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Attn: David Drew

**Concord Hospital Redevelopment - Proposed After Hours Works (Mobile Crane Installation) -
Construction Noise Advice**

1 INTRODUCTION

This letter has been prepared with respect to proposed outside of standard construction hours works (installation of one tower crane with a mobile crane).

In this letter we will:

- Identify noise emission criteria that are appropriate for any works conducted in the non-standard construction hours periods.
- Determine after hours construction noise emission goals based on the criteria and background noise levels at the site.
- Review of the proposed construction activities and assess whether they can comply with the noise emission criteria.

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2 CONSTRUCTION HOURS SOUGHT IN THE APPLICATION

Approval is sought for the following additional hours to be permitted on one weekend for the installation of the crane:

- 6.00am-6.00pm on Saturday.

See figure below for site survey and crane locations.

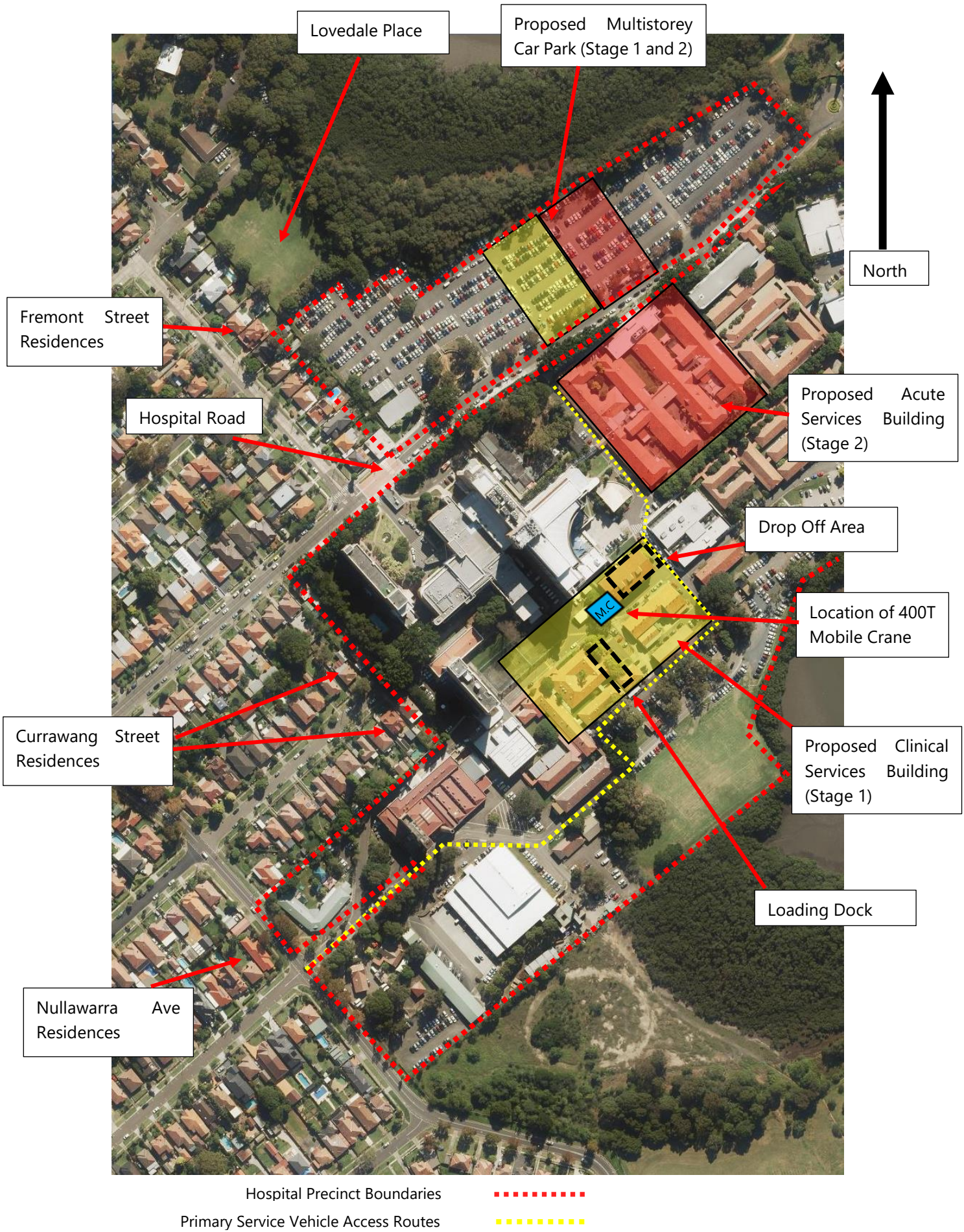


Figure 1: Site Survey

3 CONSTRUCTION NOISE CRITERIA

The EPA *Interim Construction Noise Guidelines* set noise emission goals for construction activities.

These goals cover two periods:

- Work conducted during “standard hours”, which adopt a “Background+10dB(A)” noise management level and then requires “reasonable and feasible” noise mitigation to be implemented in the event that this cannot be achieved.
- Work conducted outside of normal construction hours, which is subject to a much more stringent “Background +5dB(A)” noise emission goal.

The proposed times in question (6am-7am on Saturday, after 1pm on Saturday and all of Sunday) the works are considered to be outside of standard construction hours.

In the event some construction activities can achieve compliance with the “Background+5dB(A)” noise goal, it is reasonable those activities be permitted, given that it is consistent with the EPA after hours construction noise goals.

4 BACKGROUND NOISE LEVELS AND NOISE EMISSION GOALS

The document *Concord Repatriation General Hospital Redevelopment – 1 Hospital Road, Concord – Acoustic Report for SSD 9036 Rev 8* dated 13.12.2018 formed a part of the approved SSD package.

In that report, background noise levels were measured using a noise logger placed at the nearest residences (Currawang Street and Freemont Street/Hospital Road) in order to determine noise emission limits for the site.

On review of the noise logging conducted in the SSD report, daily noise logging graphs in Appendix B of the *Construction Noise and Vibration Management Plan*, the background noise levels during the Saturday afternoon and Sunday periods were determined.

Background noise levels and corresponding noise emission limits are as follows:

**Table 1 – Background Noise Level/After Hours Construction Noise Goals
Hospital Road/Freemont Street Residences**

Time of Day	Background Noise Level dB(A)L₉₀	Noise Emission Goal (BG+5dB(A)L_{eq(15min)})
Saturday 6am-7am	41	46
Saturday 8am-9am, 1pm-6pm	45	50
Sunday 7am-6pm	45	50

**Table 2 – Background Noise Level/After Hours Construction Noise Goals
Currawang Street Residences**

Time of Day	Background Noise Level dB(A)_{L90}	Noise Emission Goal (BG+5dB(A)_{L_{eq}(15min)})
Saturday 6am-7am	37	42
Saturday 8am-9am, 1pm-6pm	46	51
Sunday 7am-6pm	46	51

5 CONSTRUCTION NOISE ASSESSMENT

The works the subject of this assessment are for the installation of a tower crane, at the location shown in section 2.

The proposed equipment items will consist of:

- Mobile Crane.
- Powered hand tools.

Typical sound power levels of these equipment items is as follows.

In addition, many equipment items are used in an on-off or stop/start manner. The extent of use in any typical 15 minute period is also presented.

Table 3 – Construction Equipment Items and Sound Power Levels

Equipment Item	Sound Power Level	Level of Usage
Mobile Crane	100 (idle) 108 (lifting/under power)	Intermittent - lifting for 25% of 15 minute period.
Hand Tools	100	Multiple items each used intermittently, making the usage effectively continuous.

Prediction of noise levels at the nearest residences and assessment with reference to the EPA Outside of Standard Hours construction criteria is presented below. With respect to the predicted noise emissions, we note:

The work area is located centrally within the Concord Hospital Site. The mobile crane will be located at ground level and as such, some noise screening will be provided by the hospital buildings located between the work area and the nearest residences (Currawang Street/Hospital Road residences).

Table 4 – After-Hours Construction Noise Assessment (Hospital Road Residences)

Equipment Item	Predicted Noise Level dB(A)$L_{eq}(15min)$	Target Noise Level (BG+5dB(A)$L_{eq}(15min)$)	Comment
Mobile Crane	46dB(A)	46dB(A) – (before 7am) 50dB(A) – (after 7am).	Complies
Hand tools – external areas	<42dB(A)		Complies

Table 5 – After-Hours Construction Noise Assessment (Currawang Street Residences)

Equipment Item	Predicted Noise Level dB(A)$L_{eq}(15min)$	Target Noise Level (BG+5dB(A)$L_{eq}(15min)$)	Comment
Mobile Crane	45dB(A)	42dB(A) – (before 7am) 51dB(A) – (after 7am).	Exceeds
Hand tools – external areas	<42dB(A)		Complies

Based on the above, provided that the works are limited to those identified at the start of section 5, the proposed works are generally capable of complying with EPA guidelines for construction work conducted outside of standard hours.

We note a minor exceedance of the BG+5 noise goal is predicted at the Currawang Street residence if the mobile crane is used prior to 7am.

We recommend that use of the mobile crane not be commenced prior to 7am unless written notification is provided to the residences at the eastern end of Currawang Street.

6 CONCLUSION

Approval is sought for the following additional hours to be permitted on one weekend for the installation of the crane:

- 6.00am-6.00pm on Saturday.

The proposed works are limited to the installation of a tower crane.

The works will be limited to one weekend.

The justification of the proposed extended construction hours is recommended on the basis that:

- The works are of limited duration (one weekend) and
- The works are anticipated to generate noise levels generally compliant with EPA guidelines for works conducted outside of standard construction hours.
- The notification of the Currawang Street residences is provided as recommended in section 5.

We trust this information is satisfactory. Please contact us should you have any further queries.

Yours faithfully,



Acoustic Logic Consultancy Pty Ltd
Alex Salazar