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ARUP

Dear David

**Hunter Medical Research Institute Project
Response to comments on Acoustic DA submission**

As requested, we are providing this letter to consolidate DA Submission acoustic advice given in

- Arup letter dated 26 November 2009 "Response to comments on Acoustic DA submission"; and
- Kym Burgemeister email dated 4 December 2009 "RE: Newcastle City Council Comments"

The advice from these documents is provided below.

Response to comments on Acoustic DA submission

NSW Dept. of Planning in their letter dated 24/11/09 has requested clarification regarding noise impacts on the nearby hospital wards and operating theatres, particularly during construction.

The Development Application Acoustics Report (*Hunter Medical Research Institute Acoustics DA Report*, Arup Acoustics Report AAc/206014/R02, 18/08/09) has broadly addressed operational noise emission from the proposed development, and noise and vibration during the construction period.

As identified in that report, the nearest 'residential' receivers are located a considerable distance from the proposed building, and therefore not subject to significant noise or vibration impacts during construction or operation. However, there are existing short-term residential buildings (the 'Kookaburra Cottages') and the nearby John Hunter Hospital that are within the existing John Hunter Hospital precinct, and are much closer to the proposed development.

In regards to operational noise from the Hunter Medical Research Institute building, as noted in the *Acoustics DA Report*, an external noise breakout limit of 65 dB(A) immediately external to the plantrooms (ie 1.5 m from air intakes and exhausts) has been adopted to ensure reasonable amenity for the HMRI building itself. This also acts to limit noise at the Kookaburra Cottages and hospital buildings, where the noise levels due to the HMRI plant will be substantially lower. The predicted noise levels at the Kookaburra Cottages are much lower (between 40-45 dB(A)) external to the Cottages. Noise levels at the John Hunter Hospital due to the HMRI plant and equipment are expected to be lower than the current level of exposure due to existing plant and equipment servicing the John Hunter Hospital itself. The additional noise impact of the HMRI plant is therefore negligible.

In regards to Construction Noise, the *Acoustics DA Report* notes that due to the close proximity of the Kookaburra Cottages and existing hospital to the development, construction noise is expected to be audible

../2

and possibly adversely impact their uses on occasion. Therefore, the approach to controlling potential construction noise impacts that is recommended in the *Acoustics DA Report* is one of ongoing consultation and time-tabling with the existing users, and adoption of 'lower-noise' construction techniques, where practicable.

In regards to Construction Vibration, the *Acoustics DA Report* notes that currently proposed construction processes are not expected to result in significant perceptible vibration within the adjacent hospital buildings, but could possibly impact on particularly sensitive uses, for example high resolution microscopy or NMR. It is difficult to accurately predict construction vibration levels in advance, since the source level is highly dependent on the particular process, individual equipment and local lithology. Similarly, impacts are difficult to accurately assess, since the receiver sensitivity is highly dependent on the equipment type, proximity to the source, location within the existing building (ie near structural columns, slab thickness) etc. Again, the approach to controlling potential construction vibration impacts that is recommended in the *Acoustics DA Report* is one of ongoing consultation and appropriate timetabling with the existing users, and adoption of 'lower-impact' construction techniques, where practicable.

Newcastle City Council Comments

Noise: There are insufficient details available at this time to allow a detailed quantitative assessment of construction noise impacts. However, a requirement for the construction contractor to undertake a detailed quantitative construction noise assessment in accordance with the DECC's guidance, and prepare a Construction Noise and Vibration Management Plan (CNVMP) as part of their wider Environmental Management Plan (EMP) will be included in the contract documentation.

Vibration: The preliminary vibration assessment has shown that it is unlikely that construction vibration levels will be in excess of the limits recommended in the DECC's Assessing Vibration, a technical guideline document due to the likely construction processes and proximity of the development to adjacent buildings. Therefore a detailed assessment is likely to be unwarranted. However, a requirement for the construction contractor to prepare a Construction Noise and Vibration Management Plan (CNVMP) as part of their wider Environmental Management Plan (EMP) will be included in the contract documentation.

We trust that this is helpful. Please contact us if you require any further information.

Yours sincerely



Kym Burgemeister
Senior Associate