ACOUSTIC LOGIC CONSULTANCY
noise and vibration consultants
abn 11 068 954 343

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K-MART DISTRIBUTION CENTRE, EATERN CREEK

CONSTRUCTION - VIBRATION AND NOISE MANAGEMENT PLAN

Directors Matthew Palavidis | Victor Fattoretto | Matthew Carter | Matthew Shields

Sydney | Ph 02 8338 9888 | fax 02 8338 8399 | 9 Sarah Street Mascot NSW 2020
Melbourne | Ph 03 9614 3199 | fax 03 9614 3755 | Level 7, 31 Queen Street Melbourne VIC 3000
Canberra | Ph 02 6162 9797 | fax 02 6162 9711 | Unit 14/71 Leichhardt Street Kingston ACT 2604

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1. EXECUTIVE SUMMARY

A noise and vibration management plan has been carried out for the proposed construction activities to assess whether these activities would impact sensitive receivers around the site. The results of the assessment have been used to develop a construction noise and vibration management plan that will be used to manage impacts from these activities.

The Management Plan outlines the development of controls and safeguards that would be applied to all activity on the site by the construction contractor. The objective of these controls is to ensure that all work is carried out in a controlled and predictable manner that will minimise emissions and protect the amenity of the sensitive receivers surrounding the site.

Further reviews would be undertaken through the demolition and construction period, as required, in response to revised methods and equipment, as well as in response to the monitoring and evaluation of actual impacts. This management plan outlines the procedures that would be adopted by the contractor during the detailed demolition/ construction planning and execution phases.

2. INTRODUCTION

An assessment of noise and vibration of demolition/construction activities proposed for the K Mart Distribution Centre at Eastern Creek. The site is indicated in Figure 1.

3. PROJECT DESCRIPTION

The proposed site is located off Wallgrove Road and will be used as a distribution centre for K-Mart. The nearest noise receivers are as below:

- Noise receiver 1- Residential dwelling located immediately across Western Motor Way which is approximately 1100mm distance to the project site.
- Noise receiver 2- Residential dwelling located western to the project site at St Clair which is approximately 2400m distance to the project site.

Detailed site map and noise receiver locations refer to Figure 1 below.

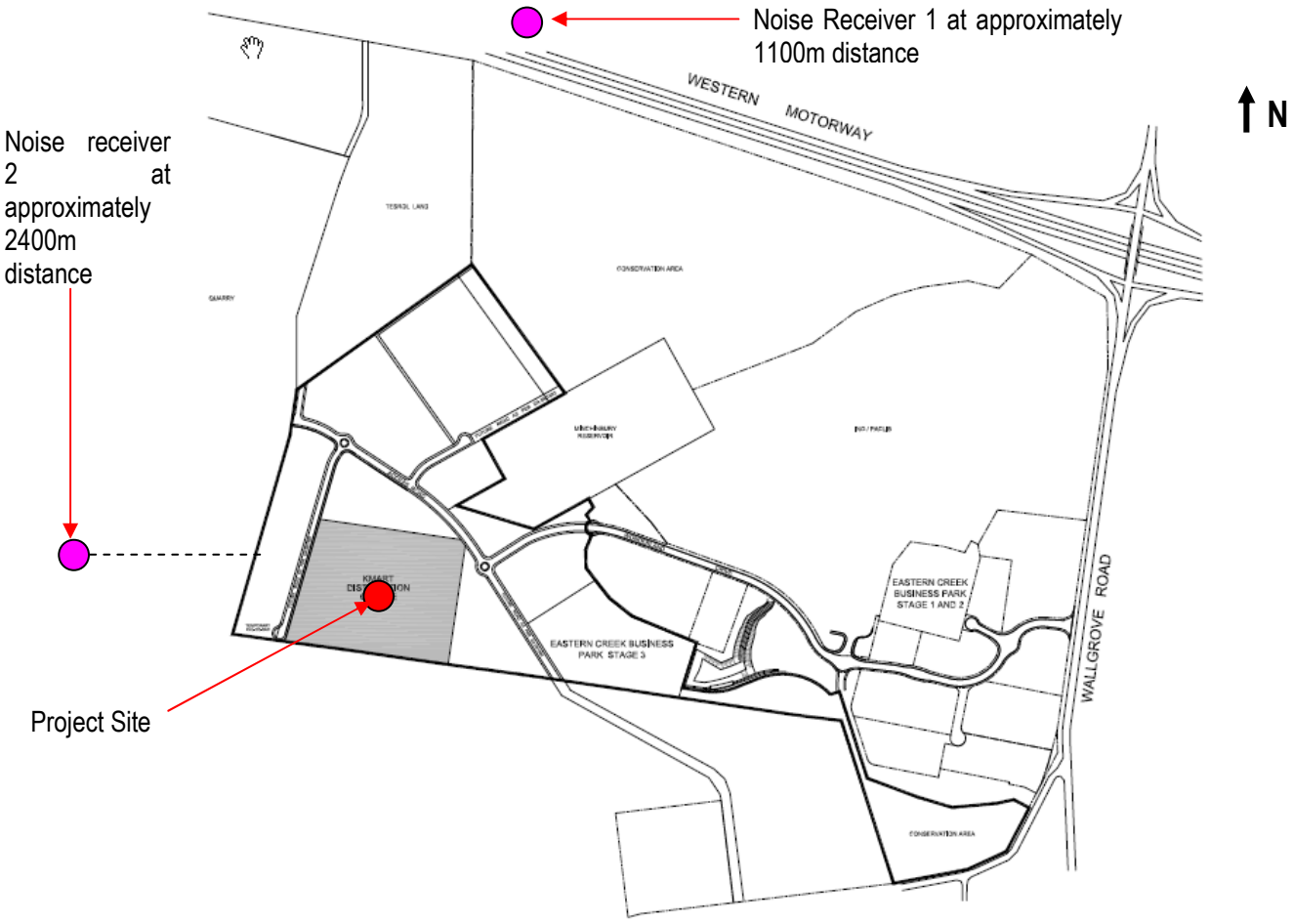

Figure 1 Site Map and Noise Receiver Locations

4. HOURS OF WORK

The proposed construction hours are day and evening:

- 7am 10pm Monday to Saturdays
- 8am to 10pm Sundays and public holidays.

5. NOISE AND VIBRATION OBJECTIVES

5.1 NOISE

The applicable guidelines and standards are:

- "NSW Draft Construction Noise guidelines" which nominates the following objectives for the proposed hours of construction:
  - Within Standard Working Hours – background + 10 dB(A).
  - Outside Standard Working Hours – background + 5 dB(A).
- Australian Standard 2436-1981 "Guide to Noise Control on Construction Maintenance and Demolition Site". The requirements stipulated in Section 3 of the standard will be followed.

Section 3 of AS 2436 states that care shall be taken in applying criteria that normally would be used to regulate noise emitted from industrial, commercial and residential premises to construction, particularly for those activities which are transitory and of short duration. For the control and regulation of noise from construction sites AS2436 nominates the following:

- That reasonable suitable noise criterion is established.
- That all practicable measures be taken on the building site to regulate noise emissions, including the siting of noisy static processes on parts of the site where they can be shielded, selecting less noisy processes, and if required regulating construction hours.
- The undertaking of noise monitoring where non-compliance occurs to assist in the management and control of noise emission from the building site.

Based on these criteria the following procedure will be used to assess noise emissions:

- Predict noise levels produced by typical construction activities at the sensitive receivers.
- If noise levels exceed "background 10 dB(A)" noise goal at sensitive receiver locations, investigate and implement all practical and cost effective techniques to limit noise emissions. For commercial receivers, a background + 10 dB(A) criterion has been adopted at all times given that the buildings are expected to predominantly unoccupied between 7am and 8am and it does not make sense to restrict activity at a time when it would produce minimal impact.
- If the noise goal is still exceeded after applying all practical engineering controls to limit noise emissions investigate management and other techniques to mitigate noise emissions.

5.2 VIBRATION

Department of Environment and Conservation NSW "Interim Construction Noise Guideline"(July 2009) will be used to assess human discomfort caused by vibration generated by demolition activities. Vibration Criteria for building damage will be based on the following:

- Highly sensitive structures – 2mm/s PPV
- Sensitive structures – 10mm/s PPV
- Other non-sensitive or modern structures – 20mm/s (vibration in these structures would most likely be limited by human comfort criteria)

6. NOISE AND VIBRATION ASSESSMENT

6.1 GENERAL

The assessment of noise and vibration emissions for the site has been based on DECCW construction noise and vibration guidelines.

The construction of the development will involve various stages of work including:

- Detailed site preparation
- Erection of the structure
- Internal fitout
- Landscaping

6.2 ASSESSMENT OF NOISE IMPACT

This section identifies the potential sources of noise for each stage and assesses the potential noise impact from each source.

The following typical noise sources were identified. Note that the bulk earthworks for the project site will be completed before works are commenced.

- **Detailed external works and site preparation**

  Bobcat – 108 dB(A)

- **Erection of the structure**

  Hand Tools – 110 dB(A) sound power level

  Concrete Pumps – 107 dB(A) sound power level

  Concrete Vibrator – 100 dB(A) sound power level

- **Internal Fitout**

  Hand Tools (internal use only) – 110 dB(A) sound power level

  Electric Hoist – 94 dB(A) sound power level

- **Landscaping**

Bobcat – 108 dB(A) sound power level

6.3 NOISE LEVEL PREDICTIONS

Noise levels from the sources listed (representing the loudest sources during each phase) were predicted at the nearest existing residences. The resultant noise levels were calculated taking into account distance, air absorption and barrier attenuation, where applicable. The predicted noise levels at the sensitive receivers are summarised below.

6.3.1 Nearest Residences Across M4

Noise levels from all construction activities will be less than 40 dB(A) which complies Backgound Noise + 5 dB(A) criteria and will therefore not adversely impact these properties.

6.4 VIBRATION ASSESSMENT

The site is separated from the nearest sensitive receiver be in excess of 1100m and because of this perceptible vibration is not expected to be generated at any sensitive receiver.

6.5 RECOMMENDED DEVELOPMENT CONTROLS

The analysis indicates that there is a low risk of any adverse impacts and no site specific recommendations are necessary other than following good practice.

6.6 EXCAVATION/CONSTRUCTION TRAFFIC

The traffic access to the site is envisaged to primarily occur from Wallgrove Rd. Heavy vehicle traffic will include rigid trucks. Heavy vehicle trips expected each day will vary and these will be distributed during the day without any peak hour period.

Given the existing number of vehicle and heavy vehicle movements on the existing road network, no adverse impacts are expected from the expected number of demolition vehicle movements.

7. ESTABLISHMENT OF DIRECT COMMUNICATION WITH AFFECTED PARTIES

In order for any construction noise management programme to work effectively, continual communication is required between all parties which may be potentially impacted upon, the builder and the regulatory authority. This establishes a dynamic response process which allows for the adjustment of control methods and criteria for the benefit of all parties.

The objective in undertaking a consultation processes is to:

- Inform and educate the groups about the project and the noise controls being implemented.
- Increase understanding of all acoustic issues related to the project and options available.
- Identify group concerns generated by the project, so that they can be addressed.
- Ensure that concerned individuals or groups are aware of particular issues and processes.

- To ensure that this process is effective, regular scheduled meetings will be required for a finite period, until all issues have been addressed and the evidence of successful implementation is embraced by all parties.

8. CONCLUSION

A noise and vibration assessment has been undertaken of the proposed construction activities to identify whether these activities would impact sensitive receivers around the site.

The analysis indicates that there is a low risk of any adverse impacts and no site specific recommendations are necessary other than following good practice.

Prepared by

ACOUSTIC LOGIC CONSULTANCY PTY LIMITED
George Wei

Senior Acoustic Engineer