Ground floor, 20 Chandos Street
St Leonards NSW 2065
PO Box 21
St Leonards NSW 1590

T 02 9493 9500
E info@emmconsulting.com.au

www.emmconsulting.com.au

5 August 2021

Arjuna Thiru Moorthy
Project Director
Health Infrastructure
1 Reserve Road
St Leonards, NSW 2065

Re: Griffith Base Hospital Redevelopment - Addendum to noise and vibration impact assessment

Dear Arjuna,

1 Introduction

This letter has been prepared to address acoustically related items provided in the Department of Planning, Industry and Environment (DPIE) response to submissions review dated 26 July 2021 issued for the Griffith Base Hospital Redevelopment. DPIE have raised the following query in the fourth bullet point of their review:

> Provide the additional Acoustic Impact Assessment prepared by EMM in relation to logistics vehicle movements and activities associated with the Non-Clinical Services Building.

We understand the additional acoustic impact assessment relates to the review prepared by EMM and Health Infrastructure in response to the key issues identified in the DPIE response to submissions letter dated 4 June 2021.

Additional information to support the assessment of noise from logistics vehicle movements and activities associated with the non-clinical services (NCS) building is provided herein. This document makes reference to the EMM 2021, *Griffith Base Hospital Redevelopment - Noise and vibration impact assessment* prepared for Health Infrastructure (HI) which was submitted with the Stage Significant Development Application (SSDA).

2 Noise from logistics vehicles

The proposed NCS building is located in the north corner of the development, adjacent St Vincent's Private Hospital and across Warrambool Street from St Patrick's Catholic Primary School.

The majority of service vehicles will enter the development via the new driveway off Warrambool Street and use the loading docks on the southern side of the NCS. EMM has been advised by HI that the average weekly logistics associated with the NCS will be as follows:

- 54 light delivery vehicles per week;
- 6 trucks per week (1 waste, 1 recycling, 4 large deliveries [e.g. linen, food, etc.]); and
- no routine deliveries outside 7am to 6pm.

The project operational noise objectives are provided in Table 4.10 of the EMM (2021) report. The noise criteria applicable to the project is assessed over a 15-minute period consistent with the requirements of the NSW 2017 *Noise Policy for Industry* by the Environment Protection Authority (EPA). The assessment of noise from delivery vehicles has been based on the parameters provided in Table 2.1.

Table 2.1 Service vehicle assessment

Vehicle	Sound power level, dB L_{Aeq}	Movements per week	Assumed movements in a worst case 15-minute period.	Speed, km/h
Heavy rigid vehicle	103	6	1	10
Delivery vehicles[1]	84	54	2	10

Notes: 1. Based on a commercial van

2. Conservative assumption based on approximately 10% of the weekly number of delivery vehicles arriving in a 1-hour period.

The predicted noise level at the nearest most affected noise sensitive receiver being St Patrick's Catholic Primary School is 36dB $L_{Aeq\ 15min}$. The external project noise objective at this school location is 48dB $L_{Aeq\ 15min.}$ Predicted noise levels from vehicle movements are expected to be in the order of 12dB below the project noise objective.

The predicted noise level at the most affected residential receiver located at 36 Animoo Avenue, Griffith to the north is less than 21dB $L_{Aeq\ 15min.}$ The external project noise objective at this residential location in noise catchment area one (NCA1) is 46dB $L_{Aeq\ 15min}$ for the daytime period when the loading dock will be operational. Predicted noise levels from onsite vehicle movements are expected to be in the order of 25dB below the project noise objective.

The predicted noise level due to service vehicles utilising the NCS building has been addressed above. The predicted noise level due to vehicle movements entering or exiting the loading dock indicates compliance with the project noise objectives provided in the EMM (2021) report.

3 Noise from the NCS building

Noise generated by the NCS building itself will generally be associated with the dirty workshop adjoining Warrambool Street.

Activities within the workshop are expected to relate to minor repairs using hand-held manual and electrical tools which would only generate minor to moderate degrees of noise. The workshop includes an acoustically absorptive ceiling which has been factored into the calculation of noise within the workshop. Noise breakout has been based on sheet metal roofing.

The assessment of noise from the dirty workshop has been based on the use of an angle grinder which will represent the typical worst-case appliance to be utilised within this space. It has been conservatively assumed that the angle grinder will be utilised for a continuous 15-minute period. The assumptions utilised for the prediction of noise from the dirty workshop are summarised in Table 3.1.

Table 3.1 NCS operational noise

Appliance	Utilisation	Sound power level, dB L_{Aeq}
Angle grinder on steel within workshop	Working continuously for the full 15min assessment period	109[1]

Note: 1. Adopted from Department of Environment, Food and Rural Affairs (DEFRA) 2005, *Update of Noise Database for Prediction of Noise on Construction and Open Sites*

The predicted noise level at the nearest most affected noise sensitive receiver being St Patrick's Catholic Primary School is 31dB $L_{Aeq\ 15min}$. The external project noise objective at this school location is 48dB $L_{Aeq\ 15min.}$ Predicted noise levels from the operation of the workshop is expected to be in the order of 17dB below the project night time noise objective.

The predicted noise level at the most affected residential receiver located at 36 Animoo Avenue, Griffith to the north is less than 24dB $L_{Aeq\ 15min.}$ Whilst it is expected that the workshop would be used during the daytime period (particularly for noisy works such as angle griding), it could reasonably be used during all periods of the day, evening or night. As such, predicted noise levels for residential receivers have been assessed against the night-time project noise objective of 41dB $L_{Aeq\ 15min}$. The predicted noise level from worst case operations within the workshop is expected to be in the order of 17dB below the night-time project noise objective.

Noise levels associated with angle griding will also approximate the worst-case noise levels associated with the potential for sleep disturbance which is to be addressed for the night-time period in accordance with the NPfI. The project noise objectives for sleep disturbance events are provided in Table 4.12 of the EMM (2021) report which are 41dB $L_{Aeq,\ 15min}$ and 52dB L_{Amax}.

The predicted noise level at the nearest residential assessment location is 24dB $L_{Aeq\ 15min}$ which will comply with the 41dB $L_{Aeq\ 15min}$ sleep disturbance criterion. It is expected that the $L_{Aeq\ 15min}$ and L_{Amax} for angle grinding will roughly approximate each other within +/- 5dB. As such, the L_{Amax} level is not expected to exceed 29dB L_{Amax} at the most affected residential assessment location, complying with the 52dB L_{Amax} requirement.

Expected operational noise from the use of the NCS building has been addressed. The predicted noise level due to worst case operations within the workshop indicates compliance with the project noise objectives provided in the EMM (2021) report.

We trust the above meets your requirements and please don't hesitate to contact the undersigned with regard to any questions or queries.

Yours sincerely

James Small
Associate
jsmall@emmconsulting.com.au

Review: NI