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20181654.2/2307A/R1/TT

11/07/2019

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Attn: Kevin Pan

Nepean Hospital Stage 1 - S4.55 Acoustic Advice

We have been asked to comment on acoustic implications associated with proposed design changes at the Nepean Hospital Redevelopment Project (Stage 1).

Key changes with respect to acoustics are:

- Alterations of helipad slab shape (going from a rectangular design to a circular one).
- Relocation of all roof top plant (other than cooling towers) from roof level into the Level 4 plant room.

Helipad.

Noise from the operation of the helipad was assessed in our SSDA stage acoustic report (A*coustic Assessment*, ref 20170106.5/1208A/R9/MF dated 15/11/2018).

There are two scenarios to consider:

- Helicopter on helipad and
- Helicopter in flight.

When a helicopter is in flight:

- In the *Acoustic Assessment*, the maximum noise levels at nearby residences associated with helicopter movements were predicted. Those levels were identified as occurring during the helicopter *flyover* (as opposed to when the helicopter is on the helipad).

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- Any redesign of the parapet will not change the predicted noise level during the flyover (which were predicted to be 86dB(A)L_{max} at a Somerset Street residence and 90dB(A)L_{max} at a Derby Street residence).

When a helicopter is on the helipad:

- The noise levels generated by the helipad *when on the helipad* were also predicted. In predicting noise from the helipad to nearby residence, a minor amount of noise screening from the helipad itself was taken into account (given the nearby residences are lower than the helipad, and the helipad itself acts as a noise screen).

- Originally, when the helicopter is on the helipad, noise emissions were predicted to be approximately 79dB(A) at a Somerset Street residence and 75dB(A) at a Derby Street residence.

- In the event that helipad slab shape is changed as proposed, there will be a very minor change in noise propagation to the nearby residences (as the helipad slab itself forms a noise barrier).

- The difference in noise emission as a result of the changed helipad geometry will be less than 1dB(A), and not a perceptible change.

- Given this, the change in noise impact on residents will be negligible.

In addition, building shell treatments to the hospital itself were designed based when the helicopter is in flight (no parapet noise screening) and as such the changed design of the parapet does not necessitate change to façade design of the hospital.

Level 4 Plant Room Redesign.

The proposed Level 4 plant room redesign will not result in any adverse noise emission outcome:

- The noise emission limits for the site remain the same (items he proposed plant room design does not change (as per condition B30).

- Noise emitted from the Level 4 plant room (eastern façade, facing the Somerset Street residences) was identified in the *Acoustic Assessment*, and the need for blanking off louvred areas (other than those areas with ducting connected directly behind) was proposed.

- Chillers and generators will not be located on the eastern façade of the plant room. Detailed acoustic treatment of these relocated plant items will still need to be resolved, however compliance with the noise limits imposed by condition B30 will still be achievable.

- Given this, there can be no adverse noise impact compared to the currently approved hospital design.

Please contact us should you have any further queries.

Yours faithfully,

Acoustic Logic Consultancy Pty Ltd
Thomas Taylor