

20190234.1/1012A/R1/TT

10/12/2019

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Concord Hospital Redevelopment Stage 1 - After Hours Works - Concrete Pour for Bunker

1 INTRODUCTION

This letter has been prepared with respect to proposed outside of standard construction hours works (concrete pour for Basement 2 radiation bunker).

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 one day for works to commence at 5am and extend until 8pm. This extended works period is to enable a concrete pour of the Basement 2 bunkers to be completed.

Equipment to be used will consist of a concrete pump with stationary boom and concrete vibrators.

The nearest residences to the site are located on Hospital Road (to the north) and Currawang Street (to the west).

We note that the nearest residences are approximately 140m from the work site (Currawang Street residences). We also note that there are existing hospital buildings located between the work site and the nearest residences.

See figure below for site survey and equipment locations.

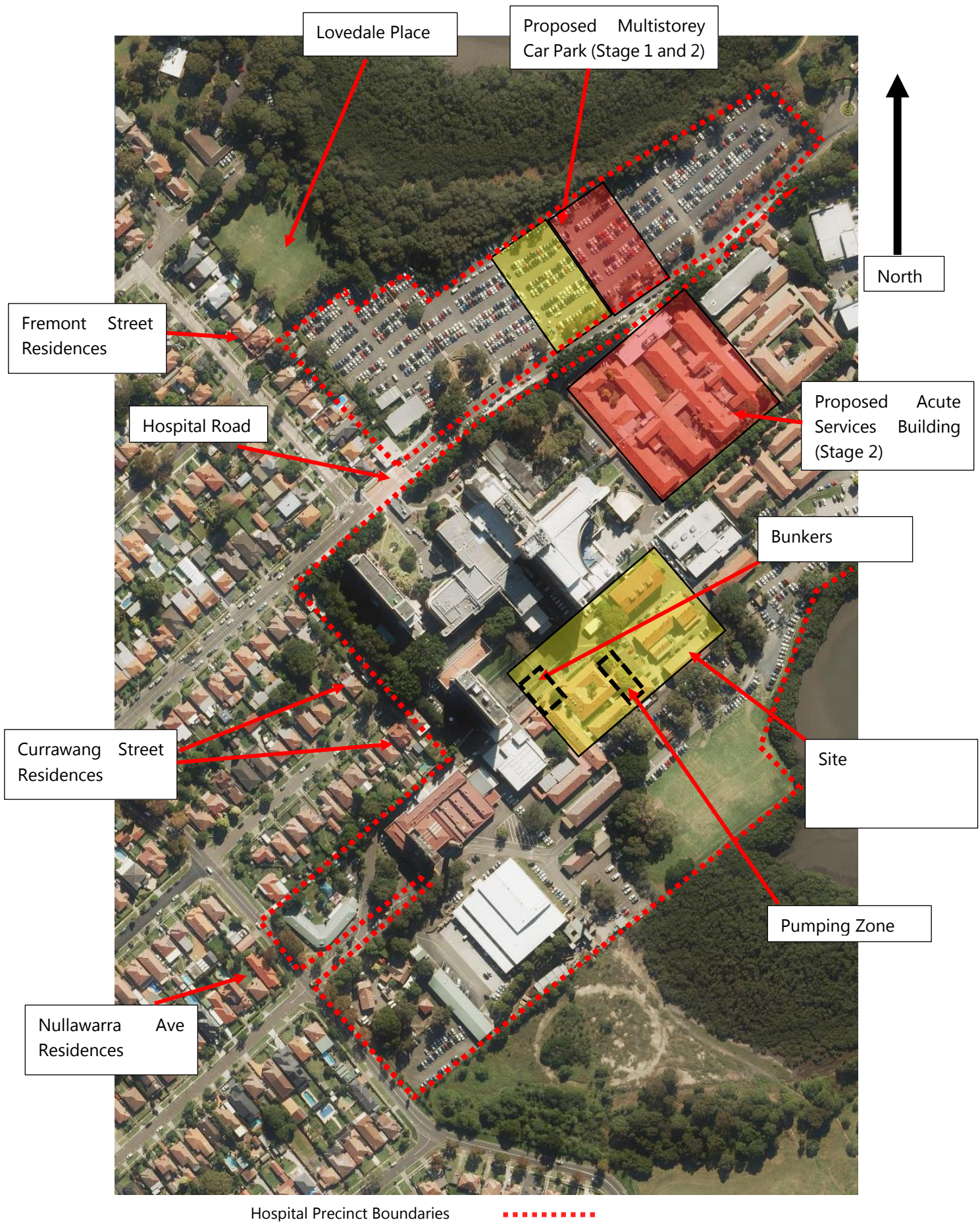


Figure 1: Site Survey

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 (5am-7am, 5pm-8pm on a weekday) 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)L ₉₀	Noise Emission Goal (BG + 5dB(A)L _{eq(15min)})
5am-7am	40	45
5pm-8pm	43	48

**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)})
5am-7am	44	49
5pm-8pm	45	50

5 CONSTRUCTION NOISE ASSESSMENT

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

The proposed equipment items will consist of:

- Concrete Pump with Boom
- Vibrators

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
Pump with Boom	105	Continuous Use
Concrete Vibrator	102	Continuous Use

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 are 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)_{Leq(15min)}	Target Noise Level (BG + 5dB(A)_{Leq(15min)})	Comment
Pump with Boom	42dB(A)	45dB(A) – (5am- 7am) 48dB(A) – (5pm- 8pm).	Complies
Concrete Vibrator	<40dB(A)		Complies

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

Equipment Item	Predicted Noise Level dB(A)_{Leq(15min)}	Target Noise Level (BG + 5dB(A)_{Leq(15min)})	Comment
Pump with Boom	44dB(A)	49dB(A) – (5am- 7am) 50dB(A) – (5pm- 8pm)	Complies
Concrete Vibrator	47dB(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.

6 CONCLUSION

Approval is sought for one day for works to commence at 5am and extend until 8pm. This extended works period is to enable a concrete pour of the Basement 2 bunkers to be completed.

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

- The works are of limited (one day) duration and
- The works are anticipated to generate noise levels compliant with EPA guidelines for works conducted outside of standard construction hours.

Please contact us should you have any further queries.

Yours faithfully,



Acoustic Logic Consultancy Pty Ltd
Thomas Taylor