

**Noise and Sound Services**

# **Proposed Indoor Facility – Noise Impact Study**

At:-

Unit 9, 14 Inman Road,  
Cromer, NSW 2099

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July 2020

Report No. nss23435 – Final

Prepared at the Request of:-

**Northern Beaches Jiu Jitsu Academy**

Unit 9, 14 Inman Road,  
Cromer, NSW 2099

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## **1. INTRODUCTION**

Noise and Sound Services was requested by Jack Cox of Northern Beaches Jiu-Jitsu Academy to carry out a noise impact assessment for the existing indoor recreational facility. This is for a Development Application Change of Use DA DA2021/0774 - PAN-107942. The facility is located at the property's legal address is Unit 9, 14 Inman Road, Cromer.

The purpose of this report is to provide an independent and accurate assessment of the potential noise impact generated by activities within the facility on the amenity of adjacent or nearby properties or sensitive users. These are compared to relevant NSW Government noise policy.

## **2. EXISTING INDOOR FACILITY AND LOCATION**

### **2.1 Facility Description**

The indoor facility is located within the ground floor level at Unit 9, 14 Inman Road, Cromer. It is within an industrial business park. The building is occupied by nine adjoining light industrial/commercial operations.

The building is primarily of concrete construction floor slabs and hollow concrete block or cavity brick walls separating each commercial unit. 6 mm fixed laminated glazing extends the length of the industrial unit on the western façade and to roller door plus a hinged glass door facing out onto the eastern facade. The industrial unit as individualised air condition system.

The unit is accessed from the car park located on the eastern façade of the development. Existing internal partitions are already in place which consist of a gymnasium mat area on the ground floor and an office area on the upper level. The ground floor fit out (as already installed) include a soft-fall floor surface suitable for Jiu-Jitsu exercises. The area does not include equipment likely to create noise impacts. The upper level is an office/store, and no operational exercises or equipment is carried out in this area.

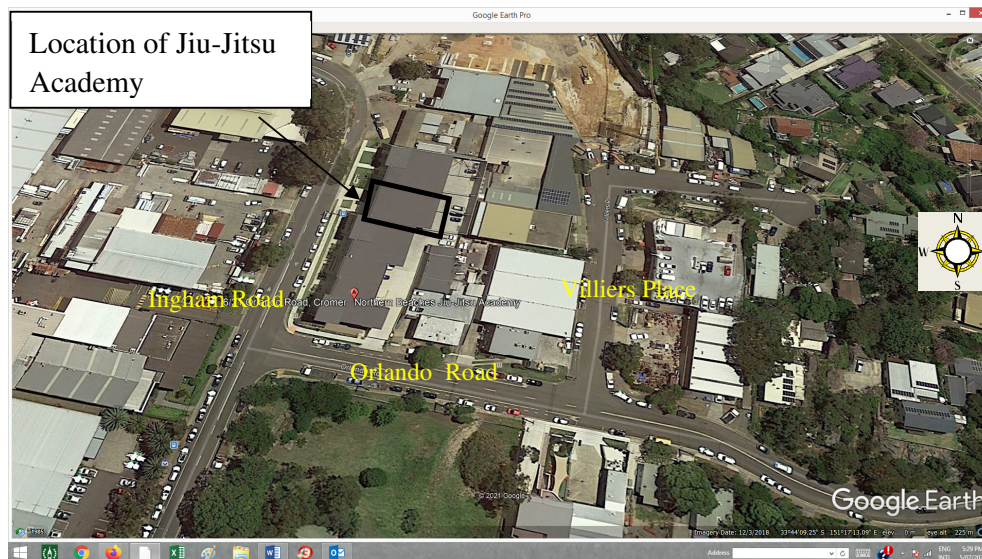
Background music is provided to the Jiu-Jitsu area at a low level that ensures instructor voices within the room are clearly audible without the aid of amplification or raised speech levels.

The hours of operation with 10-20 patrons are Monday – Thursday: 4:00pm to 7:30pm-Friday: 4:00pm to 8:00pm-Saturday: 8:30am to 12:00pm-Sunday: Closed.

## 2.2 Building Location

The indoor recreational facility is located within an industrial business park in Cromer. The nearest residential properties are located at 30 Orlando Road, Cromer approximately 160 metres to the east and at 22 Gilmore Avenue approximately 160 metres to the north. There is no direct line-of-sight to residential properties as the facilities are acoustically shielded within the industrial business park. Considering the distance between the locations, residential properties will be unaffected by noise impacts from the proposed development. Hence, this assessment addresses any potential noise emissions from the development impacting adjoining commercial or industrial premises. These are unit 7 Posse Clothing and Unit 5 which is a cabinet maker. Bob System Services at 2/2 Villiers Place, Cromer have a high level outdoor area facing the car park.

The outdoor acoustic environment during the day is influenced by traffic noise from Orlando Road and private and commercial vehicles accessing the industrial business park.



*Figure 1. Development Location. Source: Google Earth.*

## 3. NOISE CRITERIA

The objectives of the noise impact assessment is to ensure adjoining commercial tenancies are not unduly impacted by noise to an extent that could affect typical commercial and private office operations. In addition, this section reviews the NSW Government policy for noise sources and developments which may be used as a basis for realistic noise goals for the subject facility.

### 3.1 NSW Government Criteria

The NSW Government, via the Environment Protection Authority (EPA), provide guidelines for many industrial, commercial and domestic types of noise sources. The primary aim of environmental noise control is to minimise the occurrence of offensive noise in the community. To be both effective and equitable, the determination and application of environmental noise control measures must take into account many factors, for example: -

- the variation in response between individuals to any noise;
- the inherently noisy characteristics of many activities;
- the circumstances within which the noise occurs;
- the technical and economic feasibility for noise control; and
- the social worth of the activity.

Offensive noise is defined in the NSW Protection of the Environment Operations Act 1997 (POEO Act) as being noise:-

- a) *that, by reason is of its level, nature, character or quality, or the time at which it is made, or 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.'*

### 2.1 NSW Noise Policy for Industry (2017)

The assessment procedure for industrial and commercial noise sources given in the Noise Policy for Industry (2017) has two components:-

- **Controlling intrusive noise impacts; and**
- **Maintaining noise level amenity.**

Both components are taken into account when determining a project noise trigger level for residential receivers, but only the amenity component is applied for commercial or industrial receivers. The project noise trigger level is a level that, if exceeded, would indicate a potential noise impact on the community, and so 'trigger' a management response. The project noise trigger level reflects the most stringent noise level requirement.

### 2.1.1 Intrusive Noise Impacts

The intrusive noise trigger levels only apply to residential receivers. In this case, there are no impacted residential receivers, as any noise or sound from the proposed Jiu-Jitsu Academy will not be audible, at any time.

### 3.2.2 Protecting Noise Amenity

In the Noise Policy for Industry, it is stated that *'To limit continuing increases in noise levels from application of the intrusiveness level alone, the ambient noise level within an area from all industrial noise sources combined, should remain below the recommended amenity noise levels specified in Table 2.2 where feasible and reasonable.'*

The relevant parts of the NSW Government's recommended levels are given in Table 1 below.

**TABLE 1: AMENITY NOISE LEVELS**

Receiver	Noise Amenity Area	Time of Day	Recommended Amenity Noise Level - $L_{Aeq}$ , dB(A)
Commercial premises	All	When in Use	65
Industrial premises	All	When in Use	70

### 2.1.2 Modifying Factor Adjustments

Where a noise source contains certain characteristics, such as tonality, intermittency, irregularity or dominant low-frequency content, there is evidence to suggest that it can cause greater annoyance than other noise at the same sound pressure level. A correction should be applied to both the intrusive and the amenity measurement before a comparison is made with the criteria. An abbreviated version of the correction factors is shown in Table 2 below:-

**TABLE 2 – MODIFYING FACTOR CORRECTIONS**

<b>Factor</b>	<b>Assessment/ Measurement</b>	<b>When to Apply</b>	<b>Correction</b>	<b>Comments</b>
Tonal Noise	One-third octave band or narrow band analysis	Level of one third octave band exceeds the level of the adjacent bands by 5 dB or more (500-10000 Hz)	+ 5 dB	Narrow band frequency analysis may be required to precisely detect occurrence
Low Frequency Noise	Measurement of C-weighted and A-weighted level	Measure/assess C and A-weighted levels over same time period. Correction to be applied if the difference between the two is 15 dB or more	+ 5 dB	C-weighted is designed to be more responsive to low frequency noise
Intermittent Noise	Subjectively Assessed	Level varies by more than 5 dB	+ 5 dB	Adjustment to be applied for night time only
Duration	Single event noise 1.5 min to 2.5 hr	One event in any assessment period	0 to 20 dB(A)	Conditional on duration
Maximum adjustment		Where two or more modifying factors are indicated	10 dB(A)	Excludes duration correction

*Note: Tonal noise - Level of one third octave band exceeds the level of the adjacent bands on both sides by 5 dB or more if the centre frequency of the band containing the tone is in the range 500-10000 Hz; 8 dB or more if the centre frequency of the band containing the tone is in the range 160 to 400 Hz; or 15 dB or more if the centre frequency of the band containing the tone is in the range 25-125 Hz.*

## **4. SOURCE NOISE MEASUREMENTS**

### **4.1 Instrumentation**

The instrumentation used during the noise source survey consisted of a sound level meter for attended measurements.

The sound level meter was a Brüel and Kjær model 2250 (serial number 3011239). This meter conforms to Australian Standard AS IEC 61672.1-2004 : ‘*Electroacoustics - Sound level meters – Specifications*’. This is a class 1 precision sound level meter and has an accuracy suitable for both field and laboratory use. The sound level meter was checked, adjusted and aligned to conform to the Brüel and Kjær NATA factory specifications and issued with

conformance certificates within the last 24 months as required by the regulations. The internal test equipment used is traceable to the National Measurement Laboratory at C.S.I.R.O., Lindfield, NSW, Australia.

The calibrator was checked, adjusted and aligned to conform to the Brüel and Kjær factory specifications and issued with conformance certificates within the last 12 months as required by the regulations. The internal test equipment used is traceable to the National Measurement Laboratory at C.S.I.R.O., Lindfield, NSW, Australia.

#### 4.2 Measurement Procedure

Representative samples of the noise were measured on the afternoon of Thursday 24<sup>th</sup> June 2021. This was taken outside of the nearest neighbouring commercial unit i.e., Unit 7, the Posse clothing business and outside of Unit 2. This was while a Jiu-Jitsu exercise lesson was in operation with existing floor mats. The energy average ( $L_{Aeq, 15 \text{ minute}}$ ) measured at the closest affected units while the Jiu-Jitsu was in operation represents the source noise.

Occasional speech from outside the subject site was audible at the sound level meter microphone location. The amplified music was just audible. Fifteen-minute period measurements ( $L_{Aeq, 15 \text{ minute}}$ ) was taken when the Jiu-jitsu lesson was in operation throughout of the whole measurement period.

#### 4.3 Noise Measurement Results

The measured energy average levels ( $L_{Aeq, 15 \text{ minute}}$ ) are given below in Table 1.

**TABLE 1 – SUMMARY OF MEASURED NOISE LEVELS.**

Location	Ambient Noise Level ( $L_{Aeq, 15 \text{ minute}}$ ) dBA
Unit 7 – Outside front entrance	56
Unit 2 – Carpark area	52

*Note 1 - All levels rounded to the nearest whole decibel.*

### 5. NOISE IMPACT ASSESSMENT

The noise source has been measured for the occurrence of emissions from the development. The measurements relate to the level of noise generated within, and transferred from, the Jiu-Jitsu area to the nearest commercial receivers.

Noise emissions generated by the routines associated with Jiu-Jitsu training have been measured for this noise assessment of the subject Jiu-Jitsu lesson centre. Measured noise emission levels are typically the result of speech levels issued by



the instructor and participants, body fall and footfall impact noise. An energy average noise level ( $L_{Aeq, 15 \text{ minute}}$ ) of **56 dBA** was measured. This is compared to the trigger levels ( $L_{Aeq, 15 \text{ minute}}$ ) for commercial premises of **65 dBA** and hence no noise impact was found to occur. There are no residential premises where the noise will be audible and hence no noise impact will occur.

## 6. CONCLUSIONS

Noise emissions from the proposed Northern Beaches Jiu-Jitsu Academy at Unit Unit 9, 14 Inman Road, Cromer, NSW 2099 have been shown to be at a level that would not adversely impact the amenity or the operations of the adjoining commercial/industrial tenancies. In addition, noise levels will not be audible at any residential premises.

Date	Prepared by:	Status
5 <sup>th</sup> July 2021	Mark Scannell BA MAAS	Draft
Date	Checked by:	Status
6 <sup>th</sup> July 2021	Ken Scannell MSc MAAS	Draft
Date	Issued by:	Status
6 <sup>th</sup> July 2021	Ken Scannell MSc MAAS	Final

**Important Note.** All products and materials suggested by 'Noise and Sound Services' are selected for their acoustical properties only. All other properties such as airflow, aesthetics, chemical, corrosion, combustion, construction details, decomposition, expansion, fire rating, grout or tile cracking, loading, shrinkage, ventilation, etc are outside of 'Noise and Sound Services' field of expertise and **must be** checked with the supplier or suitably qualified specialist before purchase.