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ACOUSTICAL REPORT

‘KISS MY AXE’

40 WINBOURNE ROAD, BROOKVALE NSW

Date: 10 June 2021

File Reference: 4804R20210607as40WinbourneRdBrookvale_DA

DOCUMENT CONTROL

Project title	Acoustical Report 'Kiss my Axe' 40 Winbourne Road, Brookvale NSW			
Project number	4804			
Document reference	4804R20210607as40WinbourneRdBrookvale_DA			
Document path	G:\Shared drives\KA Acoustics 2021\REPORT\Other\4804 (as) 40 Winbourne Rd, Brookvale\4804R20210607as40WinbourneRdBrookvale_DA.docx			
Version	Date	Author	Review	Notes
V1	10/06/2021	AS	NK	Report version 1 available for issue
Approved by	Adam Semple M.A.A.S  Senior Acoustical Consultant			
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ACOUSTICAL REPORT
KISS MY AXE
40 WINBOURNE ROAD, BROOKVALE NSW

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1.0 INTRODUCTION

Koikas Acoustics Pty Ltd has been engaged by Kiss My Axe to conduct an acoustical assessment of noise emission from a proposed axe throwing facility at 40 Winbourne Road, Brookvale.

The report is structured as follows:

1. Present an outline of the development;
2. Identify all nearby noise-sensitive receivers;
3. Outline the acoustical standards and guidelines that have been used to derive noise emission objectives;
4. Summarise the relevant project noise objectives;
5. Identify all noise sources and/or noise-generating uses of the proposed development that may impact nearby noise-sensitive receivers;
6. Calculate/model the noise levels to surrounding noise-sensitive receivers, and
7. Recommend suitable noise control measures as required such that the noise emission objectives are met.



2.0 THE PROPOSAL

The application is for the fit-out and use of the premises at 40 Winbourne Road, Brookvale as an axe-throwing facility. The site is located within an industrial precinct that includes several auto-repair workshops, warehousing and distribution premises, industrial and building supplies retail stores, and a restaurant.

The floor plan is presented below in Figure 1. Figure 2 is a mark-up aerial image defining the approximate boundary of the facility and the classification of nearby premises.

Facilities of this type involve participants throwing small tomahawk-style axes at wooden targets from a short distance, approximately 5 metres as indicated on the plan. The dominant sources of noise associated with these types of premises include:

- Cheering of participants
- Axes hitting the targets
- Background music for social ambience

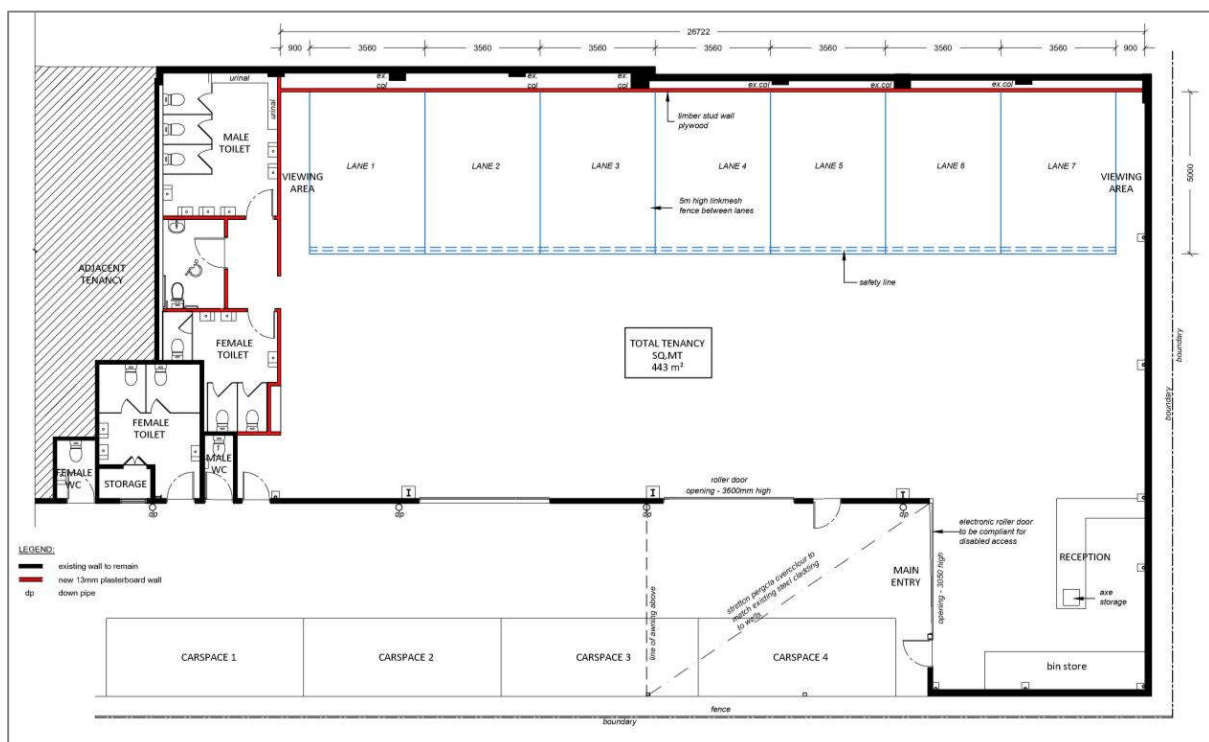


Figure 1. Proposed tenancy floor plan by ArchiSpectrum



Figure 2. Aerial image – Site and surrounds

3.0 NOISE SENSITIVE RECEIVERS

The site is located within an IN1 General Industrial land-use zoning under the Warringah LEP 2011. Nearby properties, all of which are located within the IN1 zone (excluding 758 Pittwater Road, which is within the B5 Business Centre zone) include:

- Royal Enfield Surfside motorcycle garage and Chubs BBQ at 42 Winbourne Road
- Hardware and General industrial building supplies store at 38 Winbourne Road
- Food distribution warehouse at 45 Winbourne Road
- Sydney Heritage Tiling at 43 Winbourne Road
- Auto repair workshops at 41, 39, and 37 Winbourne Road
- Boat sales and repair premises at 758 Pittwater Road
- Service station at 756 Pittwater Road

The front section of the site at 40 Winbourne Road is currently occupied by another food packaging and distribution premises.

The nearest residential premises appear to be over 200 metres northwest of the site in Pine Avenue, adjacent to Brookvale Oval. The proposed development will have no impact on any residential property.

This assessment reviews the potential for noise impact from the use of the premises on neighbouring industrial uses.



4.0 NOISE CRITERIA

Local Council planning rules/guidelines will generally dictate what noise limits should apply to a particular development. Section D3 of the Warringah Development Control Plan 2011 (DCP) is designed to ensure that noise emission does not unreasonably diminish the amenity of an area or result in noise intrusion that would be unreasonable for occupants of residential or other noise-sensitive premises.

There are no residential receivers that will be impacted by the proposed use and the neighbouring industrial uses are not sensitive to noise. The DCP provisions are not considered suitable for this site.

However, just because the nearby industrial uses are not sensitive to noise emission per the DCP provisions, does not mean that noise from the proposed development is unrestricted. Guidelines on suitable noise planning levels for industrial receivers are included within the NSW EPA Noise Policy for Industry 2017 (NPfI) and are adopted in this assessment.

4.1 EPA NOISE POLICY FOR INDUSTRY 2017

The NPfI is designed to assess environmental noise impacts associated with scheduled activities prescribed within Schedule 1 of the Protection of the Environment Operations Act 1997. It is also commonly used as a reference tool for establishing suitable planning levels for noise generated by mechanical plant and equipment and noise emission from commercial operations.

Following the appropriate methodology presented within the NPfI for industrial receivers, the following project noise triggers levels apply:

- **L_{Aeq} 15 minutes 68 dB (industrial receivers)**

Note: Industrial receivers are defined in the NPfI as being located within an industrial land zoning under the relevant LEP.

Noise levels are assessed at the most affected point on or within the property boundary.



5.0 NOISE ASSESSMENT

5.1 NOISE MODEL

Predictive modelling (CadnaA) has been used to assess noise levels at nearby industrial receiver sites. The CadnaA prediction model calculates according to the standard sound propagation algorithms defined in ISO9613, considering the local topography, ground condition, and the presence of noise reflectors/barriers. Per the sound propagation algorithms adopted in the ISO standard, the output of the noise model is a downwind sound pressure level which constitutes an assessment of noise-enhancing weather conditions.

5.2 DESIGN PARAMETERS

The acoustic assessments consider a range of design parameters that directly influence the output of the noise prediction model. A summary of the relevant design parameters is provided below:

- **Calculation and modelling**
 - Operational noise levels have been surveyed within another axe throwing facility (Kiss My Axe, Alexandria) and have been used in this assessment to predict noise emission.
 - All roller doors are presumed open.
 - The most noise-affected location will be the site directly to the east at 38 Winbourne Street. Noise levels are predicted on the car park access ramp, directly adjacent to the open roller doors.
 - A secondary assessment location is placed on the southern side of Winbourne Road at the boundary of 43 and 41 Winbourne Road.
 - No other receiver will be affected by the operation of the site. Solid masonry walls separate the adjacent sites to the north (758 Pittwater Road) and west (42 Winbourne Road). The adjoining tenancy within 40 Winbourne Road is separated by an internal partition wall, assumed masonry. An additional noise buffer is provided by the amenities.

5.3 SOURCE NOISE LEVELS

Spatial average internal noise levels were recorded at Kiss My Axe - Alexandria (19 McCauley Street, Alexandria) on Saturday 5 June 2021. A summary of the survey results is provided below.



Table 4. Axe throwing noise levels (LAeq, dB)			
Source	Noise level		Classification of noise
	L _{Aeq}	L _{Amax}	
Internal façade noise level	78	99	Approximately 35 persons and background music
Internal spatial average noise level	86	105	Approximately 35 persons and background music
Notes:	<ol style="list-style-type: none"> 1. Measurements were conducted with an NTi Audio XL2 sound level meter. 2. The sound level meter was field calibrated with a Larson Davis CAL200 precision acoustic calibrator before and after the survey. No system drift was observed 		

The Alexandria site is far narrower than the proposed site in Brookvale, meaning that the internal spatial average noise level will be somewhat higher than anticipated at Brookvale on account of the more condensed space. It is expected that the internal façade noise level at the open roller doors will be around **L_{Aeq} 15 minutes 82-83 dB**.

5.4 CALCULATED RECEIVER NOISE LEVELS

Receiver levels have been calculated/modelled to the adjacent industrial receiver location at 38 Winbourne Road and across the street at the boundary of 41/43 Winbourne Road, being the two (2) most affected receivers. The following noise levels are predicted:

- **L_{Aeq} 15 minutes 62 dB at 38 Winbourne Road**
- **L_{Aeq} 15 minutes 52 dB at 41/43 Winbourne Road**

Noise levels comply with the target level applied under the NPfI which is L_{Aeq} 15 minutes 68 dB.

5.5 RECOMMENDATIONS

Noise emission from the proposed axe throwing premises is predicted to meet the noise objectives of the NPfI, meaning that the development may be integrated into the local area without resulting in unacceptable noise amenity impacts for surrounding receptors.

Based on the information available at the time of completing this assessment, there are no development-specific noise control measures necessary.



6.0 ADDITIONAL COMMENTS

The plans show four (4) car spaces along the eastern site boundary. Koikas Acoustics has not been notified of the car spaces forming part of the application. It would appear that the car spaces are existing.

In any case, noise attributed to vehicles arriving/leaving the car spaces will be negligible in comparison to that of noise breakout from the operation of the premises. The impact of the car spaces does not warrant a detailed review of noise emission. The simplified calculation as shown below emphasises the negligible impact of the car parks:

- Sound Exposure Level (SEL) of one (1) car moving at low speed in a car park = 64 dB(A)
- SEL of four (4) cars arriving/departing in 15 minutes = 70 dB(A)
- **Leq of four (4) cars arriving/leaving in 15 minutes = 40 dB(A)**

-
- SEL of one (1) car engine starting in a car park = 65 dB(A)
 - SEL of four (4) car engines starting in 15 minutes = 71 dB(A)
 - **Leq of four (4) car engines starting in 15 minutes = 41 dB(A)**

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- SEL of one (1) car door open and close in a car park = 64 dB(A)
 - SEL of four (4) car doors open and close in 15 minutes = 70 dB(A)
 - **Leq of four (4) car doors open and close in 15 minutes = 40 dB(A)**

-
- **Total noise from the 4 car spaces = LAeq 15 minutes 45 dB**

Note: The above noise levels are all relevant to a measurement/assessment position at 3 metres from the source.

The venue space is not expected to be air-conditioned and can be ventilated through open doors. Therefore, mechanical plant noise is not expected to be an issue at this site.

7.0 CONCLUSION

Kiss My Axe proposes to operate a new axe-throwing facility out of an existing industrial warehouse at 40 Winbourne Road, Brookvale. This report assesses noise that results from the proposal in terms of the impact on neighbouring industrial sites.

The project noise trigger level (noise objectives) for industrial receivers is referenced from the NPfl.

The assessment finds that the axe throwing facility complies with the project noise requirements. No specific noise controls are necessary to further mitigate noise from the site.

In light of the above, Koikas Acoustics is satisfied that the proposed use will comply with the project noise emission objectives.



APPENDIX A

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APPENDIX A

