RODNEY STEVENS ACOUSTICS
Acoustic Consultants
Member Australian Acoustical Society

REPORT R190348R1

Revision 0

DA Noise Impact Assessment

Proposed Gym

Level 1, 78-88 Tench Avenue, Jamisontown NSW 2750

PREPARED FOR:
Vicary Family Trust
C/o: Popov Bass
Tench Avenue
Penrith NSW 2750

22 July 2019

PO Box 522
Wahroonga NSW 2076
P 02 9943 5057
F 02 9475 1019
mail@rodneystevensacoustics.com.au
ABN 78 149 311 455
rodneystevensacoustics.com.au

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PREPARED BY:

Rodney Stevens Acoustics Pty Ltd
Telephone: 61 2 9943 5057 Facsimile 61 2 9475 1019
Email: info@rodneystevensacoustics.com.au
Web: www.rodneystevensacoustics.com.au

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1 INTRODUCTION

Rodney Stevens Acoustics Pty Ltd (here forth referred to as RSA) has been engaged by Popov Bass, on behalf of Vicary Family Trust, to prepare a Development Application (DA) noise impact assessment for the proposed gym at Level 1, Tenancy 10 and 11, 78-88 Tench Avenue, Jamisontown NSW 2750.

This assessment addresses the potential operational (i.e. training/workout) noise and vibration impacts associated with the proposed gym on the amenity of the adjoining sensitive receivers.

Specific acoustic terminology is used in this report. An explanation of common acoustic terms is provided in Appendix A.

2 PROPOSED DEVELOPMENT

It is understood that a gym is proposed at Level 1, Tenancy 10 and 11 at 78-88 Tench Avenue, Jamisontown NSW 2750. The proposed gym is to be located in a new commercial area. The nearest residences are located northeast and southwest of the project site along Tench Avenue and Cross Road, at distances of approximately 220 metres and 250 metres respectively. There is also a residential property on the western side approximately 30 metres from the site.

Figure 2-1 shows an aerial image of the site area and the surrounding environment.

2.1 Hours of Operation and Patron Numbers

The proposed hours of operation of the gym and number of patrons are as follows:

- Monday to Friday – 5:00am to 10:00pm
- Saturday – 5:00am to 6:00pm
- Sunday – 6:00am to 6:00pm

Facilities proposed at the gym include:

- Three training studios – one for functional group training (up to 20 people at one time), one for spin cycle classes (up to 25 people) and one for group low impact boxing (up to 25 people);
- One yoga studio (up to 25 people);
- Infrared sauna (up to 7 people);
- Change rooms;
- Social seating/drinks area;
- Small office space and reception area.

The gym will run supervised classes of up to 25 patrons per class. The operators envisage a maximum of 50 patrons using the gym at any one time. We have based our calculations on the information provided.

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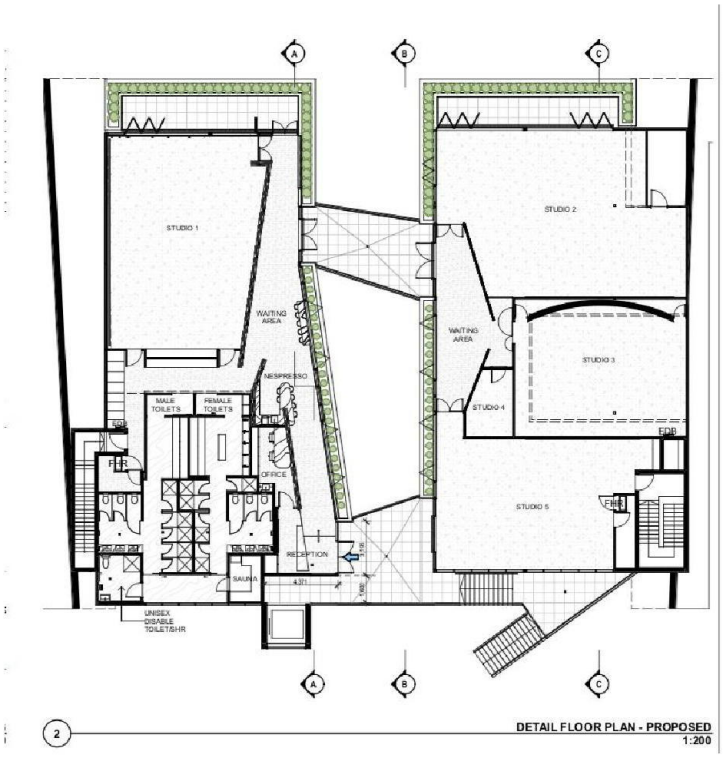
Figure 2-1 Site Location

Image Courtesy of NearMap © 2019.

The proposed gym layout is shown in Figure 2-2. A larger version and the remaining architectural plans are shown in Appendix D.

Figure 2-2 Proposed Gym Layout



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3 BASELINE NOISE SURVEY

3.1 Unattended Noise Monitoring

In order to characterise the existing noise environment of the area, unattended noise monitoring was conducted between the dates of 5 July 2018 and 13 July 2018 at the logging location shown in **Error! R eference source not found.**. The noise logger set up at the project site is representative of the existing noise environment surrounding the project site and the nearest residences.

Logger location was selected with consideration to other noise sources which may influence readings, security issues for noise monitoring equipment and gaining permission for access from other landowners.

Instrumentation for the survey comprised of a RION NL-42 environmental noise logger (serial number: 546395) fitted with microphone windshields. Calibration of the logger was checked prior to and following measurements. Drift in calibration did not exceed ±0.5 dB(A). All equipment carried appropriate and current NATA (or manufacturer) calibration certificates (shown in Appendix C).

Measured data have been filtered to remove data measured during adverse weather conditions upon consultation with historical weather reports provided by the Bureau of Meteorology (BOM).

The logger determines L_{A1}, L_{A10}, L_{A90} and L_{Aeq} levels of the ambient noise. L_{A1}, L_{A10}, L_{A90} are the levels exceeded for 1%, 10% and 90% of the sample time respectively (see Glossary for definitions in Appendix A).

Detailed results at the monitoring location are presented in graphical format in Appendix B. The graphs show measured values of L_{A1}, L_{A10}, L_{A90} and L_{Aeq} for each 15-minute monitoring period.

3.2 Data Processing to Assess Noise Emission

In order to assess noise emission from the proposed operations of the project site, the data obtained from the loggers have been processed in accordance with the procedures contained in the EPA's *Noise Policy for Industry* (NPFI) to establish representative noise levels that can be expected at the nearest residences and the immediate industrial area. The results of this analysis are presented in Table 3-1 below.

Table 3-1 Measured Ambient Noise Levels Corresponding to Defined NPfI Periods

Logger Location	Measurement Descriptor	Measured Noise Level – dB(A) re 20 µPa		
		Daytime 7.00 am - 6.00 pm	Evening 6.00 pm - 10.00 pm	Night-time 10.00 pm - 7.00 am
78-88 Tench Avenue Jamisontown	L_{Aeq}	63	53	52
	RBL (Background)	46	46	40

4 OPERATIONAL NOISE CRITERIA

4.1 Penrith Council DCP 2015

Penrith Council do not have specific criteria relating to gymnasium developments in their DCP, in the absence of this, other relevant criteria that is suitable for gym assessments will be will be adopted.

4.2 Australian Standard *AS/NZ 2107:2016*

There is the potential of the training/workout activities to impact on the amenity of the adjoining commercial tenancies located next to and below the gym. As Council's DCP has no acoustic criteria for the preservation of the amenity of commercial tenancies specific to this type of assessment, we have

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adopted noise objectives as set out in *AS/NZS 2107:2016 – Recommended Design Sound Levels and Reverberation Times for Building Interiors*. Table 4-1 is an extract from the standard that pertains to recommended noise levels for different receiver types.

Table 4-1 AS/NZS 2107:2016 – Recommended Internal Noise Levels

Type of Occupancy/Activity	Recommended Design Sound Level, L_{Aeq} dB(A)
	Design Sound Level ($L_{Aeq,t}$) Range
Restaurants and Cafeterias	
Restaurants/Cafeterias	40 - 50
Office Buildings	
General office areas/open plan office	40 - 45
Shop Buildings	
Small Retail Stores	<50
Residential	
Living Areas	40
Sleeping Areas	35

4.3 EPA Vibration Guideline

In February 2006, the NSW Environment Protection Authority (EPA) introduced its "*Assessing vibration: a technical guideline*". This document is based on guidelines contained in British Standard (BS) 6472–1992, "*Evaluation of human exposure to vibration in buildings (1–80 Hz)*".

The EPA document contains guidelines for "continuous and impulsive vibration" and also for "intermittent vibration" and was to be considered interim until the revision of BS 6472-1992. The document does not contain criteria per se, but rather, ranges of levels of "preferred values" of vibration, below which "a low probability of adverse comment" can be expected.

BS 6472 was subsequently revised in 2008. BS 6472-1:2008: "*Guide to evaluation of human exposure to vibration in buildings. Vibration sources other than blasting*" focuses on Vibration Dose Values (VDVs) which allow assessment of impulsive and intermittent vibration.

Whilst the previous (1992) version of BS 6472 contained the same criteria for human exposure to continuous vibration as AS 2670, the revised version focuses on the use of VDVs which allow an assessment of the severity of impulsive and intermittent vibration to be carried out.

It is recommended that an assessment in terms of intermittent vibration (VDVs) is appropriate as each gym's training/workout session, which occurs for a period of approximately 45 minutes to an hour, may potentially have more than three vibration events.

BS 6472-1:2008 nominates criteria for various categories of disturbance, the most stringent of which are the levels of building vibration associated with a "low probability of adverse comment" from occupants. The "low probability of adverse comment" level for residential buildings is:

- **0.2 to 0.4 m/s$^{1.75}$** (Vibration Dose Value)

BS 6472-1:2008 goes on to state:

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These values represent the best judgement currently available and may be used for both vertical and horizontal vibration, provided that they are correctly weighted. It is inevitable that the criteria have to be presented as ranges rather than discrete values. This stems largely from the widely differing susceptibility to vibration evident among members of the population, but also from their differing expectations of the vibration environment. Parallel effects can also exert some influence. Because there is a range of values for each category, it is clear that the judgement can never be precise.

4.4 Noise Policy for Industry

The EPA oversees the NPfI which provides a framework and process for deriving noise criteria. The NPfI criteria for industrial noise sources (e.g. mechanical plant) have two (2) components:

- Controlling the intrusive noise impacts for residents and other sensitive receivers in the short term; and
- Maintaining noise level amenity for particular land uses for residents and sensitive receivers in other land uses.

4.4.1 Assessing Intrusiveness

For assessing intrusiveness, the background noise generally needs to be measured. The intrusiveness criterion essentially means that the equivalent continuous noise level (L_{Aeq}) of the source should not be more than 5 dB(A) above the measured Rated Background Level (RBL), over any 15 minute period. The assessment of intrusiveness only applies to residential receivers.

4.4.2 Assessing Amenity

The amenity criterion is based on land use and associated activities (and their sensitivity to noise emission). The cumulative effect of noise from industrial sources needs to be considered in assessing the impact. The criteria relate only to other industrial-type noise sources and do not include road, rail or community noise. The existing noise level from industry is measured. If it approaches the criterion value, then noise levels from new industrial-type noise sources, (including air-conditioning mechanical plant) need to be designed so that the cumulative effect does not produce total noise levels that would significantly exceed the criterion. For areas of high road traffic, there are further considerations that influence the selection of the noise criterion

4.4.3 Area Classification

The NPFI classifies the noise environment of the subject area as “Urban”.

The NPfI characterises the “Urban” noise environment as an area that:

- Is dominated by “urban hum” or industrial source noise.
- Has through traffic with characteristically heavy and continuous traffic flows during peak periods.
- Is near commercial districts or industrial districts.

Has any combination of the above.

4.4.4 Project Specific Noise Emission Criteria

Having defined the area type, the processed results of the unattended noise monitoring have been used to generate project specific noise criteria.

In accordance with NPfI principles, because, in this case, the noise environment at the monitoring site used to establish industrial noise criteria is not controlled by industrial type noise sources, (it is largely aggregate urban hum and distant road traffic noise), the project specific noise levels, which are shown in bold in Table 4-2, are the lower of the ANL and intrusive criteria.

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Table 4-2 Criteria for Operational Noise Emissions to Nearby Residences

Receiver Type	Time of Day	Noise Level dB(A) re 20 µPa				
					NPFI Criteria	
					Intrusive	Amenity
		ANL (period)	Measured RBL[2] $L_{A90,15minute}$	Measured $L_{Aeq,15minute}$	$L_{Aeq,15minute}$ Criterion for New Sources	$L_{Aeq,Period}$ Criterion for New Sources[3]
Residence	Day	60	46	63	**51**	60
	Evening	50	46	53	51	**50**
	Night	45	40	52	45	**45**
Commercial	When in use					**65**

Note 1: ANL Acceptable Noise Level for an Urban area

Note 2: RBL Rating Background Level

Note 3: Assuming existing noise levels unlikely to decrease

Note 4: Project Specific Criteria are shown in bold

In summary, the project specific noise emission criteria established by the NPfI for this site are:

At surrounding residences on Cross Road and Tench Avenue –

- Day 51 dB(A)
- Evening 50 dB(A)
- Night 45 dB(A)

At surrounding commercial receivers: 65 dB(A) when in use.

5 OPERATIONAL NOISE & VIBRATION IMPACT ASSESSMENT

The main noise generating activities carried out at the gym will be weights being dropped on the floor, any potential mechanical plant and noise from patrons. Only supervised classes are proposed to take place (with the exception of the infrared sauna area), so the instances where patrons will be dropping large weights indiscriminately will be very limited. All patrons using weights and equipment will be supervised at all times.

5.1 Structure Borne Predicted Noise Impacts

Noise levels have been calculated for gym activities. Noise emissions at the nearest receivers is presented in the table below. The predicted noise calculations take into account the following:

- Heights of receivers are assumed to be 1.5 m above ground level;
- 10 patrons (assumed maximum) will be using the free weights in structured classes, we have assumed the 20kg weights are being used (worst case scenario):
- 50 people within various areas of the gymnasium at any one time;
- A 30 mm thick rubber flooring system with a minimum density of 600 kg/m^3 is in place;

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- Background music will not be played through a PA system, only a small hi fi or stereo system;
- All patrons are following their programs and will not misuse the equipment.

Table 5-1 Calculated L_{Aeq} Noise Levels

Receiver	Calculated Noise Level	Criteria	Complies
Tenants 3-7	<20 dB(A)	40-50 dB(A)	Y
Tenants 1-2, 8-9	<20 dB(A)	40-50 dB(A)	Y
Residential receivers	<20 dB(A)	51 dB(A) (Day) 50 dB(A) (Evening)	Y Y

We note that the predicted noise levels above are based on worst case scenarios were all weights are dropped at the same time.

Minimum construction standards that meet the National Construction Code (formerly Building Code of Australia) will ensure that the potential noise transfer between floors that could be experienced in the downstairs tenant spaces will be below the criteria for all potential commercial receivers along with recommendations set out in this report.

Residential receivers are at a distance far enough away that the activities proposed at the gym will not have an adverse impact on these receivers.

5.2 Vibration Assessment

In order to assess the vibration impact from the proposed gym's activities, the vibration dose (VDV) was predicted. The resulting vibration can be calculated by taking the measured vibration VDV levels in a similar gym scenario and extrapolating them to the number of weights drops that could occur during a 15 minute session. The measured vibration (VDV) level in a similar gym is 0.003733 $m/s^{1.75}$ at the adjoining receivers.

The calculated VDV complies with the vibration criteria specified in Section 4.3 inside the receivers below the gym.

5.3 Mechanical Plant

A specific mechanical plant selection has not been supplied at this stage. It is anticipated that the building will be serviced by typical mechanical ventilation/air conditioning equipment.

It is likely that the criteria set out in Table 4-2 will be met through the use of conventional noise control methods (e.g. selection of equipment on the basis of quiet operation and, where necessary, providing enclosures, localised barriers, silencers and lined ductwork).

An appropriately qualified acoustic consultant should review the mechanical plant associated with the development at the detailed design stage when final plant selections have been made.

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6 NOISE CONTROL RECOMMENDATION

The operation of the proposed gym has been assessed to comply with the project specific noise and vibration criteria. With the implementation of the following noise controls measures, it will enable the proposed gym to maintain a healthy relationship with their neighbouring premises.

6.1 Operational

- All patrons must be instructed to not cause unnecessary noise in particular when handling weights.
- Speaker systems to be controllable only by staff, not patrons.
- Windows should be closed during class times where classes are at 75% capacity or greater.
- All external doors to have self-closing mechanisms.

6.2 In-principle Design

- A 30 mm thick rubber flooring system with a minimum density of 600 kg/m^3 is in place (or suitable equivalent flooring system).
- Self-contained sound systems must be used. PA speakers and amplifiers are not to be installed.
- External windows and doors to have minimum 6mm glazing installed.
- Any penetrations between floors of the building should be acoustically treated so the noise does not transfer through the floors to the tenants below.
- Weight racks and any gym equipment should not be mounted directly to the wall where possible.
- A noise limiter should be installed on any speaker system to ensure noise levels do not exceed 85 dB(A) at one metre from the speaker.

6.3 Mechanical Plant

An appropriately qualified acoustic consultant should review the mechanical plant associated with the development at the detailed design stage when final plant selections have been made.

7 CONCLUSION

Rodney Stevens Acoustics Pty Ltd has been engaged by Vicary Family Trust to assess the potential operational noise emissions from the proposed gym at Level 1, Tenancy 10 and 11 at 78-88 Tench Avenue, Jamisontown NSW 2750. The noise criterion for the operations of the proposed gym has been established in accordance with the Australian Standard AS/NZ2107:2016 and other regulatory criteria.

A noise and vibration impact assessment has been conducted in relation to the operation of the gym. This assessment shows that the proposed gym will comply with the specific criteria with the implementation of the recommendation presented in this report.

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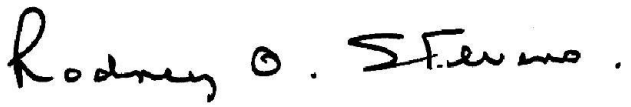
Mechanical plant criteria have also been established. A detailed assessment of site specific equipment should be conducted at Construction Certificate (CC) stage.

Based on the noise impact assessment conducted, it is recommended that planning approval be granted for the proposed development.

Approved:-



Rodney Stevens

Manager/Principal

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Appendix A Acoustic Terminology

A-weighted sound pressure	The human ear is not equally sensitive to sound at different frequencies. People are more sensitive to sound in the range of 1 to 4 kHz (1000 – 4000 vibrations per second) and less sensitive to lower and higher frequency sound. During noise measurement an electronic '*A-weighting*' frequency filter is applied to the measured sound level *dB(A)* to account for these sensitivities. Other frequency weightings (B, C and D) are less commonly used. Sound measured without a filter is denoted as linear weighted dB(linear).
Ambient noise	The total noise in a given situation, inclusive of all noise source contributions in the near and far field.
Community annoyance	Includes noise annoyance due to: ▪ character of the noise (e.g. sound pressure level, tonality, impulsiveness, low-frequency content) ▪ character of the environment (e.g. very quiet suburban, suburban, urban, near industry) ▪ miscellaneous circumstances (e.g. noise avoidance possibilities, cognitive noise, unpleasant associations) ▪ human activity being interrupted (e.g. sleep, communicating, reading, working, listening to radio/TV, recreation).
Compliance	The process of checking that source noise levels meet with the noise limits in a statutory context.
Cumulative noise level	The total level of noise from all sources.
Extraneous noise	Noise resulting from activities that are not typical to the area. Atypical activities may include construction, and traffic generated by holiday periods and by special events such as concerts or sporting events. Normal daily traffic is not considered to be extraneous.
Feasible and reasonable measures	Feasibility relates to engineering considerations and what is practical to build; reasonableness relates to the application of judgement in arriving at a decision, taking into account the following factors: ▪ Noise mitigation benefits (amount of noise reduction provided, number of people protected). ▪ Cost of mitigation (cost of mitigation versus benefit provided). ▪ Community views (aesthetic impacts and community wishes). ▪ Noise levels for affected land uses (existing and future levels, and changes in noise levels).
Impulsiveness	Impulsive noise is noise with a high peak of short duration or a sequence of these peaks. Impulsive noise is also considered annoying.
Low frequency	Noise containing major components in the low-frequency range (20 to 250 Hz) of the frequency spectrum.

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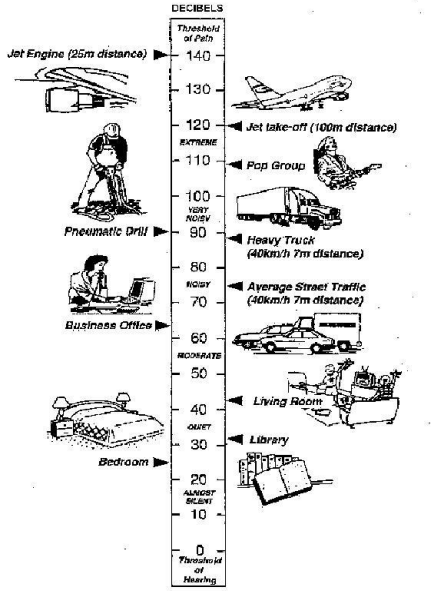
Noise criteria	The general set of non-mandatory noise levels for protecting against intrusive noise (for example, background noise plus 5 dB) and loss of amenity (e.g. noise levels for various land use).
Noise level (goal)	A noise level that should be adopted for planning purposes as the highest acceptable noise level for the specific area, land use and time of day.
Noise limits	Enforceable noise levels that appear in conditions on consents and licences. The noise limits are based on achievable noise levels, which the proponent has predicted can be met during the environmental assessment. Exceedance of the noise limits can result in the requirement for either the development of noise management plans or legal action.
Performance-based goals	Goals specified in terms of the outcomes/performance to be achieved, but not in terms of the means of achieving them.
Rating Background Level (RBL)	The rating background level is the overall single figure background level representing each day, evening and night time period. The rating background level is the 10th percentile min L_{A90} noise level measured over all day, evening and night time monitoring periods.
Receptor	The noise-sensitive land use at which noise from a development can be heard.
Sleep disturbance	Awakenings and disturbance of sleep stages.
Sound and decibels (dB)	Sound (or noise) is caused by minute changes in atmospheric pressure that are detected by the human ear. The ratio between the quietest noise audible and that which should cause permanent hearing damage is a million times the change in sound pressure. To simplify this range the sound pressures are logarithmically converted to decibels from a reference level of 2 x 10-5 Pa. The picture below indicates typical noise levels from common noise sources.



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dB is the abbreviation for decibel – a unit of sound measurement. It is equivalent to 10 times the logarithm (to base 10) of the ratio of a given sound pressure to a reference pressure.

Sound power Level (SWL)

The sound power level of a noise source is the sound energy emitted by the source. Notated as SWL, sound power levels are typically presented in *dB(A)*.

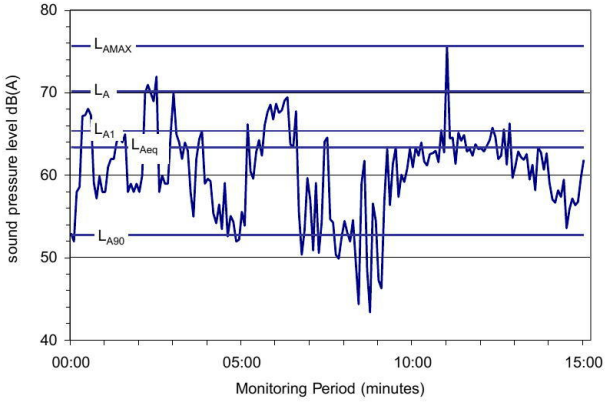
Sound Pressure Level (SPL)

The level of noise, usually expressed as SPL in *dB(A)*, as measured by a standard sound level meter with a pressure microphone. The sound pressure level in *dB(A)* gives a close indication of the subjective loudness of the noise.

Statistic noise levels

Noise levels varying over time (e.g. community noise, traffic noise, construction noise) are described in terms of the statistical exceedance level.

A hypothetical example of A weighted noise levels over a 15 minute measurement period is indicated in the following figure:



Key descriptors:

L_{Amax} Maximum recorded noise level.

L_{A1} The noise level exceeded for 1% of the 15 minute interval.

L_{A10} Noise level present for 10% of the 15 minute interval. Commonly referred to the average maximum noise level.

L_{Aeq} Equivalent continuous (energy average) A-weighted sound pressure level. It is defined as the steady sound level that contains the same amount of acoustic energy as the corresponding time-varying sound.

L_{A90} Noise level exceeded for 90% of time (background level). The average minimum background sound level (in the absence of the source under consideration).

Threshold

The lowest sound pressure level that produces a detectable response (in an instrument/person).

Tonality

Tonal noise contains one or more prominent tones (and characterised by a distinct frequency components) and is considered more annoying. A 2 to 5 dB(A) penalty is typically applied to noise sources with tonal characteristics

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Appendix B Unattended Noise Monitoring Results

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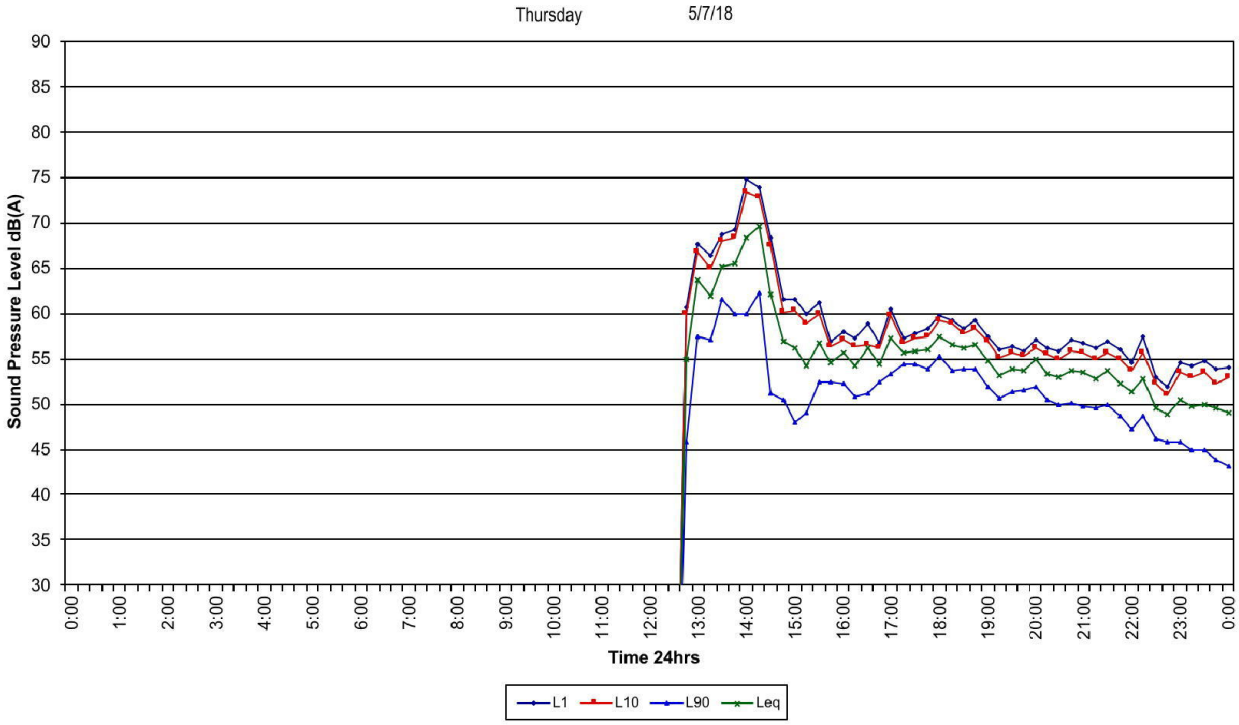

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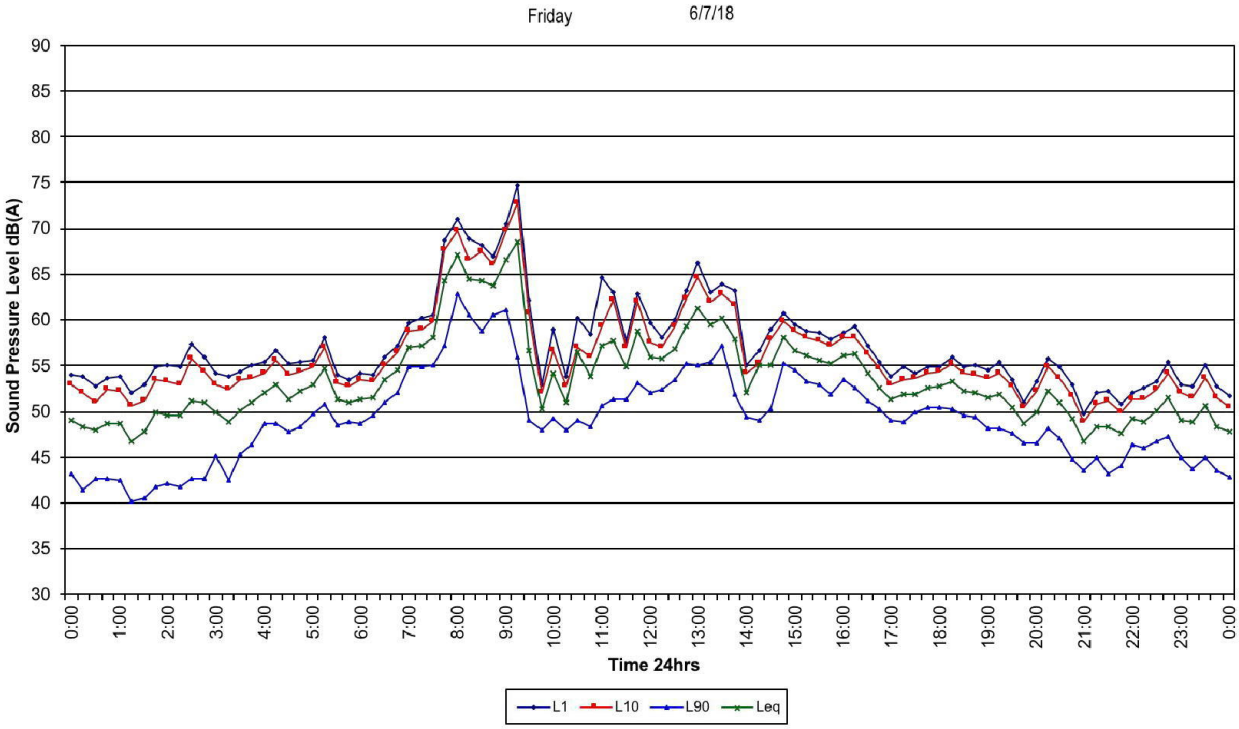

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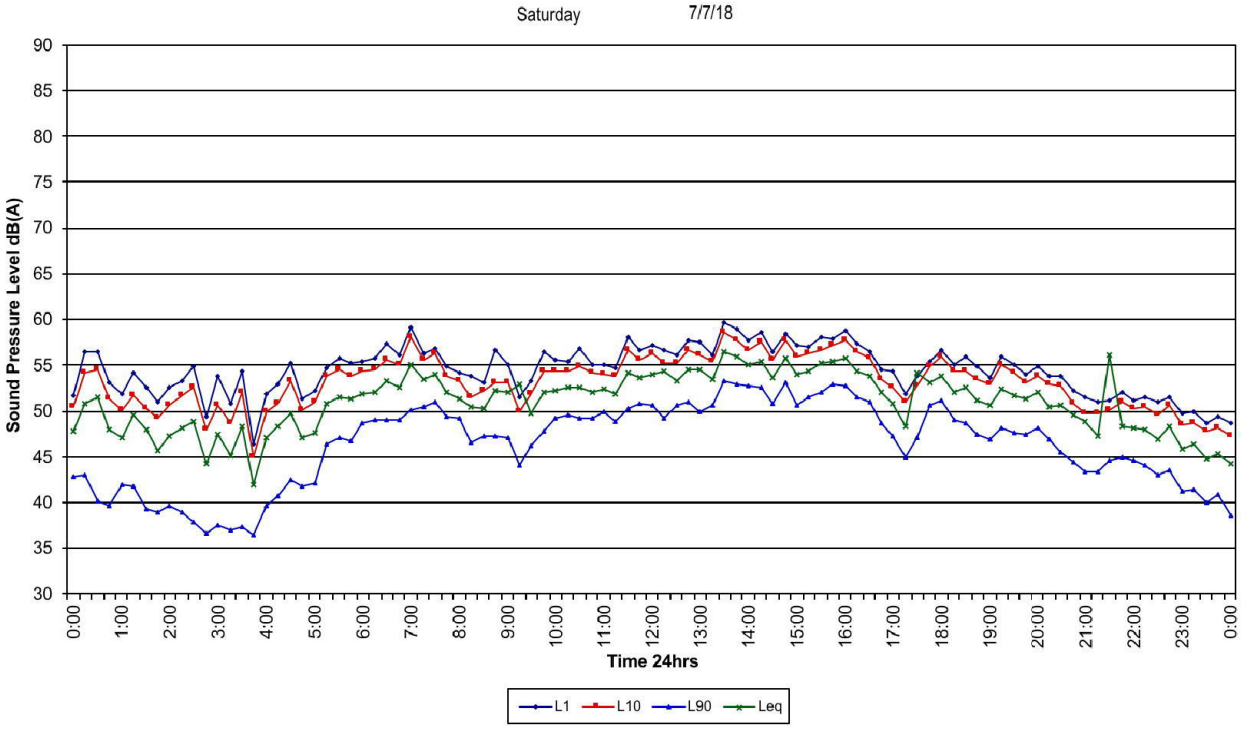

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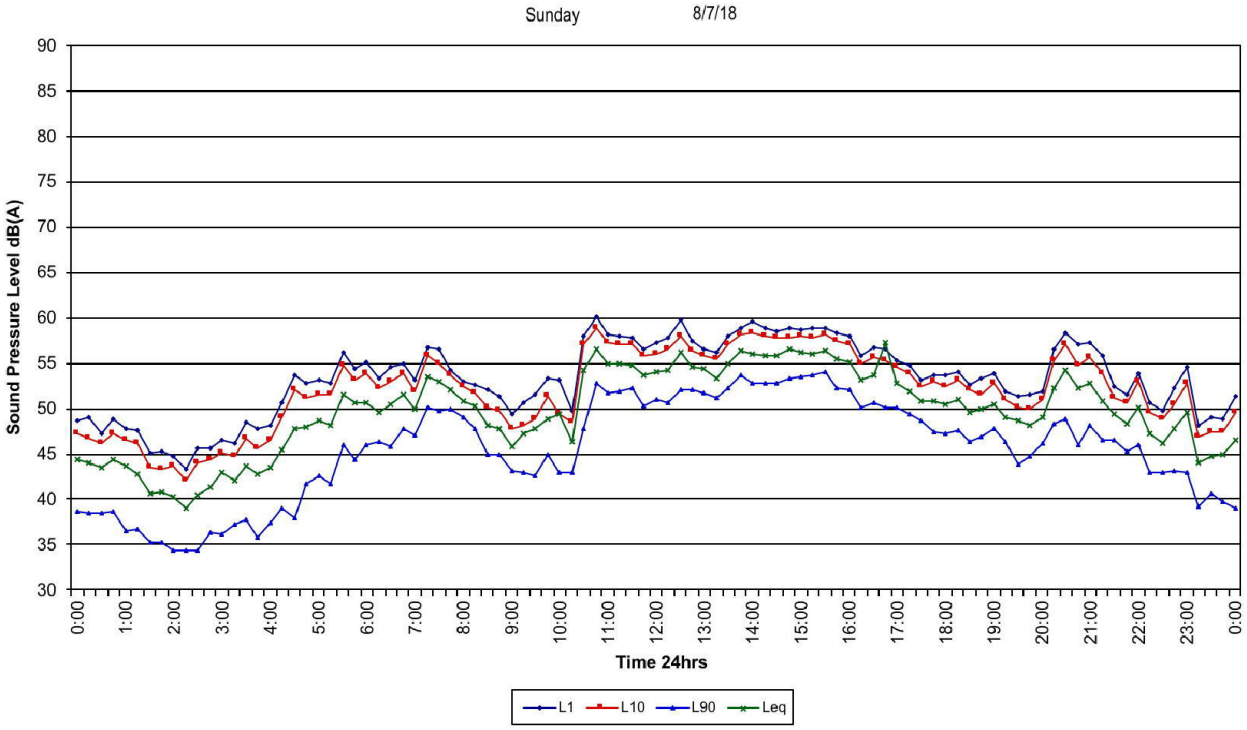

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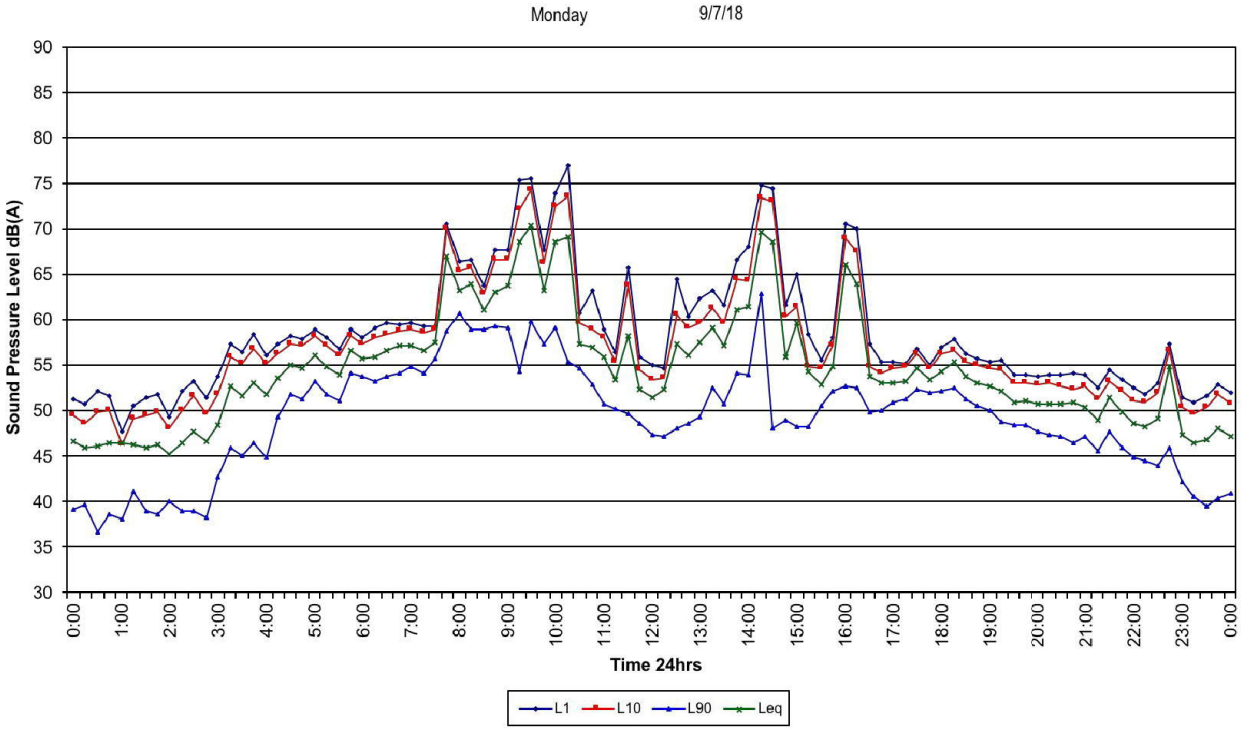

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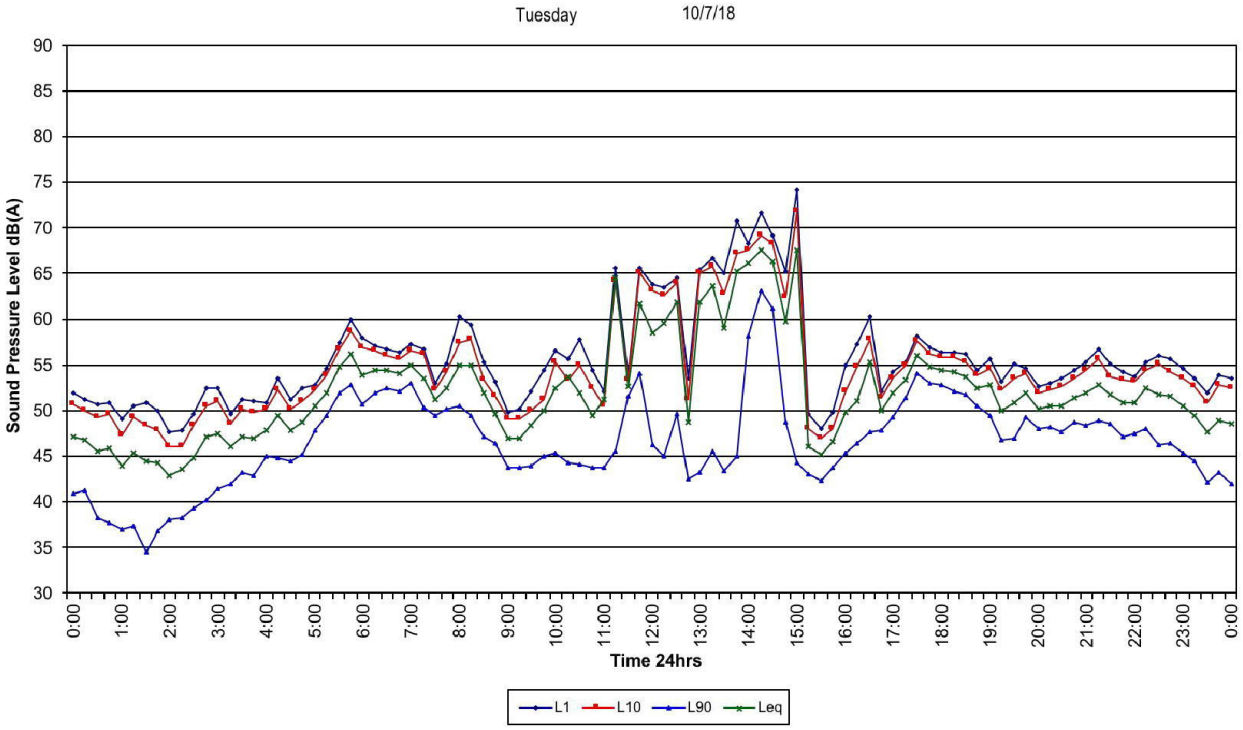

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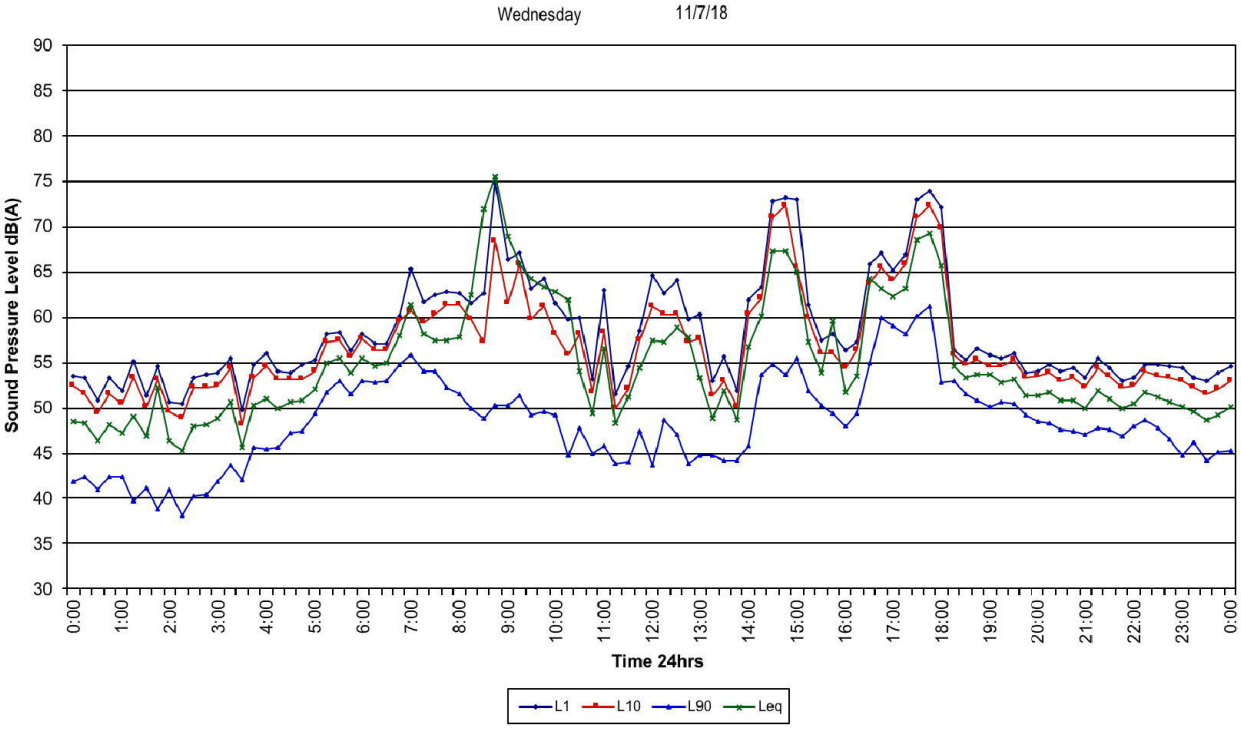
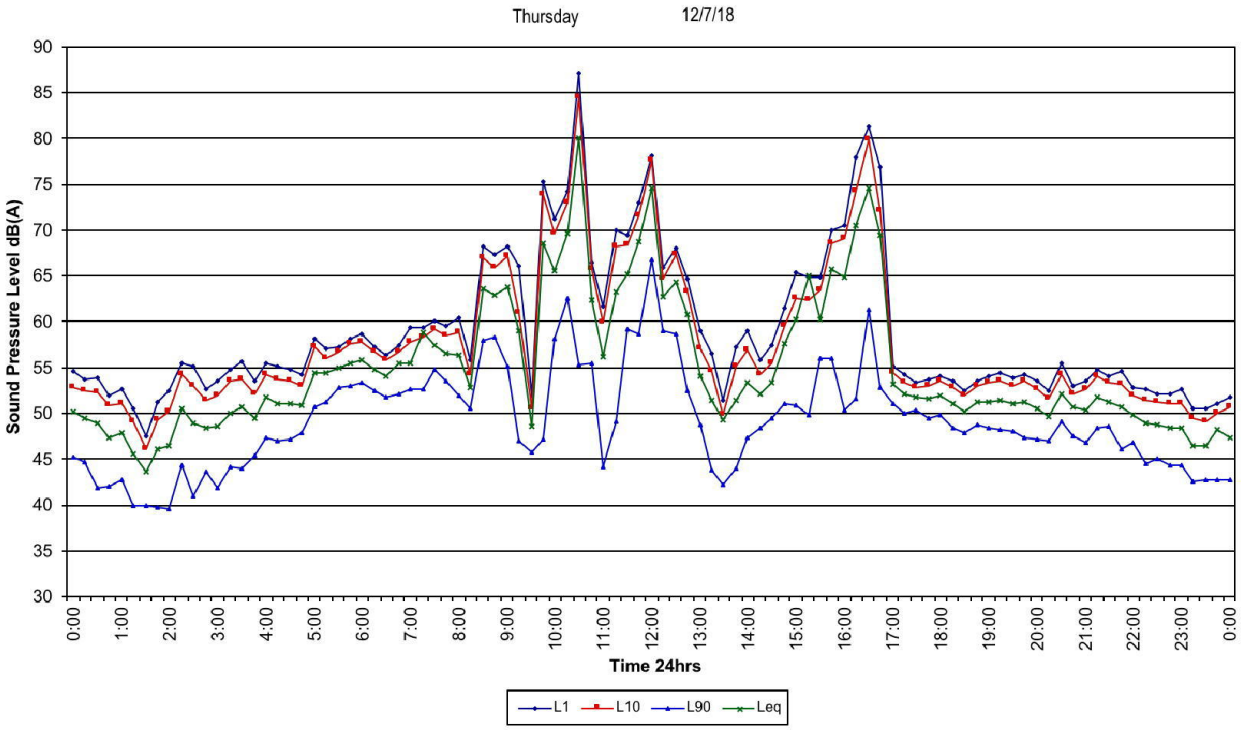


78 - 88 Tench Ave, Jamisontown



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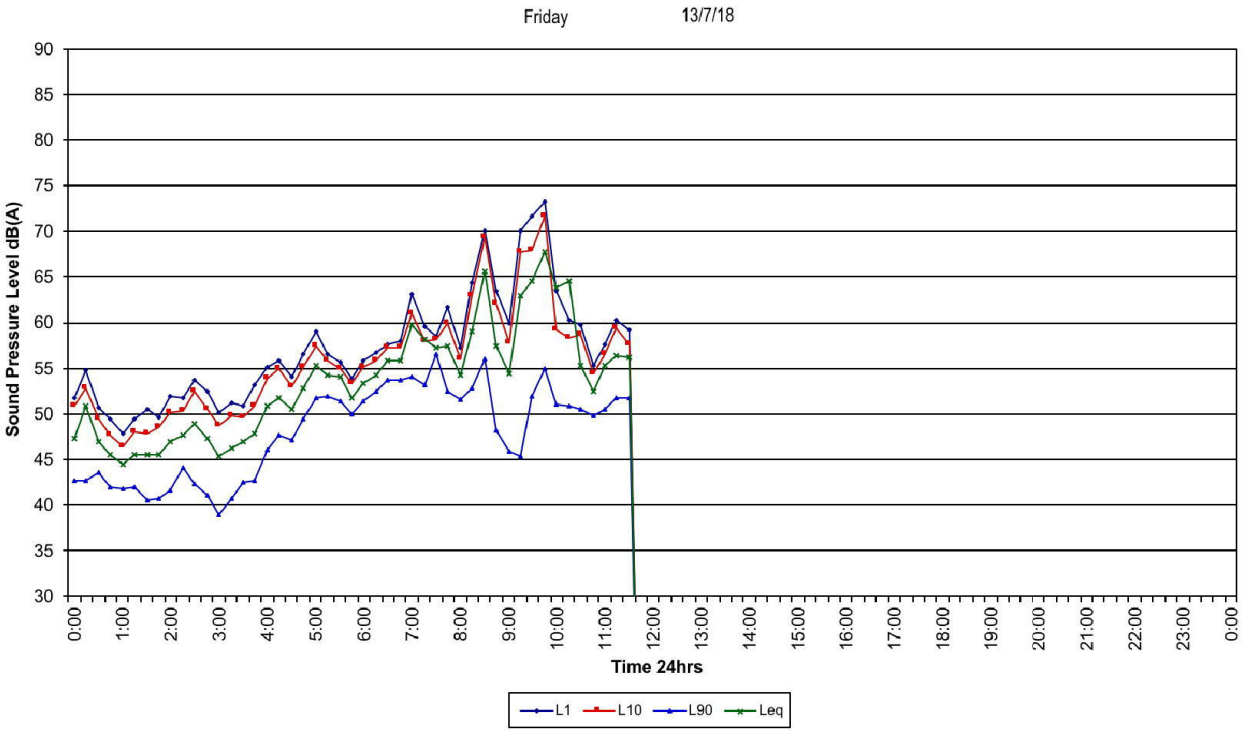
78 - 88 Tench Ave, Jamisontown



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Appendix C Calibration Certificate

Acoustic Research Labs Pty Ltd
Level 7 Building 2 423 Pennant Hills Rd
Pennant Hills NSW AUSTRALIA 2120
Ph: +61 2 9484 0800 A.B.N. 65 160 399 119
www.acousticresearch.com.au

Sound Level Meter
IEC 61672-3.2013

Calibration Certificate

Calibration Number C16718

Client Details Rodney Stevens Acoustics Pty Ltd
1 Majura Close
St Ives Chase NSW 2075

Equipment Tested/ Model Number : Rion NL-42EX
Instrument Serial Number : 00546395
Microphone Serial Number : 144589
Pre-amplifier Serial Number : 23057

Pre-Test Atmospheric Conditions		Post-Test Atmospheric Conditions	
Ambient Temperature :	22.9°C	**Ambient Temperature :**	22.7°C
Relative Humidity :	51.2%	**Relative Humidity :**	50.7%
Barometric Pressure :	99.09kPa	**Barometric Pressure :**	99.04kPa

Calibration Technician : Vicky Jaiswal
Calibration Date : 10/01/2017
Secondary Check: Riley Cooper
Report Issue Date : 10/01/2017

Approved Signatory : Juan Aguero

Clause and Characteristic Tested	Result	Clause and Characteristic Tested	Result
12: Acoustical Sig. tests of a frequency weighting	*Pass*	17: Level linearity incl. the level range control	*Pass*
13: Electrical Sig. tests of frequency weightings	*Pass*	18: Toneburst response	*Pass*
14: Frequency and time weightings at 1 kHz	*Pass*	19: C Weighted Peak Sound Level	*Pass*
15: Long Term Stability	*Pass*	20: Overload Indication	*Pass*
16: Level linearity on the reference level range	*Pass*	21: High Level Stability	*Pass*

The sound level meter submitted for testing has successfully completed the class 2 periodic tests of IEC 61672-3:2006, for the environmental conditions under which the tests were performed.

However, no general statement or conclusion can be made about conformance of the sound level meter to the full requirements of IEC 61672-1:2002 because evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2002 and because the periodic tests of IEC 61672-3:2006 cover only a limited subset of the specifications in IEC 61672-1:2002.

Least Uncertainties of Measurement -

Acoustic Tests		Environmental Conditions	
31.5 Hz to 8kHz	*±0.12dB*	*Temperature*	*±0.05°C*
12.5kHz	*±0.18dB*	*Relative Humidity*	*±0.46%*
16kHz	*±0.31dB*	*Barometric Pressure*	*±0.017kPa*
Electrical Tests			
31.5 Hz to 20 kHz	*±0.12dB*		

All uncertainties are derived at the 95% confidence level with a coverage factor of 2.

This calibration certificate is to be read in conjunction with the calibration test report.

Acoustic Research Labs Pty Ltd is NATA Accredited Laboratory Number 14172.
Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration and inspection reports.

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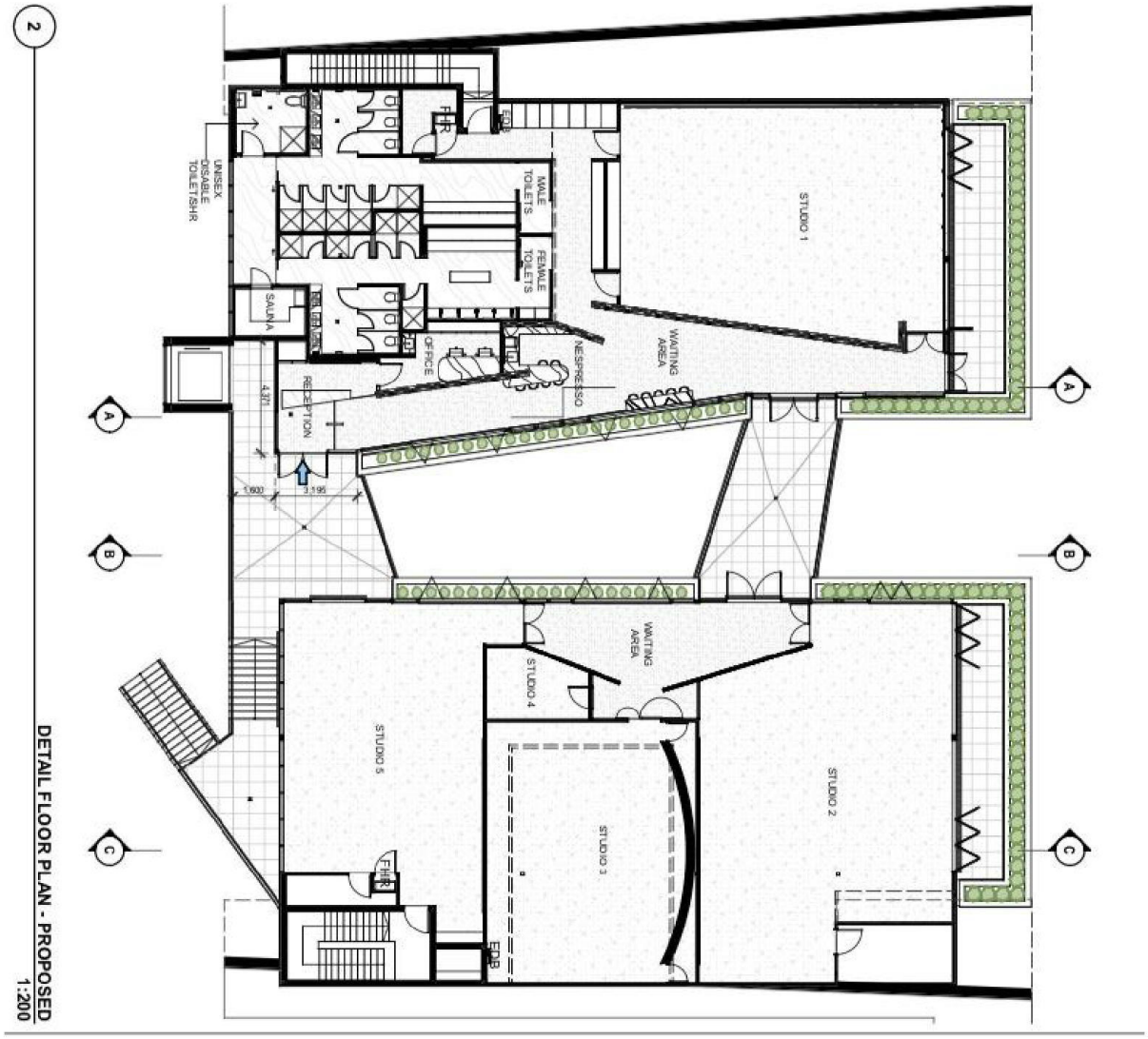
Appendix D Architectural Plans

Proposed Gym Layout



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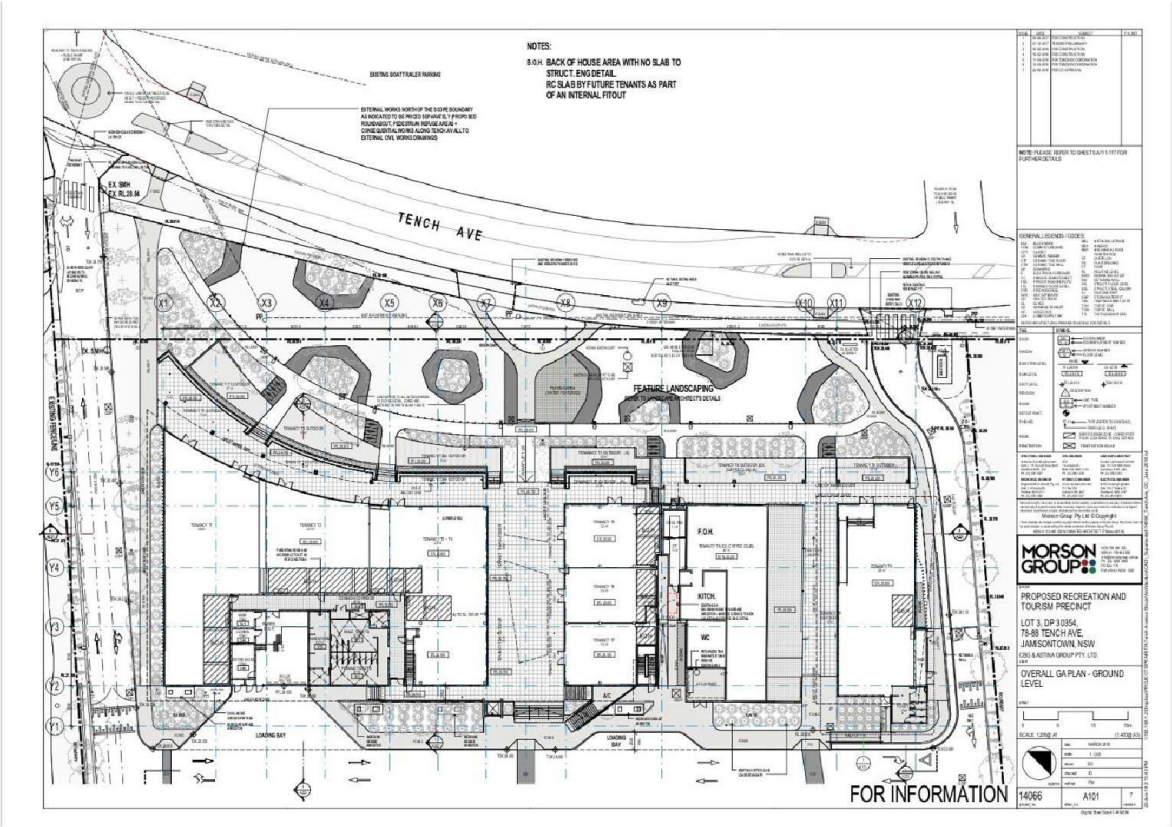
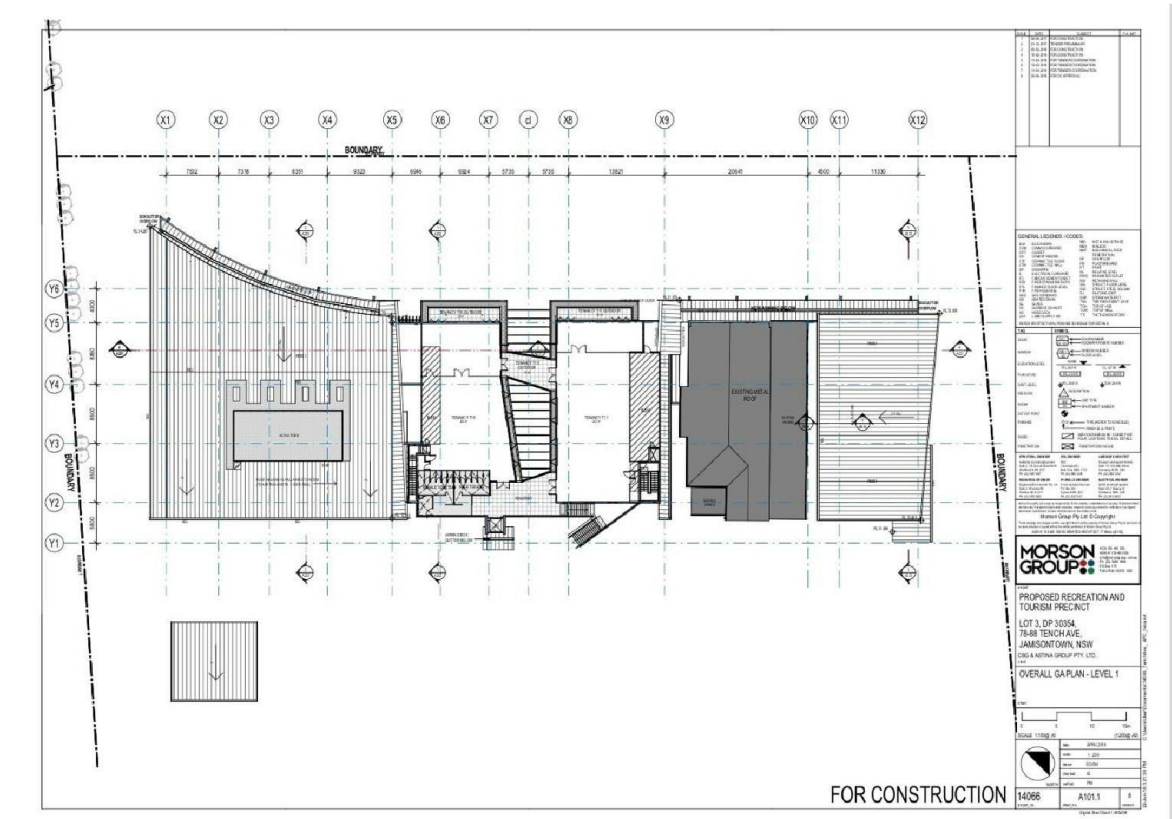
Overall Building GA Ground Floor Plan



Overall Building GA First Floor Plan



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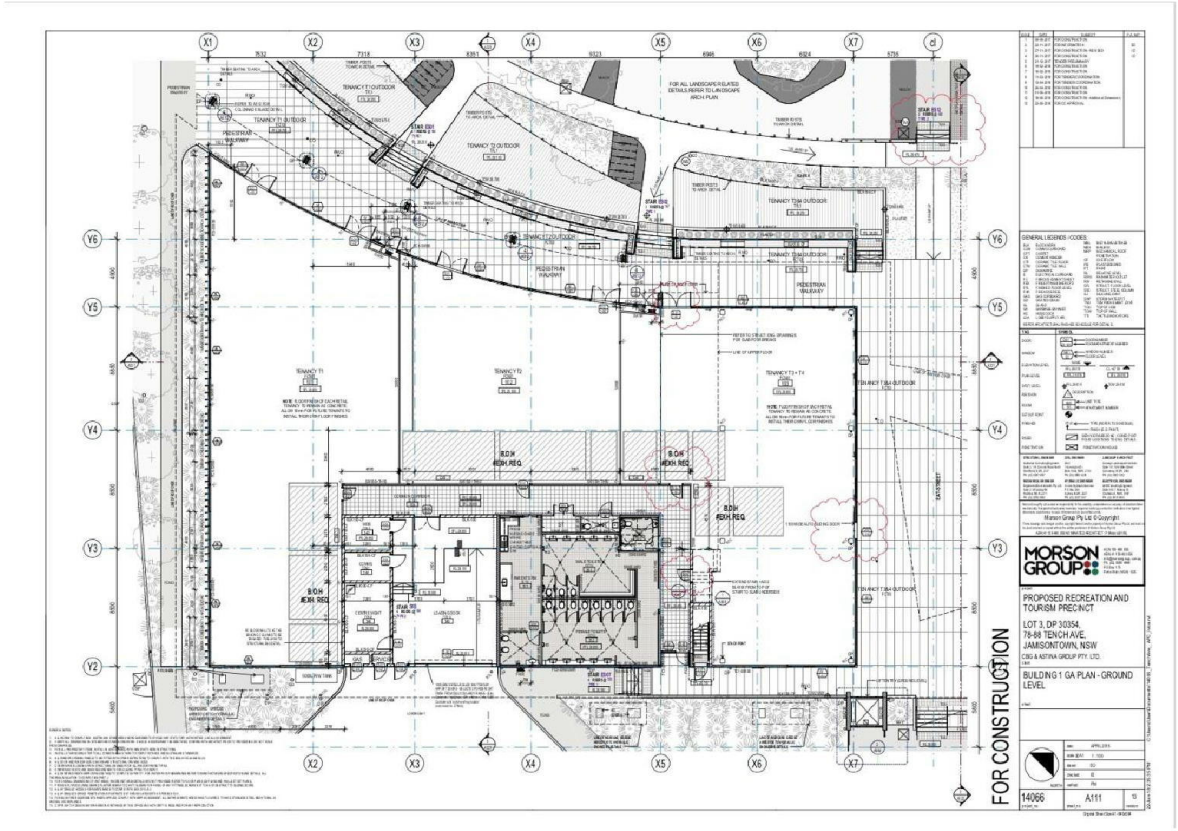
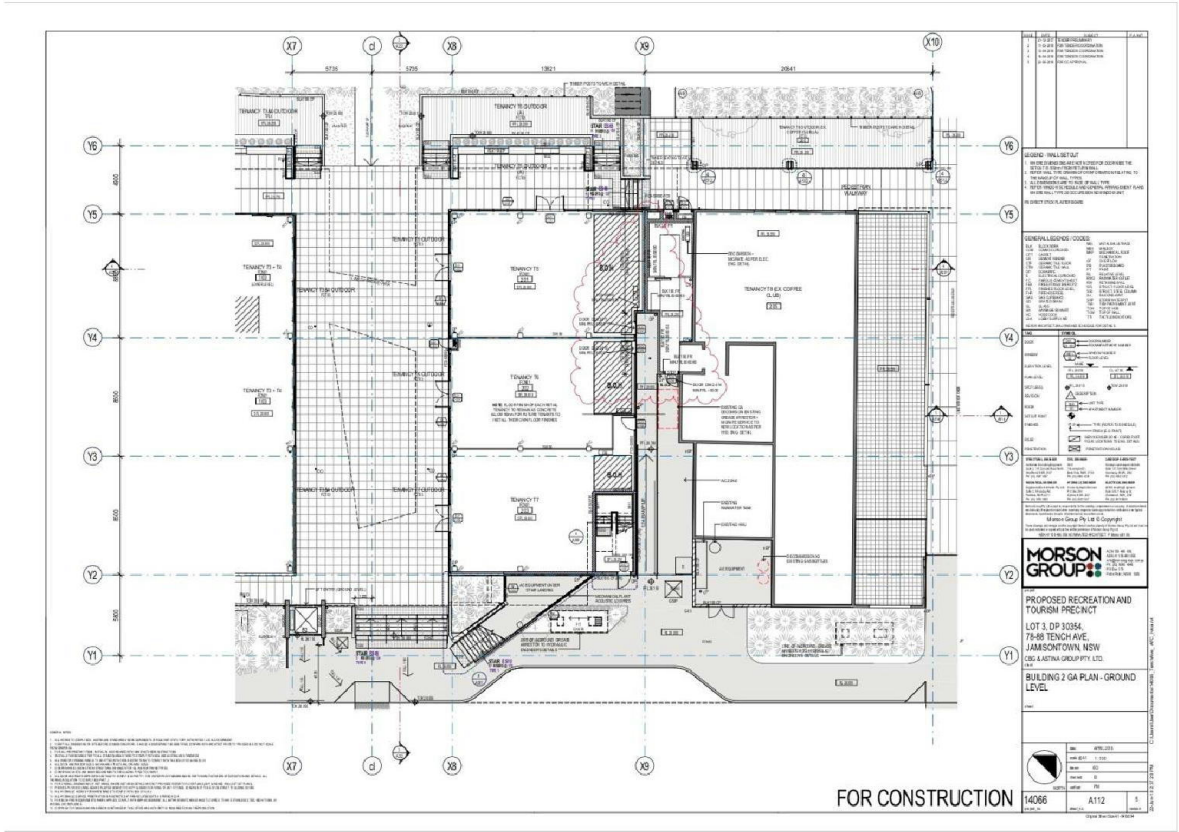
Building One GA Ground Floor Plan



Building Two GA Ground Floor Plan



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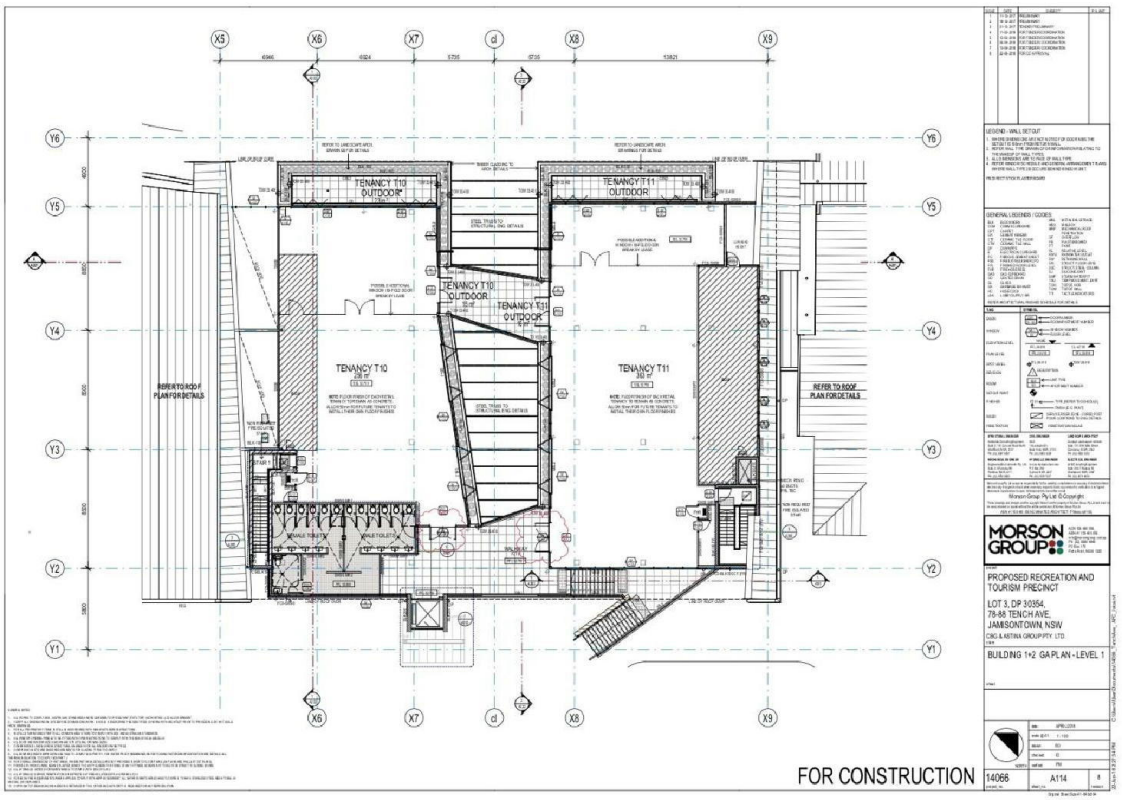
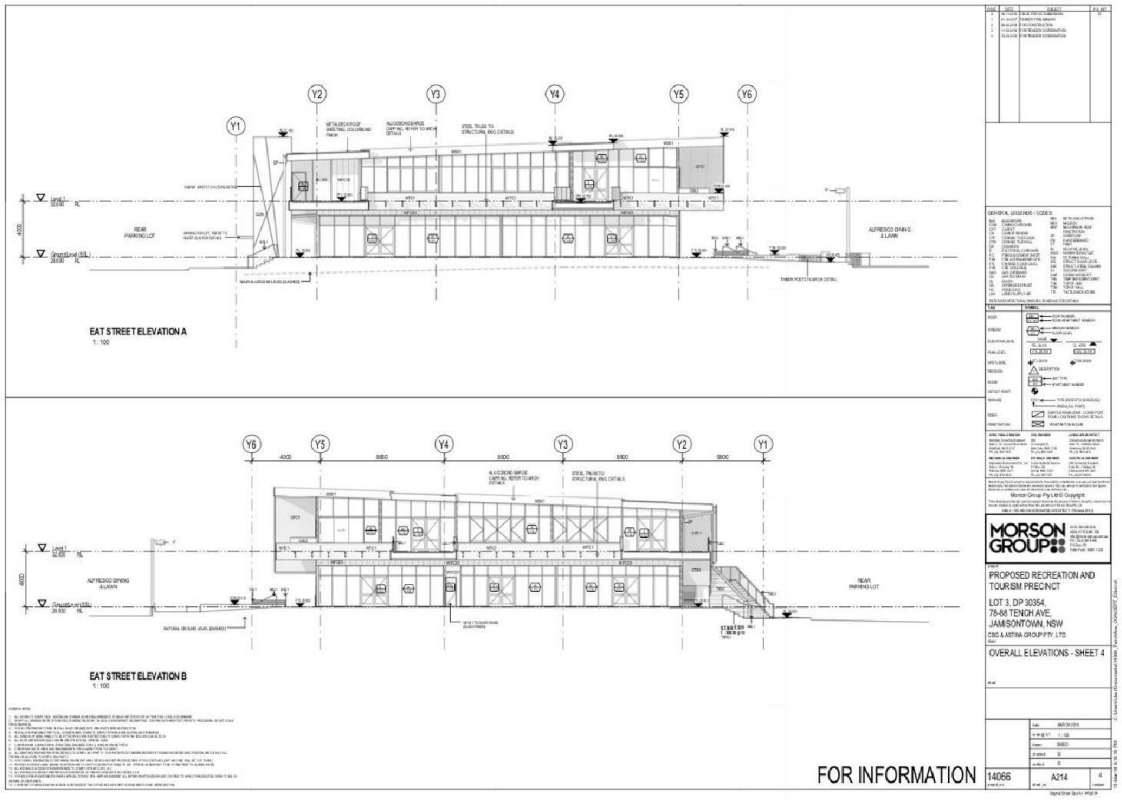
Building One and Two GA First Floor Plan



Elevations



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