Operational Noise Emission Assessment
Unit 11/ 4-8 Inman Road, Cromer, NSW

Client:
Precision Golf
C/o- Willowtree Planning

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GLOSSARY

NOISE

Noise is produced through rapid variations in air pressure at audible frequencies (20 Hz – 20 kHz). Most noise sources vary with time. The measurement of a variable noise source requires the ability to describe the sound over a particular duration of time. A series of industry standard statistical descriptors have been developed to describe variable noise, as outlined in **Section 2** below.

NOISE DESCRIPTORS

L_{eq} – The sound pressure level averaged over the measurement period. It can be considered as the equivalent continuous steady-state sound pressure level, which would have the same total acoustic energy as the real fluctuating noise over the same time period.

$L_{Aeq(15min)}$ – The A-weighted average equivalent sound level over a 15-minute period.

L_{A90} – The A-weighted noise level that has been exceeded for 90% of the measurement duration. This descriptor is used to describe the background noise level.

RBL – Rating Background Level. The overall single-figure background level representing each assessment period (day/evening/night) over the whole monitoring period (as opposed to over each 24hr period used for assessment background level) This is the level used for assessment purposes.

dB – Decibels. The fundamental unit of sound, a Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell. Probably the most common usage of the Decibel in reference to sound loudness is dB sound pressure level (SPL), referenced to the nominal threshold of human hearing. For sound in air and other gases, dB(SPL) is relative to 20 micropascals (μPa) = 2×10^{-5} Pa, the quietest sound a human can hear.

A-WEIGHTING

"A-weighting" refers to a prescribed amplitude versus frequency curve used to "weight" noise measurements in order to represent the frequency response of the human ear. Simply, the human ear is less sensitive to noise at some frequencies and more sensitive to noise at other frequencies. The A-weighting is a method to present a measurement or calculation result with a number representing how humans subjectively hear different frequencies at different levels.

NOISE CHARACTER, NOISE LEVEL AND ANNOYANCE

The perception of a given sound to be deemed annoying or acceptable is greatly influenced by the character of the sound and how it contrasts with the character of the background noise. A noise source may be measured to have only a marginal difference to the background noise level but may be perceived as annoying due to the character of the noise.

Acoustic Dynamics' analysis of noise considers both the noise level and sound character in the assessment of annoyance and impact on amenity.

1 INTRODUCTION

1.1 EXECUTIVE SUMMARY

Acoustic Dynamics is engaged by **Willowtree Planning** on behalf of **Precision Golf** to conduct an acoustic assessment of operational noise emission associated with the proposed development located at Unit 11/4-8 Inman Road, Cromer, NSW.

This document provides an assessment of noise emission resulting from various noise sources associated with the operation of the proposed development at the potentially most affected sensitive receiver locations.

This assessment is prepared in accordance with the various acoustic requirements of:

(a) Northern Beaches Council;
(b) NSW Environment Protection Authority; and
(c) Australian Standards.

1.2 DESCRIPTION OF PROPOSAL

The development site is located at Unit 11/ 4-8 Inman Road, Cromer, situated within a general industrial (IN1) land zone within the Northern Beaches Council area of NSW. The subject development is set within an industrial site, with a road frontage direct to Inman Road and South Creek Road.

The proposal is seeking approval to operate an indoor golf driving range. Various noise sources and operations associated with the proposal are predicted to include:

- Mechanical plant and equipment;
- Vehicle movements; and
- Staff and patron movements.

Receivers potentially impacted by noise emission resulting from operations associated with the proposal are predicted to include:

- Residential receivers at 30 Orlando Road, Cromer (**North**);
- Commercial receivers at 38 Orlando Road, Cromer (**North**);
- Commercial receivers at Northern Beaches Secondary College (**West**); and
- Industrial receivers within the complex.

The subject site, adjacent receivers and surrounding area is shown in the Location Map, Aerial Image and Drawings presented within **Appendix A**.

1.3 SCOPE

Acoustic Dynamics has been engaged to provide an acoustic assessment suitable for submission to the relevant authorities.

The scope of the assessment is to include the following:

- Review of local council planning and development control instruments, state guidelines, federal legislation and international standards relevant to noise emission at the subject site;
- Using minimum assumed rating background noise levels stipulated by the Noise Policy for Industry (NPfI), establish relevant noise emission criteria;
- Perform relevant calculations and noise modelling associated with the operations of the development to determine noise emission at nearby receiver locations; and
- Where necessary, provide recommendations for design measures to be incorporated to achieve compliance with the relevant criteria and reduce potential noise impacts at nearby receiver locations.

2 ASSESSMENT CRITERIA AND STANDARDS

Acoustic Dynamics has conducted a review of the local council, state government and federal legislation that is applicable to noise emission assessment from the subject site. The relevant sections of the legislation are presented below. The most stringent criteria which have been used in this assessment of the subject development are summarised below.

2.1 LOCAL COUNCIL CRITERIA

2.1.1 COUNCIL PLANNING & DEVELOPMENT CONTROL INSTRUMENTS

Acoustic Dynamics has conducted a review of the relevant Northern Beaches Council's planning and development control instruments including the following documents:

- *Warringah Local Environmental Plan (LEP) 2011*; and
- *Warringah Development Control Plan (DCP) 2011*.

Acoustic Dynamics' review of the *Warringah LEP 2011* did not yield specific acoustic criteria or information relevant to this assessment.

Acoustic Dynamics' review of the *Warringah DCP 2011* did not yield specific acoustic criteria or information relevant to this assessment.

2.2 NSW ENVIRONMENT PROTECTION AUTHORITY

2.2.1 NSW EPA'S NOISE POLICY FOR INDUSTRY (NPFI) 2017

The NSW EPA, in its *Noise Policy for Industry (NPfI) 2017* document, outlines and establishes noise criteria for industrial or other noise sources in various zoning areas.

Acoustic Dynamics advise that the following criteria have been applied for the assessment of noise emission associated with the use and operation of the proposed development.

Project Intrusiveness Noise Level

The intrusiveness noise level is determined as follows:

$L_{Aeq, 15min}$ = rating background noise level + 5 dB	
where:	
$L_{Aeq, 15min}$	represents the equivalent continuous (energy average) A-weighted sound pressure level of the source over 15 minutes.
and	
Rating background noise level	represents the background level to be used for assessment purposes, as determined by the method outlined in Fact Sheets A and B.

Project Amenity Noise Level

The recommended amenity noise levels represent the objective for **total** industrial noise at a receiver location, whereas the **project amenity noise level** represents the objective for a noise from a **single** industrial development at a receiver location.

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

In accordance with the residential receiver categories of the NPfI, Acoustic Dynamics advises that the project amenity noise level is based on the "*suburban*" residential receiver type. The acoustical environment of this area is typically characterised by intermittent traffic flows or with some limited commerce or industry. Evening ambient noise levels are typically defined by the natural environment and human activity.

Following the general procedures outlined in the EPA's NPfI, a summary of the established noise environment is presented in **Table 2.1**.

Table 2.1 Determined External Noise Levels and Project Noise Objectives – Suburban Residential Receivers

Location	Assessment Period	L_{A90} Rating Background Noise Level (RBL) [dB][2]	Project Intrusiveness Noise Level $L_{Aeq,15min}$ [dB]	Project Amenity Noise Level $L_{Aeq,15min}$ [dB][3]	Project Noise Trigger Level $L_{Aeq,15min}$ [dB]
Nearest Residential Receivers	Day (7am[1] to 6pm)	45	50	50	**50**
	Evening (6pm to 10pm)	40	45	40	**40**
	Night (10pm to 7am[1])	35	40	35	**35**

Note: 1) 8:00am on Sundays and public holidays.

2) Background noise levels obtained from EPA's NPfI (NPfI Table 2.3) for "suburban" residential receiver type.

3) Amenity adjustment based on "*suburban*" residential receiver type (NPfI Table 2.2). The noise emission objective has been modified in accordance with the recommendations detailed within the NPfI Section 2.2, for time standardisation of the intrusiveness and amenity noise levels ($L_{Aeq,15min}$ will be taken to be equal to the **$L_{Aeq,\ period}$ + 3 dB**).

NB: Project noise trigger level is the lowest value of project intrusiveness or project amenity noise level after conversion to the L_{Aeq} equivalent value.

For premises to which it applies, the NPfI noise criteria for the assessment of noise emission from industrial noise sources at the boundaries of other zoned areas are presented as **Table 2.2**.

Table 2.2 Project External Noise Level Objectives – Other Receivers

Type of Receiver	Noise Amenity Area	Assessment Period	Project Noise Trigger Level $L_{Aeq,15min}$ [dB][1]
Area specifically reserved for active recreation	All	When in use	55
Industrial premises	All	When in use	70

Acoustic Dynamics advises that achieving compliance with the NPfI's noise emission objectives applicable at the boundaries of the nearest sensitive receivers will adequately protect the acoustic amenity of all nearby receivers.

2.2.2 NSW EPA'S ROAD NOISE POLICY (RNP) 2011

The NSW EPA presents guidelines for assessment of road traffic noise in its *Road Noise Policy (RNP) 2011*. The document provides road traffic noise criteria for proposed roads as well as other developments with the potential to have an impact in relation to traffic noise generation.

The noise criteria applicable to the subject site is presented below.

Table 2.4 Road Traffic Noise Assessment Criteria for Residential Land Uses

Road category	Type of project / land use	Assessment Criteria [dB]	
		Day (7am – 10pm)	Night (10pm – 7am)
Local roads	6. Existing residences affected by **additional traffic** on existing local roads generated by land use developments	$L_{Aeq,\ (1\ hour)}$ 55 (external)	$L_{Aeq,\ (1\ hour)}$ 50 (external)

Accepted application of the Section 2.4 of the RNP is that where road traffic noise levels already exceed the assessment criteria, an increase of less than 2 dB represents a minor impact that is barely perceptible to the average person.

2.2.3 NSW EPA'S SLEEP DISTURBANCE CRITERION

Acoustic Dynamics advises that sleep disturbance is a complex issue, and the potential for sleep disturbance to occur depends on both the level of noise at a residential receiver, and the number of events that occur.

The NSW EPA has investigated overseas and Australian research on sleep disturbance. The assessment of noise for sleep disturbance relies on the application of a screening that indicates the potential for this to occur. The EPA's *Noise Guide for Local Government (NGLG) 2013* provides the following guidance for such a screening test:

> *"Currently, there is no definitive guideline to indicate a noise level that causes sleep disturbance and more research is needed to better define this relationship. Where likely disturbance to sleep is being assessed, a screening test can be applied that indicates the potential for this to occur. For example, this could be where the subject noise exceeds the background noise level by more than 15 dB(A). The most appropriate descriptors for a source relating to sleep disturbance would be $L_{A1(1\ minute)}$ (the level exceeded for 1% of the specified time period of 1 minute) or L_{Amax} (the maximum level during the specified time period) with measurement outside the bedroom window."*

Additionally, the guidelines of the NSW EPA's NPfI provide the following additional information:

> *"Where the subject development/premises night-time noise levels at a residential location exceed:*
> - *$L_{Aeq,15min}$ 40 dB(A) or the prevailing RBL plus 5 dB, whichever is the greater; and/or*
> - *L_{AFmax} 52 dB(A) or the prevailing RBL plus 15 dB, whichever is greater".*

Further to the above information, the following summarizes the sleep disturbance criterion:

$L_{Aeq,15min} \leq$ 40 dB or $L_{Aeq,15min} \leq$ (RBL + 5 dB), whichever is greater

AND

L_{Amax} or $L_{A1(1\ minute)} \leq L_{A90}$ + 15 dB or 52 dB(A), whichever is greater

In addition to the above, the EPA has previously published the following additional information relating to findings of significant research carried out for sleep disturbance:

> *"Maximum internal noise levels below 50-55 dBA are unlikely to cause awakening reactions… One or more noise events per night, with maximum internal noise levels of 65-70 dBA, are not likely to affect health and wellbeing significantly."*

In accordance with the NGLG and NPfI guidelines detailed above, the following sleep disturbance screening criterion has been applied for this project:

Sleep Disturbance Criteria:
$L_{Aeq,15min} \leq 40$ **dB**
AND
L_{Amax} or $L_{A1(1\ minute)} \leq 52$ **dB**

2.3 NSW PROTECTION OF THE ENVIRONMENT OPERATIONS LEGISLATION

2.3.1 PROTECTION OF THE ENVIRONMENT OPERATIONS (POEO) ACT 1997

Noise emission from any items of mechanical plant must comply with the requirements of the *Protection of the Environment Operations (POEO) Act 1997*. The POEO Act 1997 requires that the subject mechanical equipment must not generate *"offensive noise".*

"Offensive noise" is defined as follows:

> *"**"offensive noise"** means noise:*
>
> *(a) that, by reason of its level, nature, character or quality, or the time at which it is made, or any other circumstances:*
> *(i) is harmful to (or is likely to be harmful to) a person who is outside the premises from which it is emitted, or*
> *(ii) interferes unreasonably with (or is likely to interfere unreasonably with) the comfort or repose of a person who is outside the premises from which it is emitted, or*
> *(b) that is of a level, nature, character or quality prescribed by the regulations or that is made at a time, or in other circumstances, prescribed by the regulations."*

Council can enforce the above planning controls under the *Environmental Planning and Assessment Act of 1979*.

2.4 AUSTRALIAN STANDARDS

Acoustic Dynamics has conducted a review of relevant Australian Standards in relation to the subject development. The following details this review.

2.4.1 AS 2107:2016 "ACOUSTICS–RECOMMENDED DESIGN SOUND LEVELS.."

AS 2107:2016 recommends satisfactory and maximum design sound levels for various types of occupancy within buildings. AS 2107 recommends the following satisfactory and maximum design sound levels for the relevant types of occupancies and areas which are located within proximity to the subject development.

Table 2.5 Recommended Sound Levels for Different Areas of Occupancy (Extract from AS 2107 Table 1)

Type of occupancy / activity	*Design sound level, ($L_{Aeq,t}$) range [dB (A)]*
3 INDUSTRIAL BUILDINGS	
Assembly lines –	
Light machinery	*< 70*
Packaging and delivery	*< 60*
Process control rooms	*< 60*

Acoustic Dynamics advises that any levels of airborne noise transmitted into various areas of occupancy adjacent or within proximity to the subject development should not exceed the relevant design sound levels presented above.

By ensuring the noise levels associated with the operations of development received within the adjacent and nearby tenancies do not exceed the recommended internal design levels, it is likely to ensure occupants of nearby receivers are not adversely affected by the development.

3 ASSESSMENT METHODOLOGY

Acoustic modelling was undertaken using noise modelling software *(CadnaA Version 2020)* to predict operational noise levels generated by the development. CadnaA calculates environmental noise propagation according to the applicable international and ISO standards, including the ISO 9613 algorithm.

Within our calculations and acoustic modelling, noise emission contributions from the development have been considered taking the following factors into account:

- Airborne noise losses due to distance and ground topography;
- Losses due to direction and diffraction;
- Increases due to reflections; and
- Acoustic shielding.

3.1 MODELLING ASSUMPTIONS

The following assumptions were made regarding the noise model configuration:

1. The development is constructed as follows:
    - Floor is a solid concrete slab;
    - External walls are of concrete construction;
    - Roof is of sheet metal construction, lined internally with plasterboard;
2. The development will operate between the hours of:
    - Monday to Friday 6am to 11pm;
    - Saturday 6am to 11pm; and
    - Sunday 6am to 6pm.
3. Mechanical plant will service the development between operating hours;
4. Staff members will arrive and leave approximately 30 minutes prior to opening and closing;
5. Vehicles will park on-site.

3.2 NOISE SOURCES AND OPERATIONS

Acoustic Dynamics has established and assessed the following noise sources and operations associated with the development.

The noise data presented in **Table 3.1** has been established based on information provided by the proponent, short-term measurements and inspections conducted on-site, or referenced from our database of nearfield measurements at similar developments.

Table 3.1 Associated Noise Sources and Operations

Source	Sound Power Level L_w [dBA]
Patron Movements	
Groups of 3 patrons (1 patron talking normally, other 2 patrons listening)	66
Groups of 3 patrons (1 patron talking with raised voice, other 2 patrons listening)	74
Groups of 3 patrons (1 patron talking loudly, other 2 patrons listening)	66
Mechanical Equipment	
Two (2) medium (double fan) condenser units	70
Toilet exhaust	60
Vehicle Movements	
Light car, driving at a speed of 5km/h	81

3.3 RECEIVERS

The cumulative noise impact has been assessed to the potentially most affected point at the adjacent sensitive receiver properties and presented in **Table 3.2** below.

Table 3.2 Nearest Sensitive Receiver Locations

Source	Location	Direction
Residential Receivers		
R_1	30 Orlando Road	North
Commercial Receivers		
B_1	38 Orlando Road	North
B_2	Northern Beaches Secondary College	West
Industrial Receivers		
I_1	Neighbouring Industrial Premises	–

Acoustic Dynamics advises that by achieving compliance with the nearest sensitive receiver locations, compliance will also be achieved at all other sensitive receiver locations further away.

4 OPERATIONAL NOISE EMISSION ASSESSMENT

The calculated maximum noise emission levels at the nearest receiver locations against the relevant criteria are presented below. It is advised that by achieving compliance with the nearest sensitive receiver locations, compliance will also be achieved at all other receiver locations.

The assessment location for **external noise emission** is defined as the most affected point on or within any sensitive receiver property boundary. Examples of this location may be:

- 1.5m above ground level;
- On a balcony at 1.5m above floor level; and
- Outside a window on the ground or higher floors, at a height of 300mm below the head of the window.

The assessment location for **internal noise emission** is defined as the most affected point within the nearest room of any sensitive receiver property, assuming windows are closed.

4.1 EXTERNAL NOISE EMISSION

The calculated maximum **external** noise emission levels at the nearest receiver locations are presented against the relevant noise emission criteria below.

Table 4.1 Calculated External Noise Emission Levels & Relevant Noise Criteria

Receiver	Assessment Period	Noise Source[1]	Maximum $L_{Aeq(1hr/15min)}$ Noise Emission Level [dB][2]	Noise Emission L_{Aeq} Criterion [dB]	Complies ?
R_1	Night[3] (10:00pm to 7:00am)	Mechanical Plant	12	**35**	**Yes**
		Patron Movements	24		
		Vehicle Movements	15		
		Cumulative Total	**24**		
B_1	When in use[1]	Mechanical Plant	6	**35**	**Yes**
		Patron Movements	10		
		Vehicle Movements	15		
		Cumulative Total	**16**		
B_2		Mechanical Plant	5	**35**	**Yes**
		Patron Movements	10		
		Vehicle Movements	19		
		Cumulative Total	**19**		
I_1		Mechanical Plant	19	**70**	**Yes**
		Patron Movements	50		
		Vehicle Movements	41		
		Cumulative Total	**50**		

Note: 1) Scenario operations and noise sources are detailed in **Section 3**.

2) Acoustic Dynamics assumes noise sources will operate continuously over the assessment period.

3) Compliance with this most sensitive assessment period criterion ensures compliance during all other less stringent assessment periods.

Acoustic Dynamics advises the calculated **external** noise emission levels are conservatively based on **maximum capacity** operations at the development. Acoustic Dynamics advises that such a scenario is unlikely to occur and noise levels are likely to be below those calculated for the majority of the time.

4.2 ROAD TRAFFIC NOISE

Acoustic Dynamics understands that patrons and staff who drive will access the development via surrounding local roads. Vehicles utilising local roads are assessed in consideration of the NSW EPA's RNP criteria outlined in **Section 2**.

The calculated maximum noise emission levels at the nearest residential receivers, due to the vehicles utilising surrounding local roads, are presented below. Acoustic Dynamics advises that by achieving compliance with the nearest sensitive receiver locations, compliance will also be achieved at all other sensitive receiver locations further away.

Table 4.2 Calculated Road Traffic Noise Emission Levels & Relevant Noise Criteria

Sensitive Receiver	Predicted Maximum $L_{eq,1hr}$ Sound Pressure Level [dB][1]	Relevant $L_{Aeq,1hr}$ Criterion [dB][2,3]	Complies?
Nearest Residential Receivers	10	**50**	**Yes**

Note: 1) Predicted L_{Aeq} noise level is the maximum noise level measured within a 1-hour period.
2) Measured noise level within a 1-hour period during the night-time assessment period (10:00pm until 7:00am on weekdays, or 8:00am on weekends and public holidays).
3) Compliance with this most sensitive assessment period criterion ensures compliance during all other less stringent assessment periods.

Acoustic Dynamics advises that noise emission due to additional traffic on surrounding local roads is **predicted to comply** with the relevant road traffic noise criterion at the nearest sensitive receivers and at all other receivers located further away.

4.3 SLEEP DISTURBANCE

Acoustic Dynamics has determined the potential maximum $L_{A1(60\ Sec)}$ **external** noise emission level from the development resulting from car door slams, when measured at the nearest residential receivers during the night-time assessment period.

Table 4.3 Calculated Maximum Instantaneous External Noise Levels & Relevant Noise Criteria

Sensitive Receiver	Predicted Maximum $L_{A1(60\ Sec)}$ Sound Pressure Level [dB][1]	$L_{A1(60\ Sec)}$ Sleep Disturbance Criterion [dB][2]	Complies?
Nearest Residential Receivers	11	**52**	**Yes**

Note: 1) Predicted $L_{A1(60\ Sec)}$ noise level is the maximum noise level measured within a 60-second period.
2) Maximum instantaneous noise level measured during the night-time assessment period (10:00pm until 7:00am on weekdays, or 8:00am on weekends and public holidays).

Acoustic Dynamics advises that the calculated maximum instantaneous external noise events are **predicted to comply** with the applicable sleep disturbance criterion at the nearest sensitive receivers and at all other receivers located further away.

Acoustic Dynamics advises that instantaneous noise events that exceed the external sleep disturbance criterion at the nearest residential receivers are unlikely to cause awakening reactions.

5 DISCUSSION

The calculated noise emission levels associated with the operations of the proposed development indicate the following:

1. Noise emission resulting from the use and operations of the proposed development is **predicted to comply** with the relevant noise emission criteria of Northern Beaches Council, the NSW EPA and federal legislation during the proposed hours of operation when assessed at the nearest sensitive receivers;

2. Noise emission associated with additional traffic on surrounding local roads is **predicted to comply** with the NSW EPA's *Road Noise Policy (RNP) 2011* when assessed at the nearest sensitive receivers;

3. Maximum instantaneous external noise events are **predicted to comply** with the NSW EPA's guidelines on sleep disturbance when assessed at the nearest sensitive receivers;

4. There is **low risk** of acoustic disturbance to the nearest sensitive residential and industrial receivers during the proposed hours of operation;

5. To ensure the assessment is conducted in a conservative manner, noise emission has been assessed as a **worst-case** scenario (i.e. all noise generating activities and noise sources occurring simultaneously and at maximum capacity). Generally, noise emission associated with the operation of the facility is **predicted to be lower** than the calculations presented; and

6. The noise calculations and operational assumptions should not be considered prescriptive. They are modelling assumptions that have been used to demonstrate typical noise sources and operations associated with the facility **can be designed to achieve compliance** with the relevant criteria.

6 CONCLUSION

Acoustic Dynamics has conducted an acoustic assessment of operational noise emission associated with the proposed development located at Unit 11/ 4-8 Inman Road, Cromer, NSW.

A review of the applicable local council, state government, federal legislation and international standards was conducted. Noise levels were assessed in accordance with the requirements of:

(a) Northern Beaches Council;
(b) NSW Environment Protection Authority (EPA); and
(c) Australian Standards.

The assessment predicted noise impacts at nearby sensitive receiver locations. Noise modelling was conducted using assumed **worst-case** operational scenarios in **Section 4**.

Acoustic Opinion

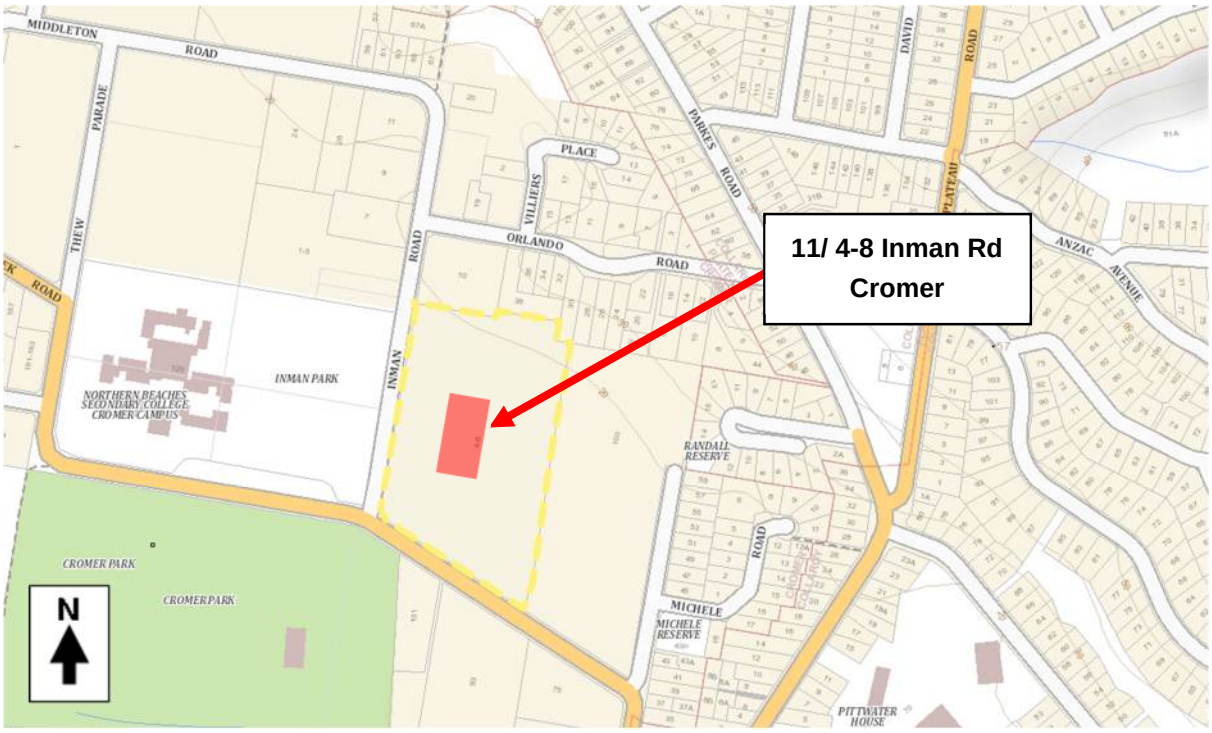
Further to our site survey, noise monitoring and measurements, our review of the relevant acoustic criteria and requirements, and our calculations, Acoustic Dynamics advises that the proposed development can be designed to comply with the relevant acoustic criteria of Northern Beaches Council, the NSW POEO Act 1997 and the NSW EPA.

It is our opinion that the acoustic risks associated with the proposal can be adequately controlled and the amenity of neighbouring properties and residents can be satisfactorily protected.

We trust that the above information meets with your present requirements and expectations. Please do not hesitate to contact us on 02 9908 1270 should you require more information.

APPENDIX A – LOCATION MAP, AERIAL IMAGE & PLANS

A.1 LOCATION MAP

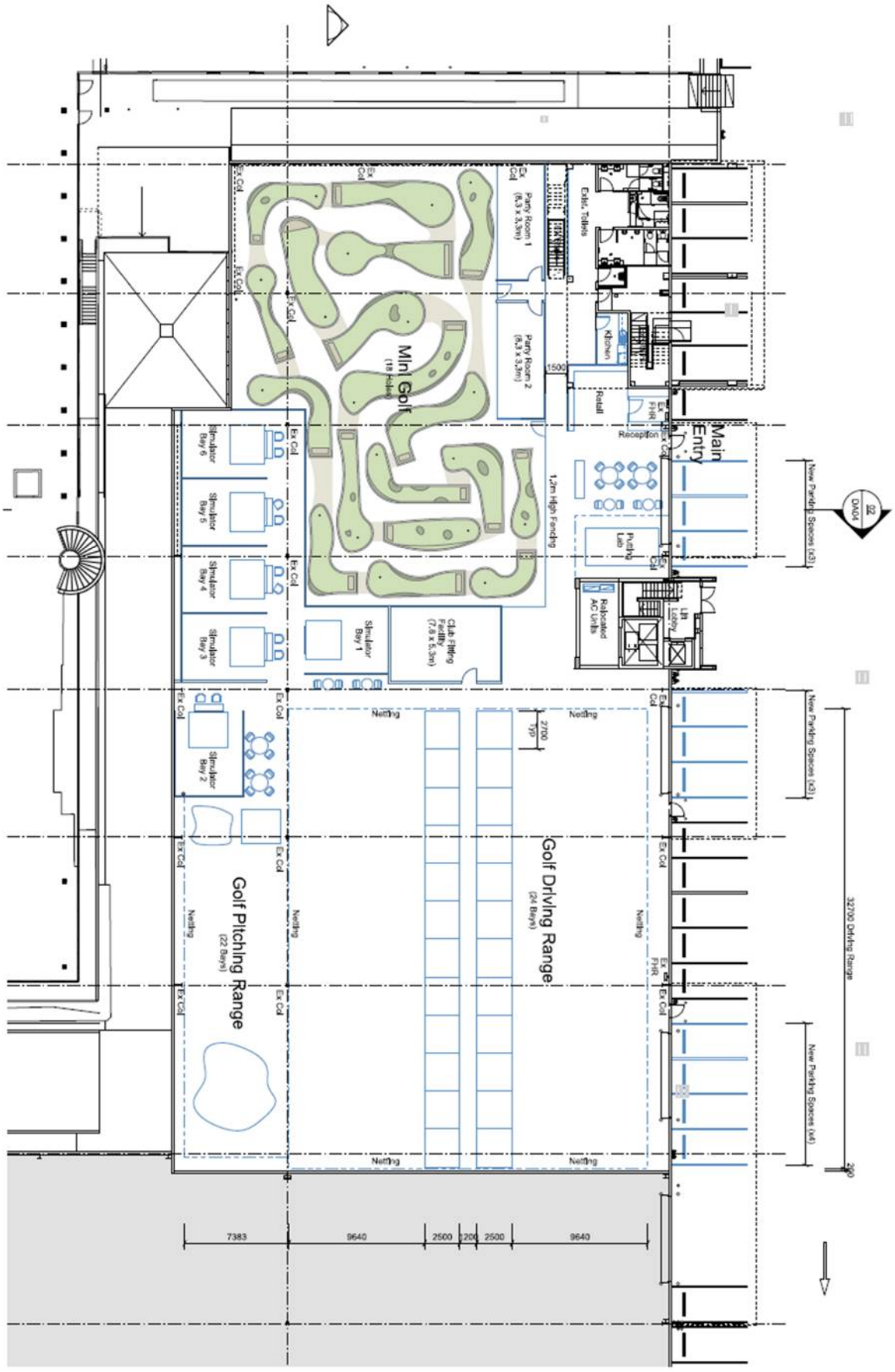


A.2 AERIAL IMAGE (COURTESY OF SIX MAPS)

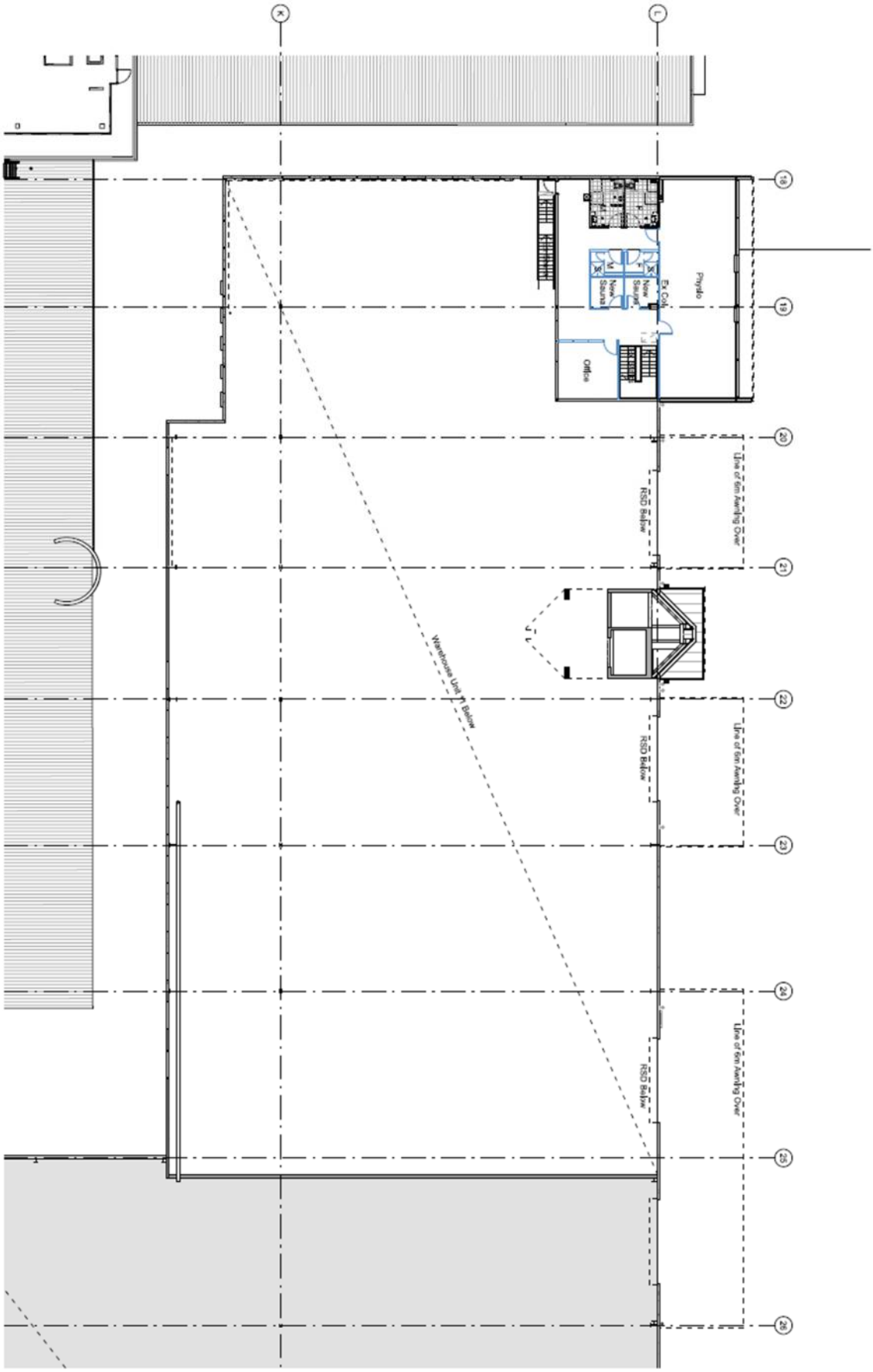
A.3 ARCHITECTURAL PLANS

A.3.1 SITE PLAN

A.3.2 GROUND FLOOR PLAN



A.3.3 FIRST FLOOR PLAN



A.3.4 ELEVATIONS