0	64.5	64.4	62.6	62.6
Thursday	29/08/2024						
Average Noise Level (L _{Aeq})		68	66	66	66	66	64

12909 Karitane Integrated Care Hub, Carramar

Project Address: 138-150 The Horsley Dr, Carramar

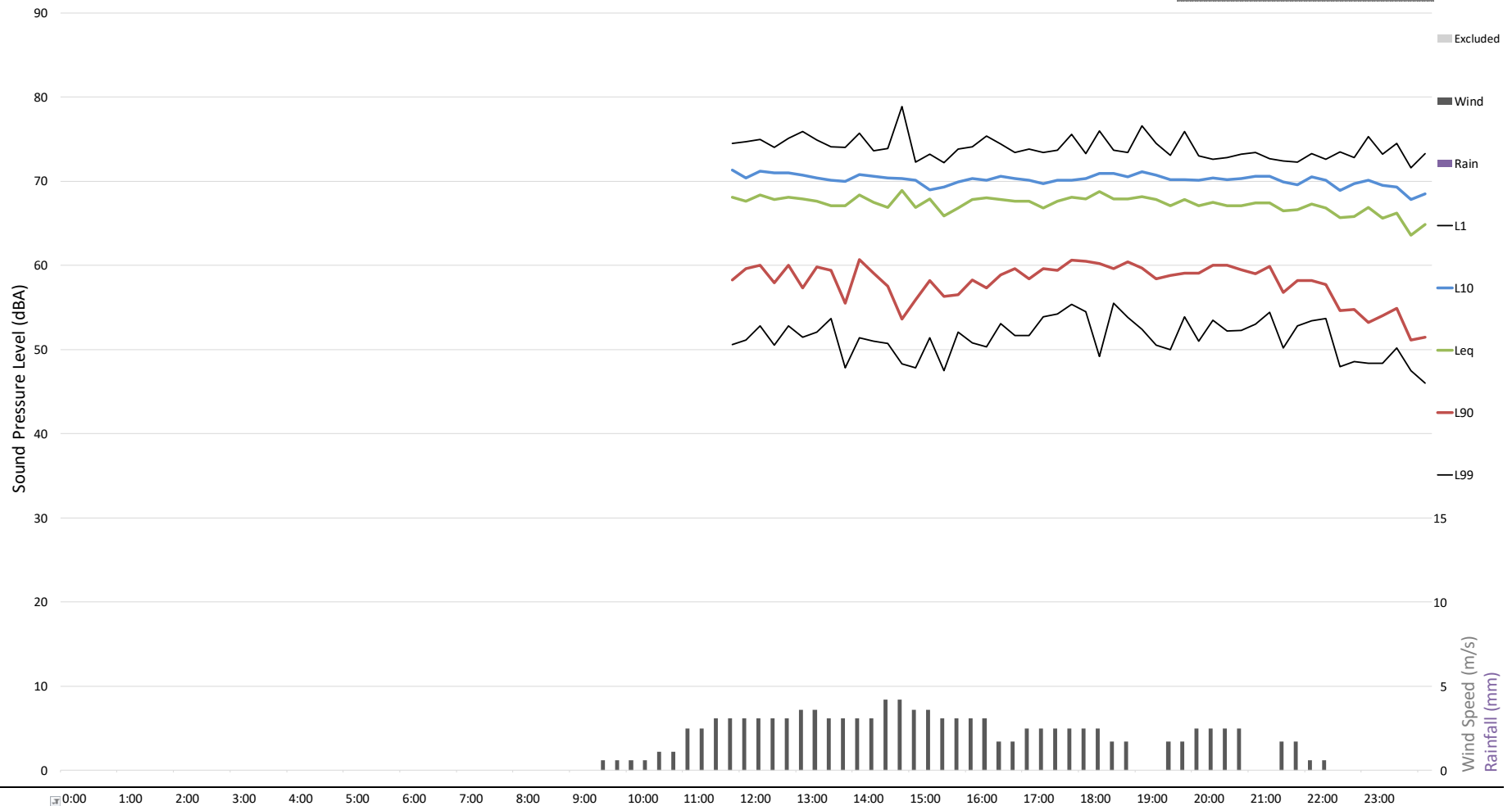
Logger Location: ≈2m in from site boundary, opposite 155 The Horsley Dr

BOM weather data: Bankstown IDN60901

22/08/2024 Thursday
Existing Ambient Noise Levels (dBA)

PKA Acoustic Consulting

Daytime		Evening		Nighttime	
07:00 - 18:00		18:00 - 22:00		22:00 - 07:00	
Measured	Corrected	Measured	Corrected	Measured	Corrected
dB		67.5	67.5	66.5	66.5
dB		58.3	58.3	45.4	45.4



12909 Karitane Integrated Care Hub, Carramar

Project Address: 138-150 The Horsley Dr, Carramar

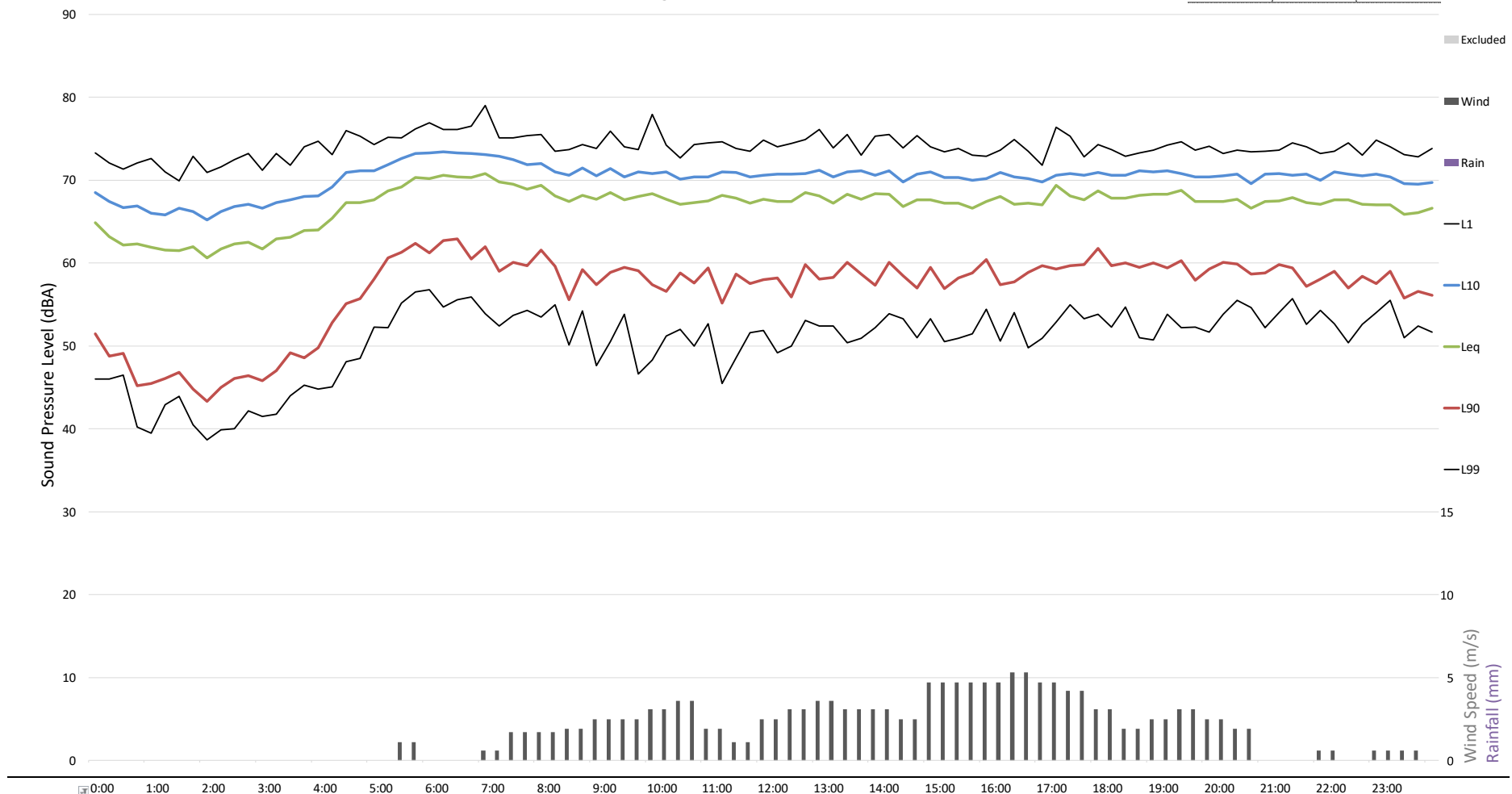
Logger Location: ≈2m in from site boundary, opposite 155 The Horsley Dr

BOM weather data: Bankstown IDN60901

PKA Acoustic Consulting

23/08/2024 Friday
Existing Ambient Noise Levels (dBA)

	Daytime 07:00 - 18:00		Evening 18:00 - 22:00		Nighttime 22:00 - 07:00	
	Measured	Corrected	Measured	Corrected	Measured	Corrected
L _{Aeq} dB	68.0	68.0	67.8	67.8	65.1	65.1
L _{A90} dB	56.9	56.9	58.3	58.3	43.7	43.7



12909 Karitane Integrated Care Hub, Carramar

Project Address: 138-150 The Horsley Dr, Carramar

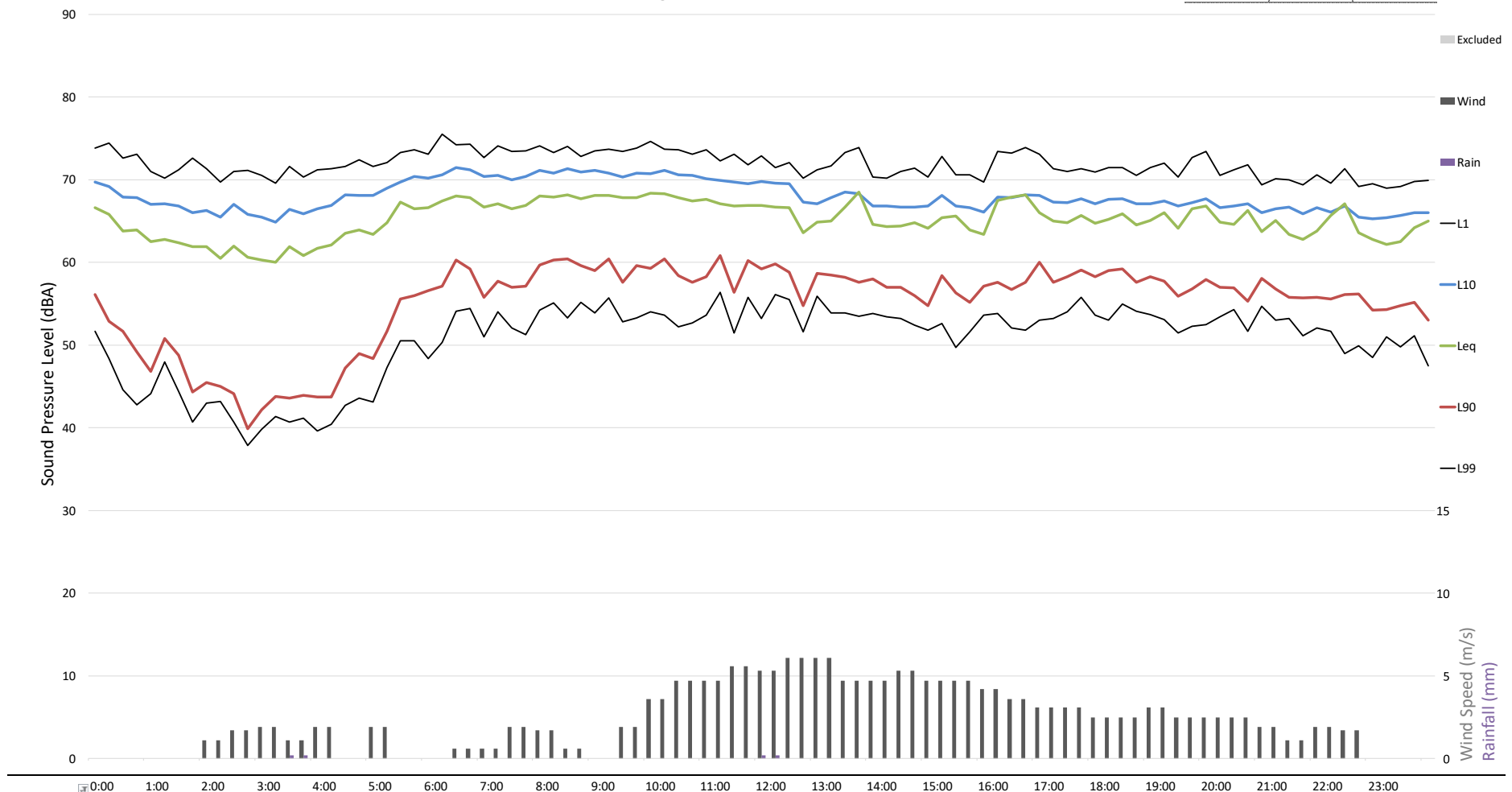
Logger Location: ≈2m in from site boundary, opposite 155 The Horsley Dr

BOM weather data: Bankstown IDN60901

PKA Acoustic Consulting

24/08/2024  Saturday
Existing Ambient Noise Levels (dBA)

	Daytime		Evening		Nighttime	
	07:00 - 18:00		18:00 - 22:00		22:00 - 07:00	
	Measured	Corrected	Measured	Corrected	Measured	Corrected
L _{Aeq} dB	66.7	66.7	65.1	65.1	61.0	61.0
L _{A90} dB	56.1	56.1	55.8	55.8	41.9	41.9



12909 Karitane Integrated Care Hub, Carramar

Project Address: 138-150 The Horsley Dr, Carramar

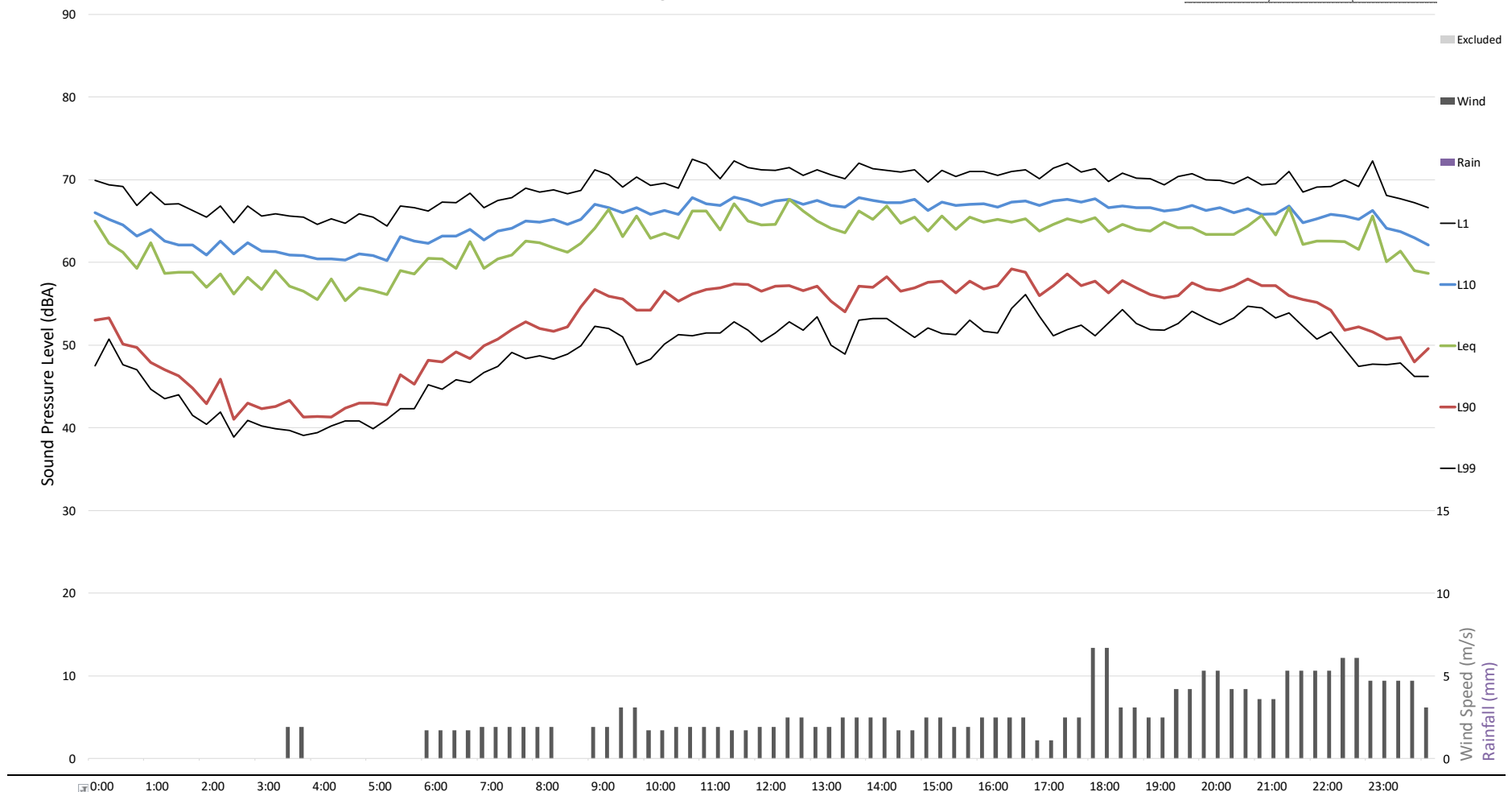
Logger Location: ≈2m in from site boundary, opposite 155 The Horsley Dr

BOM weather data: Bankstown IDN60901

25/08/2024 Sunday
Existing Ambient Noise Levels (dBA)

PKA Acoustic Consulting

	Daytime 08:00 - 18:00		Evening 18:00 - 22:00		Nighttime 22:00 - 08:00	
	Measured	Corrected	Measured	Corrected	Measured	Corrected
L _{Aeq} dB	64.9	64.9	64.3	64.3	71.6	63.1
L _{A90} dB	54.2	54.2	55.9	55.9	44.1	44.0



12909 Karitane Integrated Care Hub, Carramar

Project Address: 138-150 The Horsley Dr, Carramar

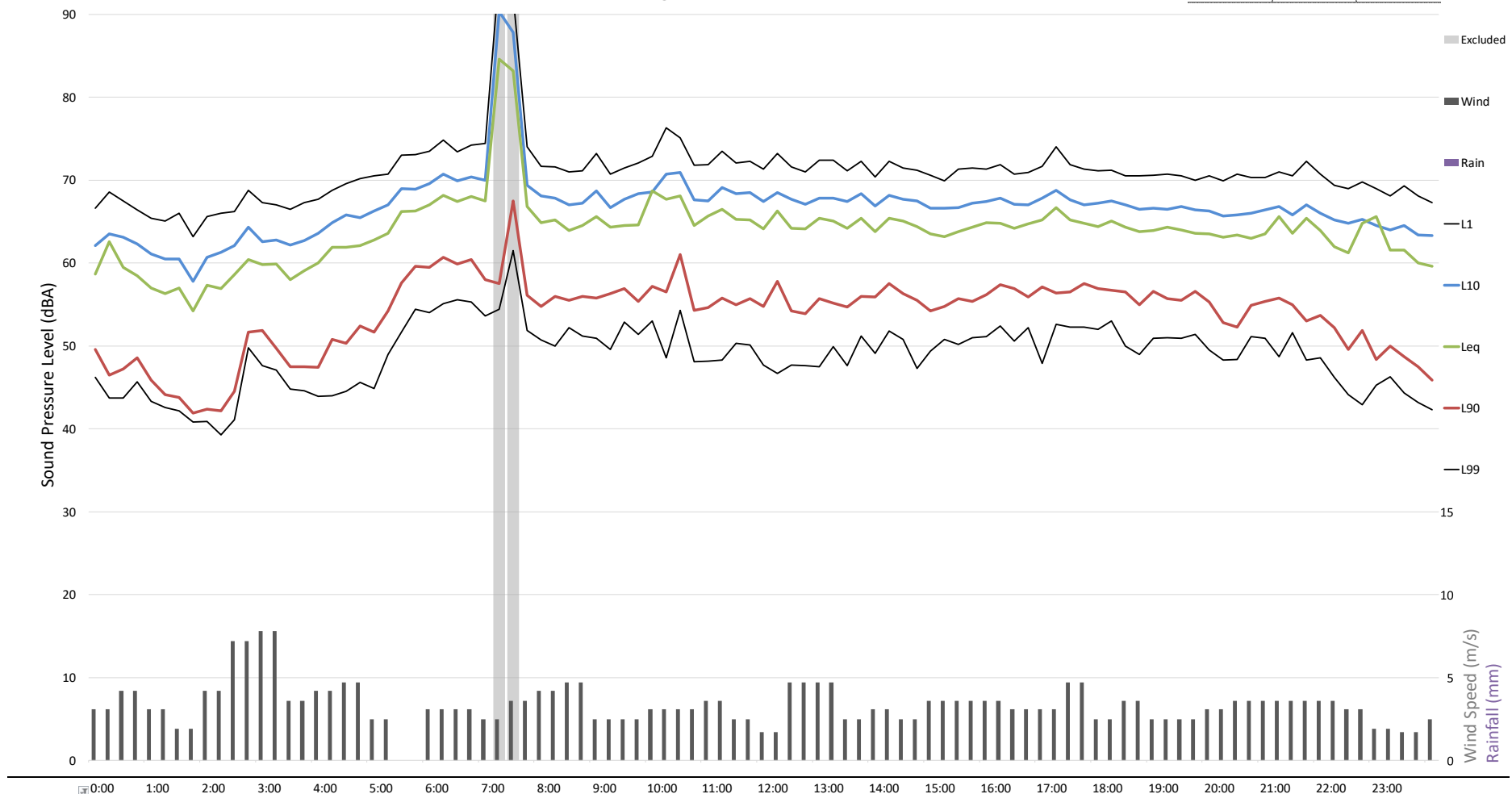
Logger Location: ≈2m in from site boundary, opposite 155 The Horsley Dr

BOM weather data: Bankstown IDN60901

PKA Acoustic Consulting

26/08/2024  Monday
Existing Ambient Noise Levels (dBA)

	Daytime 07:00 - 18:00		Evening 18:00 - 22:00		Nighttime 22:00 - 07:00	
	Measured	Corrected	Measured	Corrected	Measured	Corrected
L _{Aeq} dB	71.6	65.3	64.1	64.1	63.3	63.3
L _{A90} dB	54.6	54.6	52.9	52.9	42.9	42.9



12909 Karitane Integrated Care Hub, Carramar

Project Address: 138-150 The Horsley Dr, Carramar

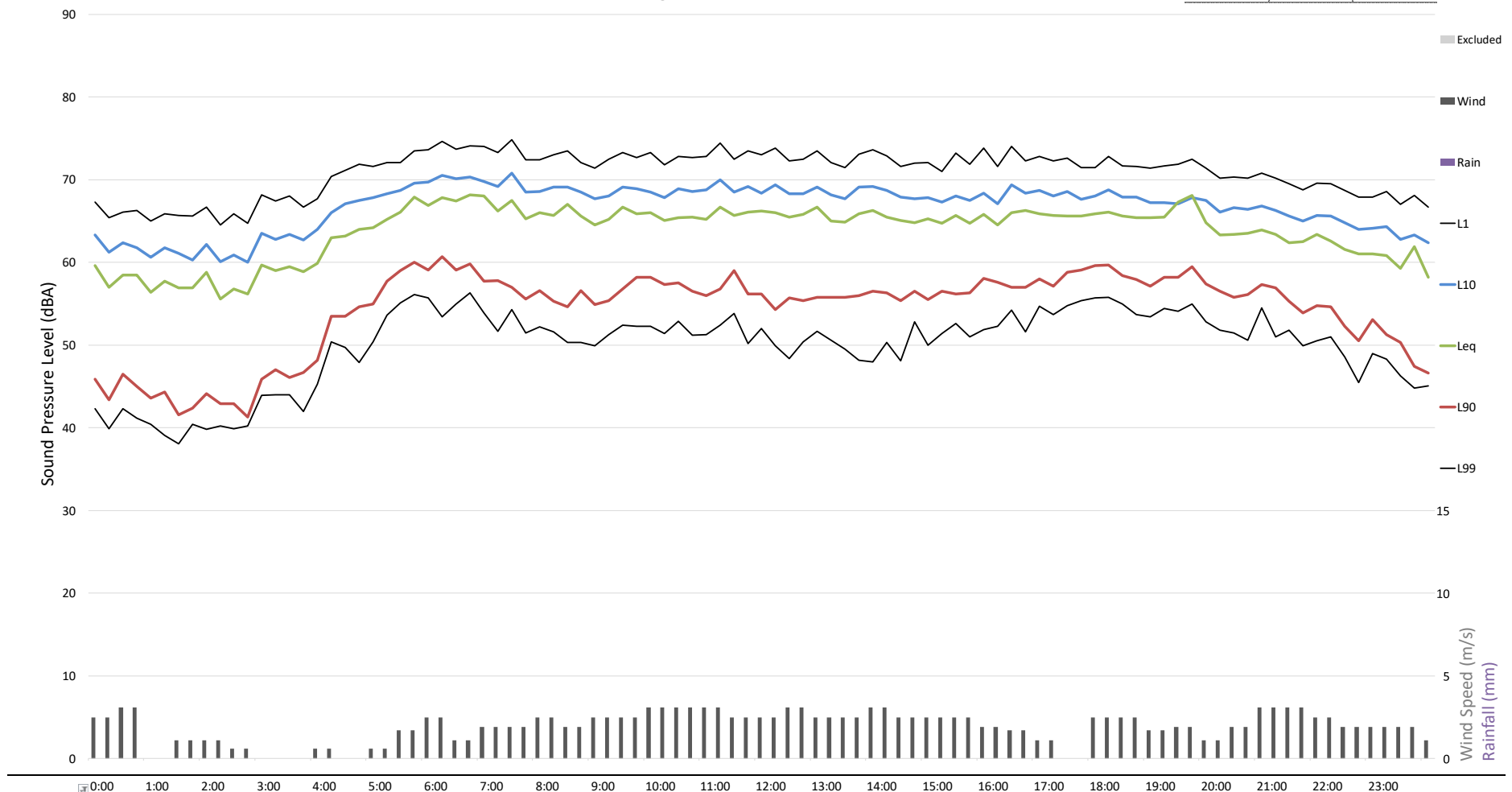
Logger Location: ≈2m in from site boundary, opposite 155 The Horsley Dr

BOM weather data: Bankstown IDN60901

27/08/2024 Tuesday
Existing Ambient Noise Levels (dBA)

PKA Acoustic Consulting

	Daytime 07:00 - 18:00		Evening 18:00 - 22:00		Nighttime 22:00 - 07:00	
	Measured	Corrected	Measured	Corrected	Measured	Corrected
L _{Aeq} dB	65.8	65.8	65.1	65.1	62.6	62.6
L _{A90} dB	55.4	55.4	55.6	55.6	43.8	43.8



12909 Karitane Integrated Care Hub, Carramar

Project Address: 138-150 The Horsley Dr, Carramar

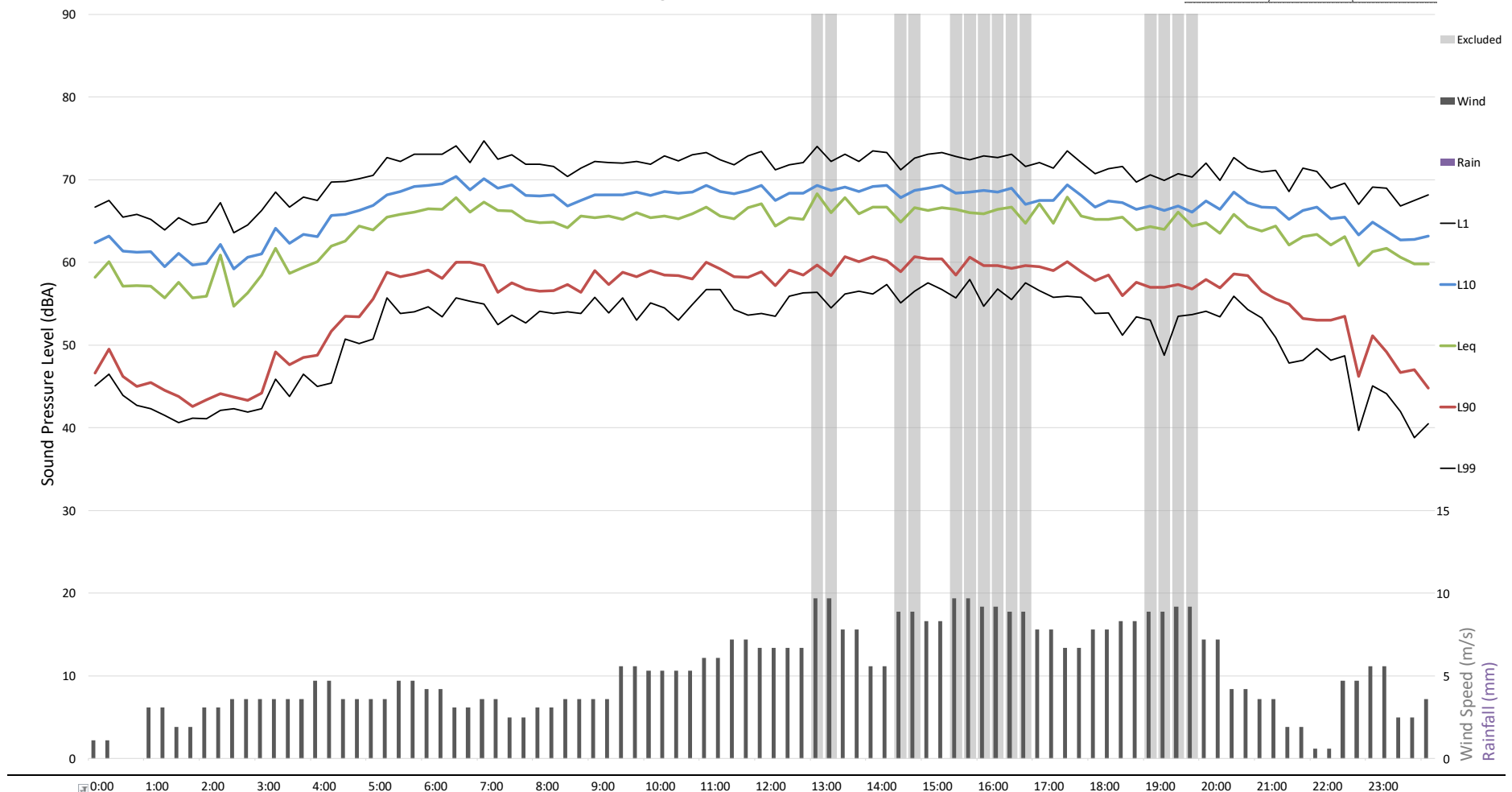
Logger Location: ≈2m in from site boundary, opposite 155 The Horsley Dr

BOM weather data: Bankstown IDN60901

PKA Acoustic Consulting

28/08/2024 Wednesday
Existing Ambient Noise Levels (dBA)

	Daytime 07:00 - 18:00		Evening 18:00 - 22:00		Nighttime 22:00 - 07:00	
	Measured	Corrected	Measured	Corrected	Measured	Corrected
L _{Aeq} dB	66.1	66.0	64.5	64.4	62.6	62.6
L _{A90} dB	56.9	56.7	55.3	55.1	41.9	41.9



12909 Karitane Integrated Care Hub, Carramar

Project Address: 138-150 The Horsley Dr, Carramar

Logger Location: ≈2m in from site boundary, opposite 155 The Horsley Dr

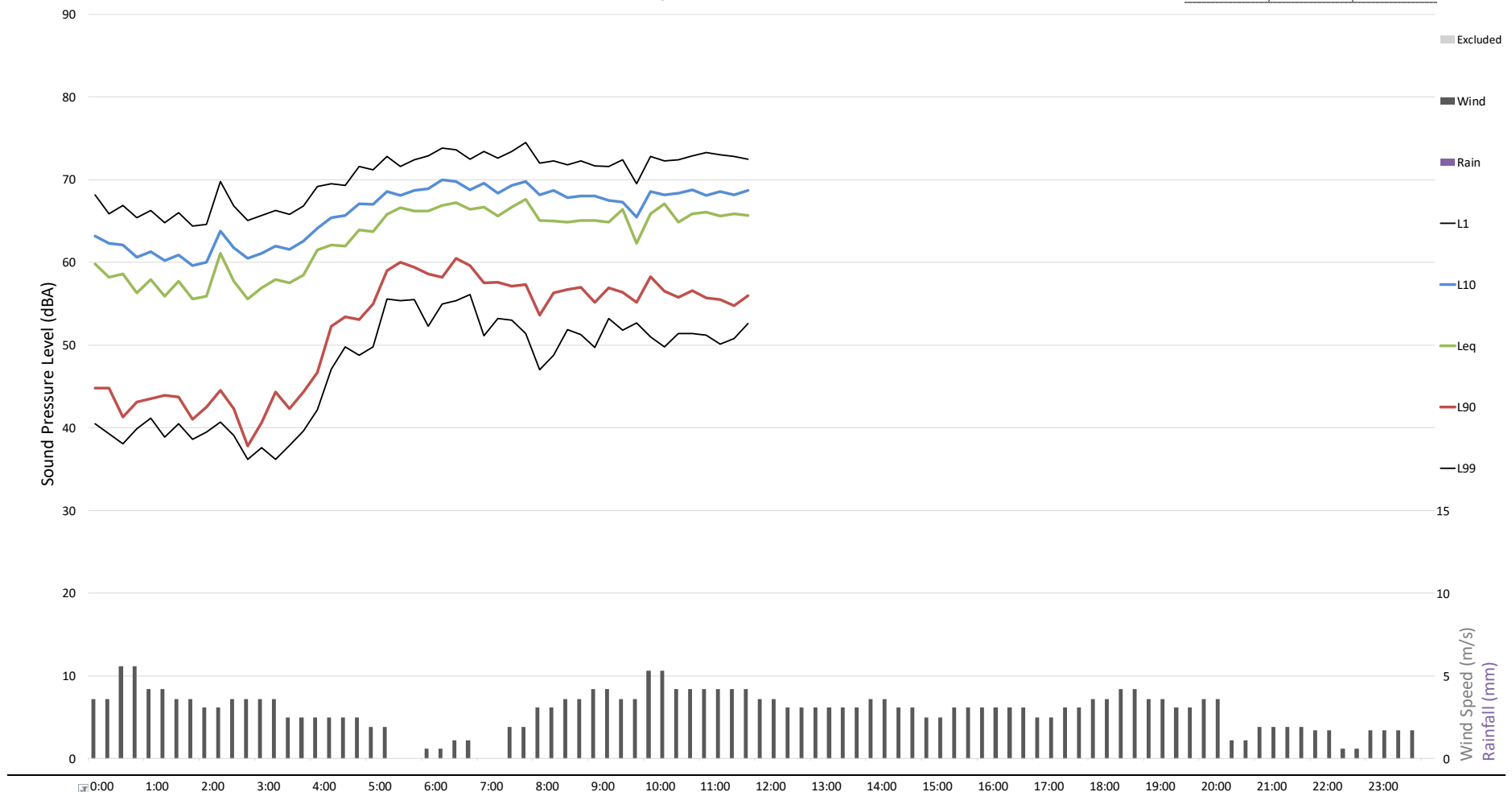
BOM weather data: Bankstown IDN60901

29/08/2024 Thursday
Existing Ambient Noise Levels (dBA)

PKA Acoustic Consulting

Daytime	Evening	Nighttime
07:00 - 18:00	18:00 - 22:00	22:00 - 07:00
Measured Corrected	Measured Corrected	Measured Corrected

L _{Aeq} dB		
L _{A90} dB		





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