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Acoustic & Vibration Impact Report

For

Proposed Gymnasium

at No. 3 Minna Close, Belrose

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Acoustical
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1.0 SCOPE OF WORK

ANAVS, Acoustic, Noise & Vibration Solutions Pty Ltd was engaged to investigate the environmental noise & vibration impact of the proposed change of use of existing commercial tenancy to a Gymnasium at No. 3 Minna Close, Belrose (Figure 1 – Site Location) on the surrounding environment, as per Northern Beaches Council requirements.

This report is carried out in accordance with the NSW Noise Policy for Industry (2017), Noise Guide for Local Government, DEC 2006 document titled Assessing Vibration: a technical guideline and other related Northern Beaches Council requirements.

This commission involves the following:

- Inspect the site and environs.
- Measure the background noise levels at critical locations and times.
- Prepare an Environmental Noise Impact Report.
- Establish acceptable noise level criterion.
- Quantify noise emissions from the proposed Gymnasium.
- Calculate the level of noise emission, taking into account building envelope transmission loss, screen walls and distance attenuation.
- Provide in principle noise control recommendations (if necessary).

The following report has been prepared in conjunction with the architectural plans by Archi Spectrum dated 19th September, 2024 and the traffic engineer report by Modus dated 24th September, 2024.

2.0 SITE & OPERATIONS DESCRIPTION

The subject site is occupied by an existing commercial building comprising three (3) levels of commercial tenancies and three (3) levels of underground parking. The proposed gymnasium will be located on the ground floor of the building at No. 3 Minna Close, Belrose (Figure 2 – Site Plan). It is anticipated that a maximum of 30 patrons will be on site at any one time during the 24/7 operating hours.

The site is located within a light industrial/commercial environment (Figure 3 – Surrounding Environment) with only commercial properties being located in the close vicinity of the proposed Gym. The nearest residential receiver is located approximately 900 m south-east of the site and is **not expected to be affected by the noise from the Gym operation [Distance mitigation is $20 \log(900) \sim 60 \text{ dB(A)}$]**.

The nearest residential and commercial receivers that have the potential to be impacted by the proposed Gymnasium are located as per Table 2.1 below (Figure 4 – Nearest Residential and Commercial Receivers).

Table 2.1 – Nearest Residential Receivers

Receiver	Address	Type of Dwelling
R1*	No. 287 Forest Way, Terrey Hills (South-East of Site)	Single-Storey Residential Dwelling.
C1	Level 1, No. 3 Minna Close, Belrose (Above the Site)	Vacant Commercial Tenancy above proposed gymnasium
C2	No. 8 Minna Close, Belrose (South of Site)	Two-Storey Commercial Building (Tbc Global)
C3	No. 2 Minna Close, Belrose (East of Site)	Three-Storey Commercial Building (Natures Care Australia)

***Residential receiver is situated approximately 900m away from the noise and vibration source. Due to distance mitigation [20log (900) ~ 60 dB(A)] and attenuation from surrounding buildings shielding the residential receivers, the proposed Gymnasium will not affect the existing acoustic environment of any neighbouring residential receivers.**

The existing building at No. 3 Minna Cl, Belrose currently provides a total of one-hundred-and-eighty-eight (188) car parking spaces in the basement, in addition to twenty-eight (28) car parking spaces provided at the rear of the building. There will be thirty-seven (37) car spaces allocated for the proposed gymnasium.

The proposed Gymnasium will have the following operational details:

Hours of Operation	Max No. of Patrons/Staff at any one time	Operational Description
Monday – Sunday: 24 Hours	Thirty (30) Patrons + One (1) Staff member + One (1) Personal Fitness Trainer any time	Gymnasium - Free-weight Training, Machine Training, Cardio/Functional Training

Commercial properties located adjacent to the proposed Gymnasium and their associated operating hours are located as below:

- **Tbc Global – C2**
- **Natures Care Australia – C3**

The existing background noise is dominated by noise generated by the adjacent commercial environment (including all associated mechanical plant & equipment) and traffic noise generated by Minna Close & Mona Vale Rd.

The noise & vibration emissions from the operation of the gymnasium must not exceed the acceptable levels at the nearby receptor locations. Noise control will be required for the proposed gymnasium to comply with the noise criteria set out in Section 4 of this report. The noise and vibration controls in Section 6 of this report are reasonable and feasible in reducing the noise from the proposed premises to acceptable levels.

3.0 EXISTING NOISE ASSESSMENT, INSTRUMENTATION & RESULTS

On the 8th of August 2024 unattended noise measurements were carried out north of the site in order to determine existing background noise levels. The unattended noise survey was carried out for a period of seven (7) days between the 8th August, 2024 and the 15th August, 2024 (Figure 5 – Noise Reading location Point A).

The unattended noise survey was conducted to determine a conservative reading of the existing acoustic environment during the day [7:00 – 18:00], evening [18:00 – 22:00] and night [22:00 – 7:00] and to determine the $L_{(A90, 15 \text{ minutes})}$ and RBL.

All unattended sound level measurements and analysis performed throughout this project are carried out with a NSRTW_MK3 wireless sound level data logger (Serial No. Alv8DHWQUXU3grtCZwJZPD- Office Tag- machine 4. The sound logger specifications are as follows:

- Type 1 digital MEMS microphone
- Non-volatile 128 Mb recording memory
- Records L-max, L-min and Leq levels
- Log interval adjustable from 125 ms (8 points per second) up to hours
- A, C and Z weighting curves
- Oscilloscope and spectrum analyser features
- Observes and records 100% of the acoustic signal
- Software calculates global Leq according to ISO and OSHA methods
- WIFI connectivity to report measured levels remotely

- Weatherproof casing designed for indoor/outdoor applications
- Activity detection and logging.
- Long-term measurement and recording of acoustic levels for environmental impact studies.

The logger is factory calibrated and calibration certificate dated 05/07/2022 is presented in Figure 6 – Calibration Certificate.

The microphone of the noise reading machine was positioned 1.5m above ground level. The factory-calibrated noise reading machine was calibrated prior to and after reading with our Svantek SV 33A S/N: 90200 Class 1 Calibrator. Any readings affected by strong wind or rain have been disregarded ⁽¹⁾.

The Full Average Statistical Noise Parameters $L_{(Aeq, 15 \text{ minutes})}$, $L_{(A90, 15 \text{ minutes})}$, $L_{(A10, 15 \text{ minutes})}$, $L_{(A1, 15 \text{ minutes})}$ are presented in Figure 7 – Noise Survey – Point A. A Summary of those readings is presented in the table below.

Table 3.1 - Existing Noise Survey Results at Point A
7th October, 2024 - 15th October, 2024

Location	Time Period	Arithmetic Mean LAeq dB(A)	Arithmetic Mean LA90 dB(A)	RBL dB(A)
Point A	Day Time (7:00am-6:00pm)	50	43	40
	Evening Time (6:00pm-10:00pm)	49	43	41
	Night/Early Morning (10:00pm – 7:00am)	44	40	36

* RBL is calculated in accordance with the Noise Policy for Industry 2017 (Fact Sheet B).

L₉₀ – the level of noise that is exceeded for 90% of the time over which a given sound is measured. This is considered to represent the background noise level.

RBL- Rated background noise levels as determined in accordance with Fact Sheet B as per the Noise Policy for Industry 2017.

4.0 ACCEPTABLE NOISE & VIBRATION LEVELS

The closest neighbouring residential receiver is located approximately 900 m away from the noise and vibration source. Due to distance mitigation and attenuation from surrounding buildings shielding the residential receivers, the proposed Gymnasium will not affect the existing acoustic environment of any neighbouring residential receivers.

Noise and vibration emanating from the proposed Gymnasium into the neighbouring commercial receivers C1, C2 & C3 are governed by the Noise Policy for Industry 2017, AS 2107:2016 Acoustics- Recommended Design Sound Levels and Reverberations times for Building Interiors-, Department of Environment & Conservation Document titled 'ASSESSING VIBRATION: A TECHNICAL GUIDELINE' and AS 2670.2-1990 Evaluation of human exposure to whole-body vibration - Continuous and shock-induced vibration in buildings (1 to 80 Hz).

4.1 NSW NOISE POLICY FOR INDUSTRY (2017)

The noise from the proposed Gymnasium is governed under Section 2 of the Noise Policy for Industry 2017. The above policy seeks to promote environmental well-being through preventing and minimizing noise by providing a framework and process for deriving noise limits conditions for consent and licenses.

The Noise Policy for Industry 2017 recommends two separate noise criteria to be considered, the Intrusive Noise Criteria and the Amenity Noise Criteria. A project noise trigger level being the lowest of the amenity and the intrusiveness noise level is then determined.

If the predicted noise level L_{Aeq} from the proposed project exceeds the noise trigger level, then noise mitigation is required. The extent of any 'reasonable and feasible' noise mitigation required whether at the source or along the noise path is to ensure that the predicted noise level L_{Aeq} from the project at the boundary of most affected residential receiver above is not greater than the noise trigger level.

4.1.1 AMENITY NOISE CRITERIA

The amenity noise levels presented for different residential categories are presented in Table 2.2 of the Noise Policy for Industry 2017. These levels are introduced as guidance for appropriate noise levels in residential areas surrounding industrial areas.

For the proposed Gymnasium at No. 3 Minna Close, Belrose, the recommended amenity noise levels are presented in table 4.1.1 below:

Table 4.1.1- Recommended Amenity Noise levels

Type of Receiver	Noise Amenity Area	Time of Day	Recommended Leq Noise Level, dB(A)
Residence	Urban	Day	60
		Evening	50
		Night	45
Commercial	All	When in Use	65
Industrial	All	When in Use	70

Project amenity noise level for industrial developments = recommended amenity noise level (Table 2.2) minus 5 dB(A)

To convert from a period level to a 15-minute level, a plus 3 is added as per section 2.2 of the policy.

Therefore, the project amenity noise levels for the proposed gymnasium are as follows:

Day Time: $65 - 5 + 3 = 62 \text{ dB(A)}$ - When in Use-

4.1.2 INTRUSIVE NOISE CRITERIA

Section 2.3 of the Noise Policy for Industry summarizes the intrusive criteria as below:

$$L_{\text{Aeq, 15 minute}} \leq \text{rating background level plus 5}$$

The above applies to all residential receivers and not to any commercial/industrial receiver. Neighbouring residential receivers are located approximately 900m away from the noise and vibration source. Due to distance mitigation and attenuation from surrounding buildings shielding the proposal, the proposed Gymnasium will not affect the existing acoustic environment of any neighbouring residential receivers

4.1.3 PROJECT NOISE TRIGGER LEVEL

A summary of intrusiveness and amenity noise levels as determined in sections 4.1.1 & 4.1.2 are shown in table 4.1.3 below:

Table 4.1.3 - Summary of Intrusive and Amenity noise levels

Period	Intrusiveness Noise Level	Project Amenity Noise level
Day Time (7:00am – 6:00pm)	-	62
Evening Time (6:00pm – 10:00pm)	-	N/A
Night-Time (10:00pm – 7:00am)	-	N/A

The project noise trigger level is the lower (that is, the most stringent) value of the amenity and intrusiveness noise levels for the day and evening. Therefore, the project noise trigger levels for the proposed development are as shown below:

- **Daytime:** $L_{Aeq,15\text{ min}}$ **62 dB(A)**

4.2 AUSTRALIAN STANDARD 2107:2106

It is usual practice, when we find it necessary to recommend internal sound levels in buildings to refer to Australian/New Zealand Standard AS/NZS 2107:2016 “Acoustics – Recommended Design Sound Levels and Reverberations times for Building Interiors”.

AS/NZS 2107:2016 sets out design internal noise levels and reverberation times for different buildings depending on the use of these structures. The noise levels recommended in AS/NZS 2107:2016 take into account the function of the area and apply that to the sound level measured within the space unoccupied although ready for occupancy.

In Table 1, Page 10, the standard recommends the following noise levels for commercial/industrial and sports buildings.

Item	Type of occupancy/activity	Design sound level ($L_{Aeq,t}$) range	Design reverberation time (T) range, s
3	INDUSTRIAL BUILDINGS		
	Assembly lines—		
	Light machinery	< 70	See Note 1
	Packaging and delivery	< 60	See Note 1
	Process control rooms	< 60	< 0.7
	Foremen's offices	45 to 50	0.4 to 0.7
	Industrial processing or manufacturing	See Note 6	See Note 1
	Laboratories or test areas	40 to 50	< 0.8
	Lunch rooms	40 to 50	< 0.8
	Precision assemblies	40 to 50	< 0.8
	Sick bays	40 to 50	0.6 to 0.7
4	SPORTS AND CLUBS BUILDING		
	Indoor pools	50 to 60	< 2.0
	Indoor sports—		
	With coaching	< 45	Curve 4*
	Without coaching	< 50	Curve 4*
	Leisure centre and gaming	40 to 50	Curve 4*

4.3 DEPARTMENT OF ENVIRONMENT & CONSERVATION NSW **'ASSESSING VIBRATION: A TECHNICAL GUIDELINE' AND AS** **2670.2-1990.**

In addition to noise limits, floor vibration levels in habitable rooms should comply with the Department of Environment & Conservation NSW document titled '*Assessing Vibration: A Technical Guideline*'. Most of these vibration limits stated in the document above are adopted from the British Standard BS 6472-1:2008 '*Evaluation of Human Exposure to Vibration in Buildings (1Hz to 80 Hz)*' criteria.

The Acceptable Vibration Limit Values as detailed in the NSW EPA Assessing Vibration: A Technical Guideline are presented in Table 4.3.1 below

Table 4.3.1- Acceptable Vibration Dose Value for Intermittent Vibration (m/s^{1.75})

Location	Daytime ¹		Night-time ¹	
	Preferred value	Maximum value	Preferred value	Maximum value
Critical areas ²	0.10	0.20	0.10	0.20
Residences	0.20	0.40	0.13	0.26
Offices, schools, educational institutions and places of worship	0.40	0.80	0.40	0.80
Workshops	0.80	1.60	0.80	1.60

Similarly AS 2670.2-1990 sets out maximum acceleration levels at different frequency levels for vibration emanating from dropping weights in the proposed Gymnasium.

5.0 NOISE & VIBRATION BREAK OUT FROM THE GYM

The main sources of noise and vibration from the proposed Gym may include but are not limited to:

- Noise emission from Mechanical Plant & Equipment.
- Noise from Patrons' cars accessing the site.
- Noise and vibration impact from Indoor Gym Operations (weights and patrons including background music/TV).

5.1 MECHANICAL PLANT & EQUIPMENT

The proposed gym will operate 24/7, therefore the air-conditioning units are expected to be continuously operational throughout the day, evening and night periods.

Provided recommendations in Section 6 of this report are adhered to, the mechanical plant will not produce any additional offensive noise for the nearest potential receivers as background noise levels are dominated by existing mechanical plant & equipment from the adjacent commercial properties and traffic noise from Minna Close and Mona Vale Rd.

5.2 TRAFFIC & PARKING NOISE EMISSIONS

The existing building at No. 3 Minna Cl, Belrose currently provides a total of one-hundred-and-eighty-eight (188) car parking spaces in the basement, in addition to twenty-eight (28) car parking spaces provided at the rear of the building. There will be thirty-seven (37) car spaces allocated for the proposed gymnasium.

The noise from the car park will not change the existing acoustic environment of the existing commercial receivers as the carpark is existing and approved. Sleep disturbance at the early morning and late hours is not applicable to commercial properties.

5.3 MAX NOISE & VIBRATION IMPACT FROM WEIGHTS DROPPING & PATRONS INSIDE GYMNASIUM

The proposed Gymnasium will offer a cardio/functional area, machine training and free-weight training available for patrons to use. A maximum of thirty (30) patrons are expected at any one time with one (1) staff member and one (1) personal trainer with amplified music/TV being played and weights being dropped.

The sound power level of male and female vocal levels (at any octave band centre frequency) is shown in Table 5.3.1 below:

Table 5.3.1 – Different Male & Female Vocal Levels (at any octave band centre frequency) *Average Speech Levels - Pearson, Bennet, & Fidell (1977) Report.

Vocal Effort	No. of Talkers	Sound Power Levels [dB] at Octave Band Centre Frequencies [Hz]*,**							
		125	250	500	1000	2000	4000	8000	dB(A)
Females									
Casual	1	37.0	55.0	56.0	47.0	46.0	41.0	44.0	55.7
Normal	1	37.0	58.0	61.0	53.0	49.0	51.0	45.0	60.8
Raised	1	36.0	64.0	68.0	63.0	58.0	56.0	50.0	68.4
Loud	1	31.0	66.0	70.0	72.0	68.0	64.0	56.0	75.2
Shouted	1	31.0	61.0	75.0	83.0	81.0	75.0	66.0	86.2
Males									
Casual	1	55.0	57.0	59.0	48.0	46.0	46.0	43.0	58.1
Normal	1	59.0	63.0	65.0	56.0	51.0	49.0	43.0	64.0
Raised	1	62.0	67.0	71.0	64.0	58.0	55.0	49.0	70.3
Loud	1	61.0	71.0	79.0	76.0	70.0	66.0	57.0	80.0
Shouted	1	53.0	77.0	85.0	89.0	84.0	79.0	70.0	91.4

Internal noise from the Gymnasium is expected to peak [worst case scenario] when the Gymnasium is at full capacity with amplified music/TV playing. Table 5.3.2 presents the maximum noise level anticipated from the operation of the Gymnasium at maximum capacity including staff, and amplified music/TV.

Table 5.3.2- Noise Level of Gymnasium Operating at Maximum Capacity Including Amplified Music + Patrons + Machines & Weights

Description	Sound Pressure Levels (dB) at Octave Band Centre Frequencies (Hz) at centre of Gymnasium								
	63	125	250	500	1k	2k	4k	8k	dB(A)
Total Cumulative Noise from Operational Activities at Maximum Capacity at Centre of Gym with Music	49	52	67	79	83	82	75	68	87

5.3.1 SOUND LEVELS AT NEAREST RECEIVERS (AIRBORNE)

The closest neighbouring residential receiver is located approximately 900 m away from the noise and vibration source. Due to distance mitigation and attenuation from surrounding buildings shielding the residential receivers , the proposed Gymnasium will not affect the existing acoustic environment of any neighbouring residential receivers.

All operational activities for the proposed Gymnasium will occur inside the premises. Sound loss will be experienced through the existing construction and distance mitigation between the Gymnasium and the nearest receivers.

The noise prediction computations presented in this section are based on the methods and Standards as per **AS ISO 9613- :1996** Acoustics - Attenuation of sound during propagation outdoors -- : General method of calculation & Lord -Templeton 1986 Inside/Outside transmission loss method of calculations.

Using the maximum noise levels anticipated from the proposed Gymnasium as per Table 5.3.2, the predicted noise levels at the nearest receivers are shown in table 5.3.1.1 below.

Table 5.3.1.1 – Sound Pressure Levels LAeq at Nearest Receivers

Activity	Period	Expected LAeq, at C1 [External/Internal]	Expected LAeq, at C2 [External/Internal]	Expected LAeq, at C3 [External/Internal]	<i>Compliance with Noise Trigger level (Noise Policy for Industry 2017) [External] & AS 2107 [Internal.</i>
30 Patrons + 1 Staff Member + 1 Personal Trainer + Amplified Music/Tv	7.00am - 6.00pm (Day)	43 dB(A) / 19 dB(A)	17 dB(A) / 7 dB(A)	21 dB(A) / 11 dB(A)	Yes < 62 dB(A) < 50 dB(A)*
	6:00pm – 10:00pm (Evening)**	-	-	-	Yes < 62 dB(A) < 50 dB(A)*
	10:00 pm – 7:00 a.m (Night)**	-	-	-	Yes < 62 dB(A) < 50 dB(A)*

*Noise limit in Offices in adjacent commercial units.

** Neighbouring receivers will not be in operation during the evening or night period.

The noise emissions from the proposed Gymnasium will comply with the NSW Noise Policy for Industry 2017 and the Noise Guide for Local Government including the Sleep Disturbance Criteria presented in both documents. The sleep disturbance policy does not apply to the commercial receivers situated above.

5.3.2 SOUND & VIBRATION LEVEL AT NEAREST RECEIVERS (STRUCTURE BORNE NOISE & VIBRATION).

Onsite noise and vibration testing were carried out on similar projects to ensure the dropping of free weights onto the floor of the proposed Gymnasium does not generate excessive acoustic and vibration disturbance inside the commercial tenancy above the proposed gymnasium.

On November 22nd, 2023, an engineer from this office carried out acoustic and vibration readings inside a similar gym with the same slab thickness of 250 mm at No. 8-18 Stoney Creek Rd, Bexley (similar form of construction; also a plus fitness franchise) in order to determine the maximum allowed height from which weights can be dropped during the operating hours.

Testing was carried out by dropping weights from various heights onto 55mm thick flooring (1 x 40mm Olympact Rubber Pads + 15mm Impact Tile Overlay). While maximum noise levels from dropping weights were registered using a SVAN 957 noise level meter, instantaneous spectrum vibration levels were also recorded using the vibration sentry e 16 g vibration meter data logger connected to a laptop.

The weights dropped during testing were a 50kg dumbbell from knee, waist and shoulder heights to account for worst case scenarios. While dropping the weights inside the Gymnasium onto the floor, instantaneous noise pressure levels inside the tenancy above were visually inspected and the maximum noise level was recorded. The Maximum noise levels registered as a result of dropping the 50 kgs from knee, waist and shoulder heights were 46 dB(A), 51 dB(A) and 55 d B(A) respectively.

Table 5.3.2.1 below shows the Maximum sound pressure levels recorded inside the commercial tenancy above as a result of dropping the weight drop testing in addition to patron and music noise.

Table 5.3.2.1 – Expected Maximum Noise Levels inside & outside Commercial Tenancy Above Gymnasium.

Tenancy	50 Kgs Dumbbell dropped from knee height + Patron & Music Noise (as per Table 5.3.1) [Internal]	50 Kgs Dumbbell dropped from waist height + Patron & Music Noise (as per Table 5.3.1) [Internal]	50 Kgs Dumbbell dropped from shoulder height + Patron & Music Noise (as per Table 5.3.1) [Internal]	AS 2107 Requirement
Level 1, No. 3 Minna Close, Belrose	46 dB(A) + 19 dB(A) = 46 dB(A) Complies	51 dB(A) + 19 dB(A) = 51 dB(A) Does not Comply	55 dB(A) + 19 dB(A) = 55 dB(A) Does not Comply	< 50 dB(A)*

*Internal Noise Limit

The measured vibration levels recorded inside the neighbouring commercial receiver was plotted against the industry standard regulation values for workshops/retail areas found in AS 2670.2-1990 Evaluation of human exposure to whole-body vibration - Continuous and shock-induced vibration in buildings (1 to 80 Hz) and were found to comply.

6.0 NOISE CONTROL RECOMMENDATIONS

6.1 MECHANICAL PLANT

We recommend any air supply fan/ New Ac units (if any) to be in the carpark or on the roof and placed more than 3m away from any boundary.

6.2 VIBRATION IMPACT

We recommend 55mm (1 x 40mm Olymptac Rubber Pads + 15mm Impact Tile Overlay) Flooring (or similar) to be installed throughout the entire strength/plate loaded equipment area. Ensure any machines located in other parts of the gym (e.g cardio area) are placed on rubber pads or contain rubber feet.

Signs are to be installed instructing patrons not to drop weights a distance higher than **0.7 m height**. Staff members are to ensure this is rule is enforced.

6.3 NOISE VOLUME CONTROL

Sound System Volume Controls (such as Russound ALT-126R) should always be used to control the level of background music and noise from any wall mounted TV's inside the Gym (if provided). Sound noise levels from background music is not to exceed 86 dB(A) (Sound Power Level).

6.4 WINDOWS AND DOORS/ROLLER DOORS OF PROPOSED GYMNASIUM

All operable windows & sliding doors are to be closed during gym operation as to not allow any noise propagation (Existing windows already inoperable).

6.5 MANAGEMENT OF PROPOSED CENTRE & SIGNS

Patrons of the gym must be informed of the nearest receivers and the importance of minimising noise produced especially during the evening and night hours. Management is to ensure that patrons enter and leave the site in an orderly fashion and not congregate outside.

6.6 PEOPLE CONGREGATING OUTSIDE THE GYM AREA

Patrons are not to congregate outside the Gymnasium or the carpark and be aware of all receivers by keeping noise to a minimum.

We recommend that signs are installed in the carpark and at the entry reminding patrons not to congregate outside and be aware of the neighbouring receivers.

6.7 NOISE MANAGEMENT PLAN

A Noise Management Plan should be implemented and should include the following:

- Install a contact number at the front of the gym so that complaints regarding the operation can be made.
- Implement a complaint handling procedure. If a noise complaint is received the complaint should be recorded on a Complaint Form. The Complaint Form should contain the following:
 - Name and Address of the Complainant
 - Time and Date the Complaint was received
 - The nature of the complaint and the time/date the noise was heard
 - The name of the employee that received the complaint
 - Actions taken to investigate the complaint and the summary of the results of the investigation
 - Indication of what was occurring at the time the noise was happening (if applicable)
 - Required remedial action (if applicable)
 - Validation of the remedial action
 - Summary of feedback to the complaint

Also, a permanent register of complaints should be held on the premises, which shall be reviewed monthly by staff to ensure all complaints are being responded to. All complaints received shall be reported to management with initial action/investigation commencing within 7 days. The complaint should also be notified of the results and actions arising from the investigation.

7.0 CONCLUSION

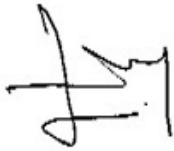
Measurements and computations presented in this report show that the noise & vibration emissions from the proposed Gymnasium at No. 3 Minna Close, Belrose will not exceed the noise criteria set out in Section 4 of this report. Additional noise controls recommendations are outlined in Section 6 to ensure compliance through the operation of the development.

The operation of the proposed gym is expected to be minimal due to the nature of the operations and will comply with the requirements of Northern Beaches Council.

The proposed gym complies with the relative sections of the EPA and Northern Beaches Council Requirements and will not create any offensive noise or excessive vibration to the surrounding receivers.

Should you require further explanations, please do not hesitate to contact us.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'M. Zaioor', with a stylized flourish at the end.

M. Zaioor.
M.S. Eng'g Sci. (UNSW).
M.I.E.(Aust), CPEng.
Australian Acoustical Society (Member).

8.0 APPENDIX

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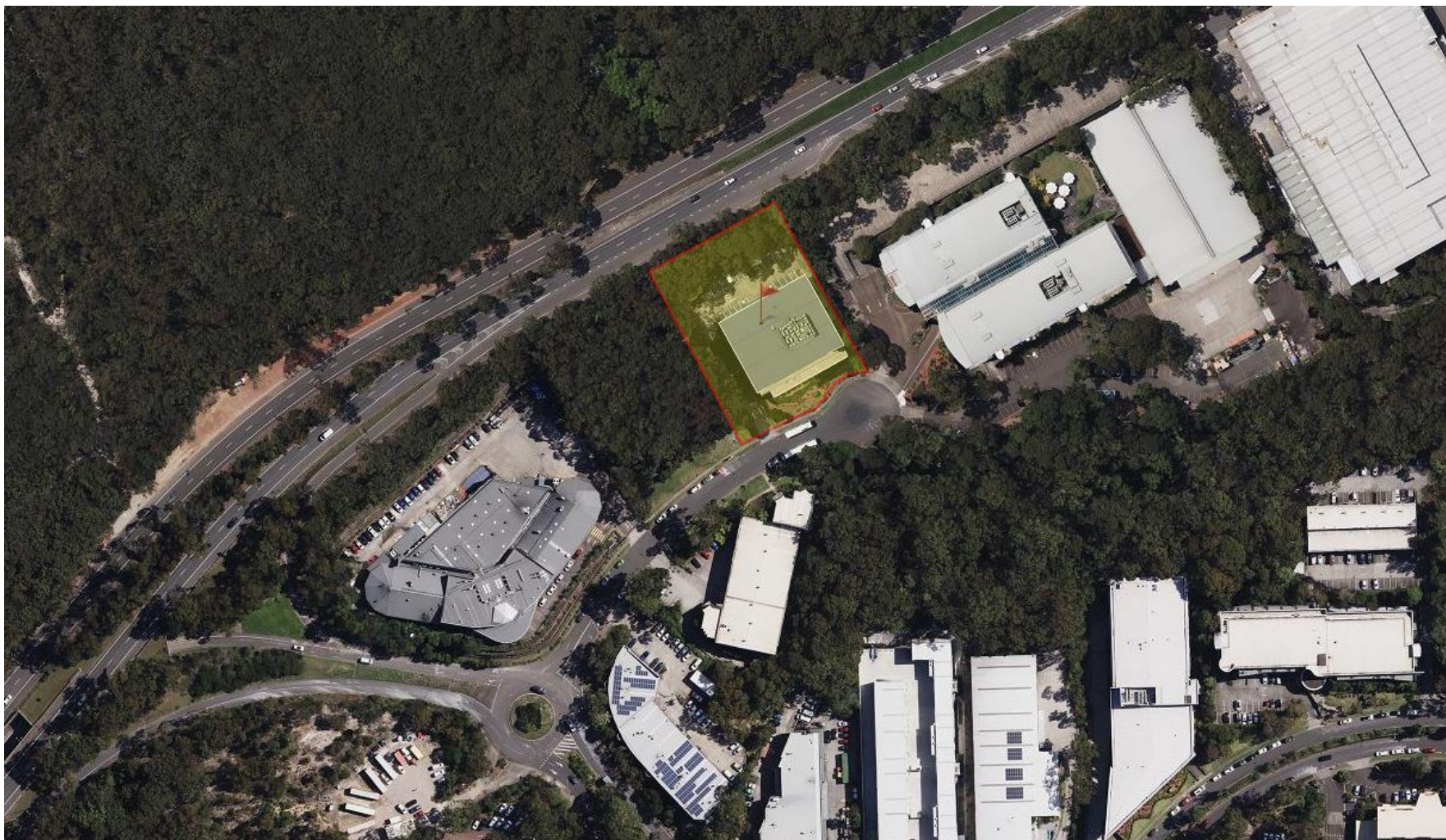


Figure 1 - Site Location

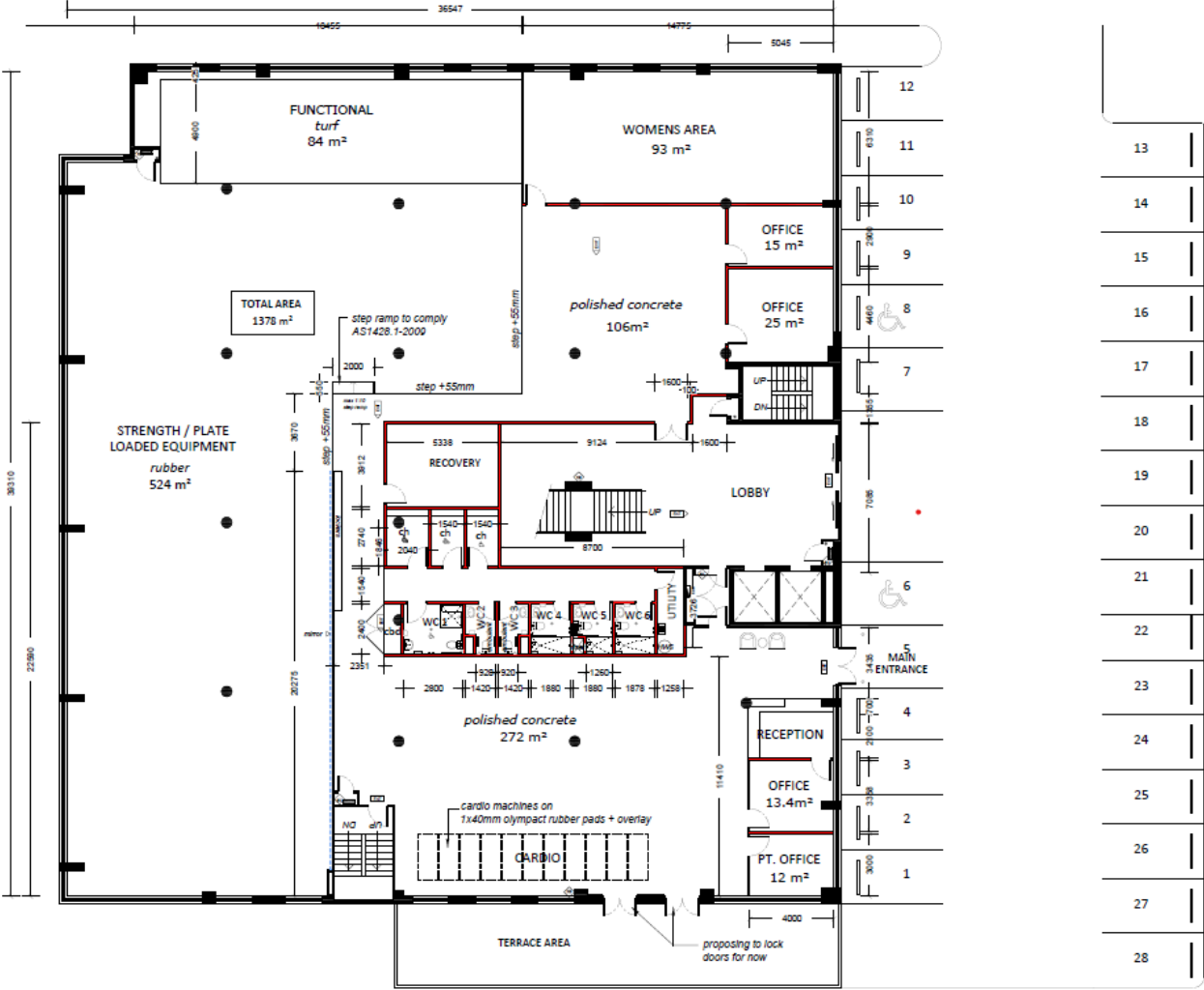


Figure 2 – Site Plan

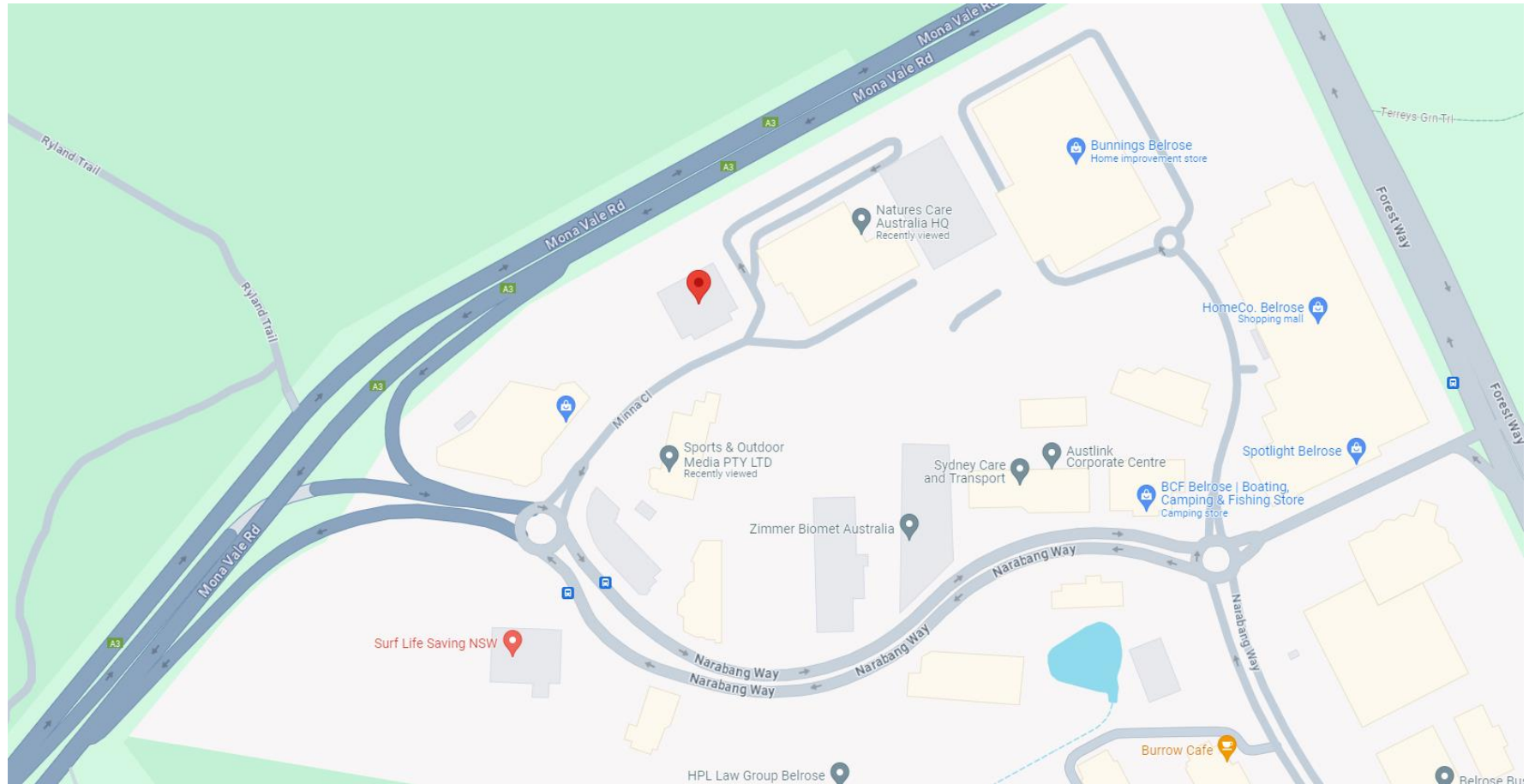


Figure 3 - Surrounding Environment

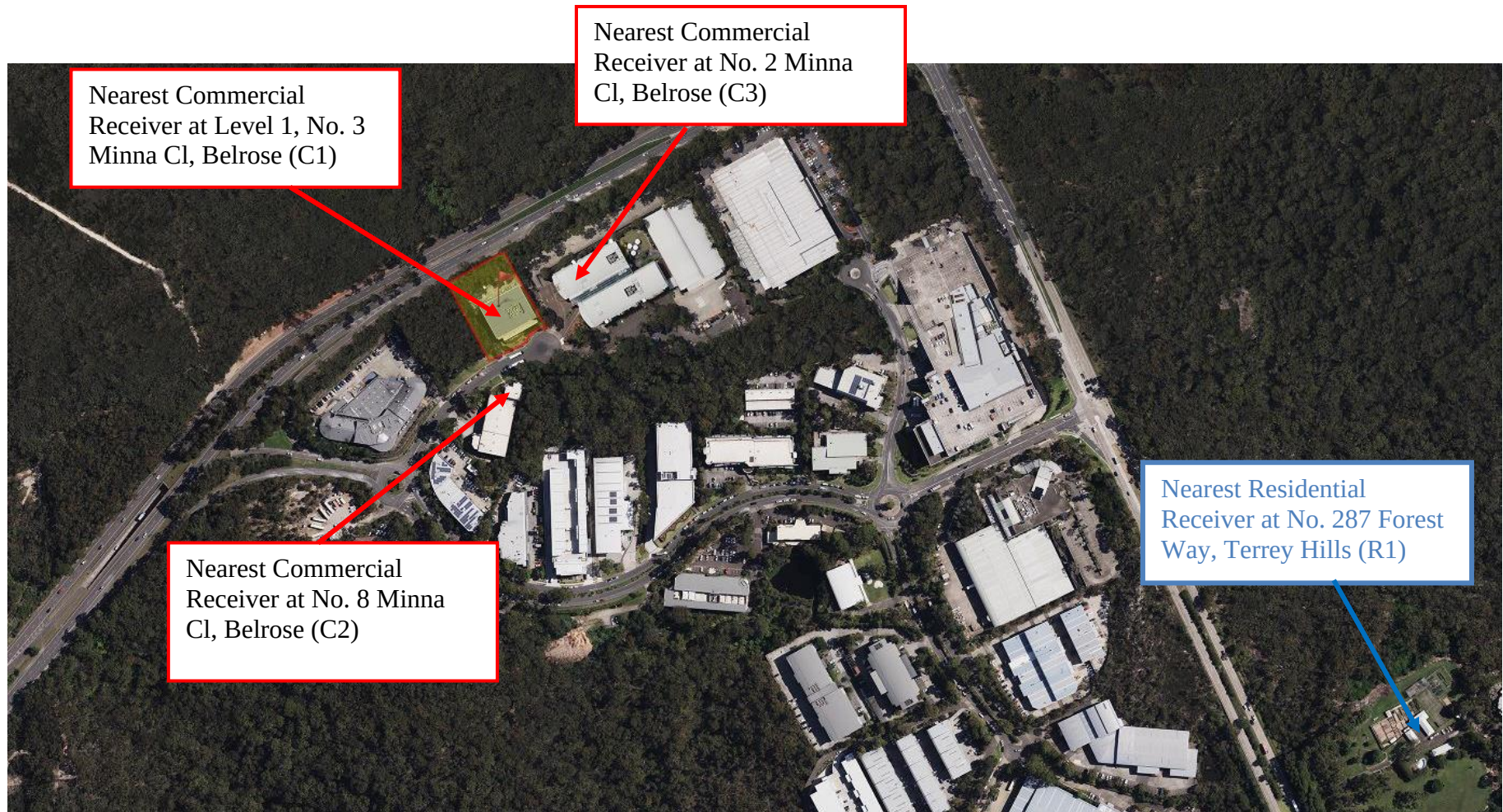


Figure 4 – Nearest Residential and Commercial Receivers



Figure 5 - Noise Reading Location (Point A)

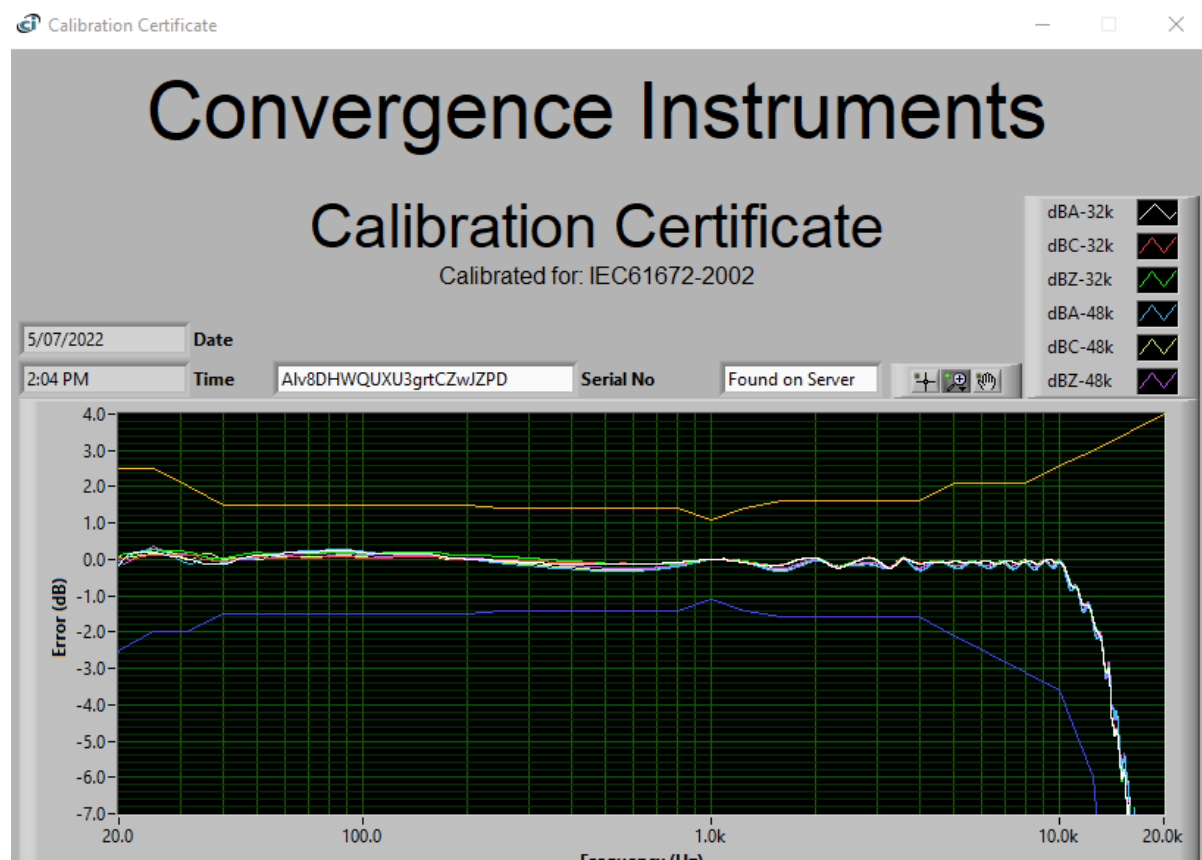


Figure 6 - Calibration Certificate

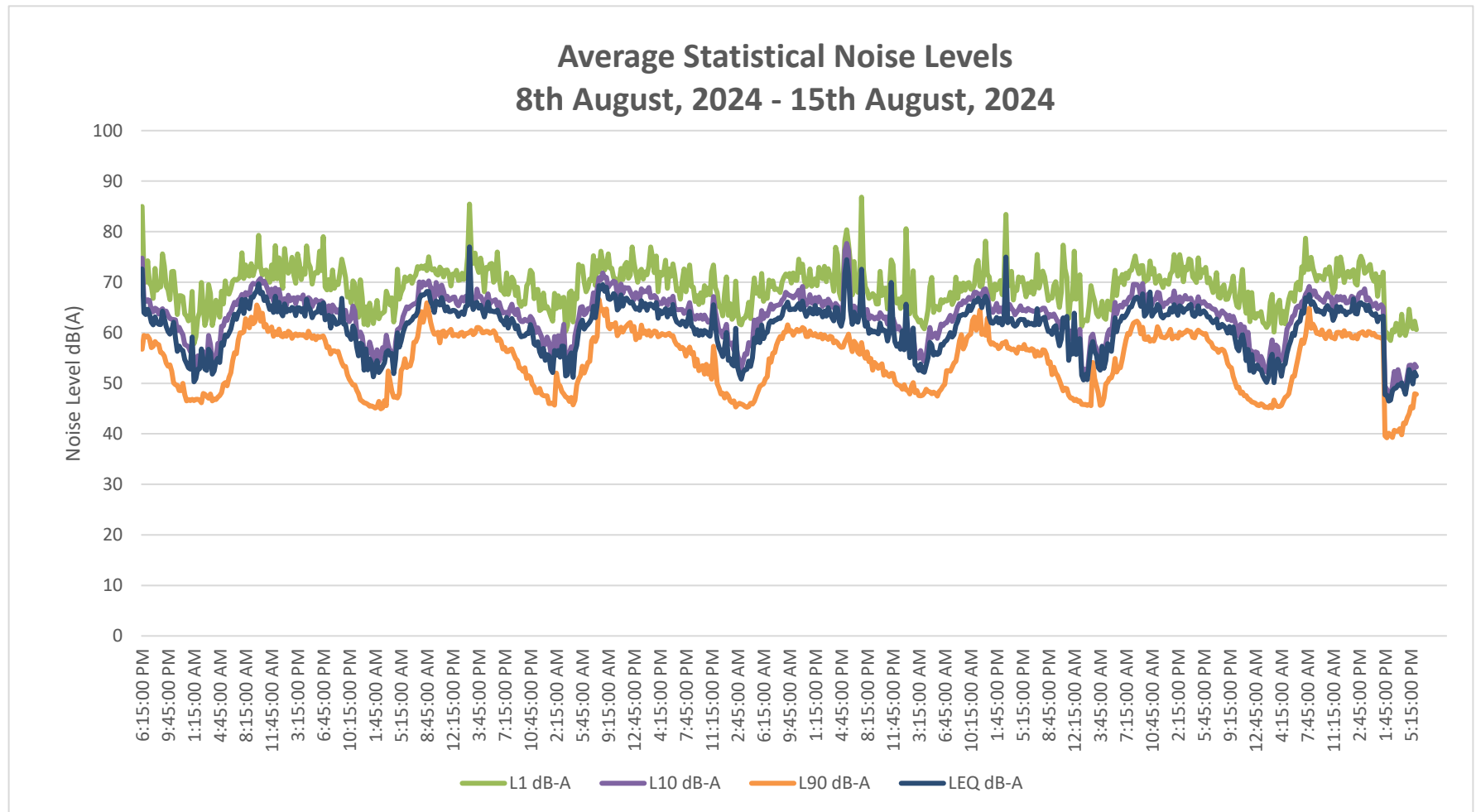


Figure 7 - Noise Survey – Point A