



28 November 2012

Metropolitan and Regional Project North
Department of Planning and Infrastructure
22-33 Bridge Street Sydney NSW 2000
Australia

Attention: Ben Eveleigh

Dubbo Base Hospital – EPA Additional Information. Acoustics

Dear Ben,

I represent the sound and vibration business section for Norman Disney and Young. Recently we prepared an REF and SSD DA acoustic assessment report for the Dubbo Base Hospital Redevelopment. The REF has since been reviewed by the EPA. The EPA has issued an assessment of our REF report and has requested additional information as per document DOC12/47285.

Following our discussions yesterday (27.11.2012) with Mark Latal from the EPA noise division, please find below excerpts from Attachment B of EPA assessment document which details the additional information required by the EPA. Directly underneath each excerpt we provide our response and additional information as required.

The SSD DA report applied the same methodology as the REF so the responses below would apply equally to the SSD DA as for the REF. We also attach our refined acoustic assessment reports for the REF and SSD DA as a result of the EPAs comments and our associated responses.

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AUCKLAND
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LONDON
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DUBAI

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ATTACHMENT B

Assessment of the Proposal and Request for Additional Information

NOISE

The EPA has reviewed the '*Dubbo Base Hospital Redevelopment - Acoustic Assessment*' (AA) prepared by Norman Disney & Young dated 11 July 2012 (Revision 3.0). This report forms part of the Review of Environmental Factors (REF) for the project prepared by JBA Urban Planning Consultants dated July 2012 (Ref. 12151).

In summary, the EPA considers that the AA and REF are not adequate for the reasons outlined below:

- Noise monitoring was carried out at only one location, shown in Figure 3-1 of the AA and on the hospital site. The resulting unattended noise monitoring results presented in Table 4-1 and Appendix A of the AA may be influenced by existing noise from the hospital operations. No operator-attended noise monitoring results are provided to gauge the existing level of noise from the subject site, any other existing industrial noise, and any other extraneous noise. The NSW Industrial Noise Policy Application Note titled 'Noise impact assessment for the modification of existing industrial premises' clearly states that noise from the existing premises should be excluded when quantifying background and existing industrial noise levels.

Our consultant was on and around the site for a period of 24 hours. He selected a location that was not influenced by any mechanical plant or other continuous existing hospital noise sources. Any mechanical plant or noise from the adjacent hospital buildings was not audible during the day, evening or night-time. Therefore, NDY are of the opinion that the noise logging results adequately excludes any existing industrial noise levels.

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- Ordinarily, background noise levels would be measured in the vicinity of the surrounding sensitive receivers (eg. residences along Leonard Street and Morgan Street, etc.) rather than within the subject site. The EPA considers that the results from the noise logger location may not be adequately representative of these two (possibly different) noise environments.
 - The EPA considers that additional monitoring should be carried out and presented to accurately quantify the existing noise environment at the sensitive receivers, excluding existing noise from the subject development, to determine appropriate project specific noise levels for the assessment.

The nursing home to the north of the logging location is the nearest noise sensitive receiver, so in this non-typical development it is practical to place the noise logging equipment on the subject site. In addition the NSW INP requires that a 'representative' background noise level for the day evening and night is obtained from the long-term noise logging. For this particular site we are of the opinion that the selected logging location is 'representative' of the background noise level of the residences adjacent to the site along Leonard and Morgan Street. The following conditions onsite were noted which precluded noise logging at the residences along Leonard and Morgan Street. Figure 1 below also illustrates these points graphically for ease of reference.

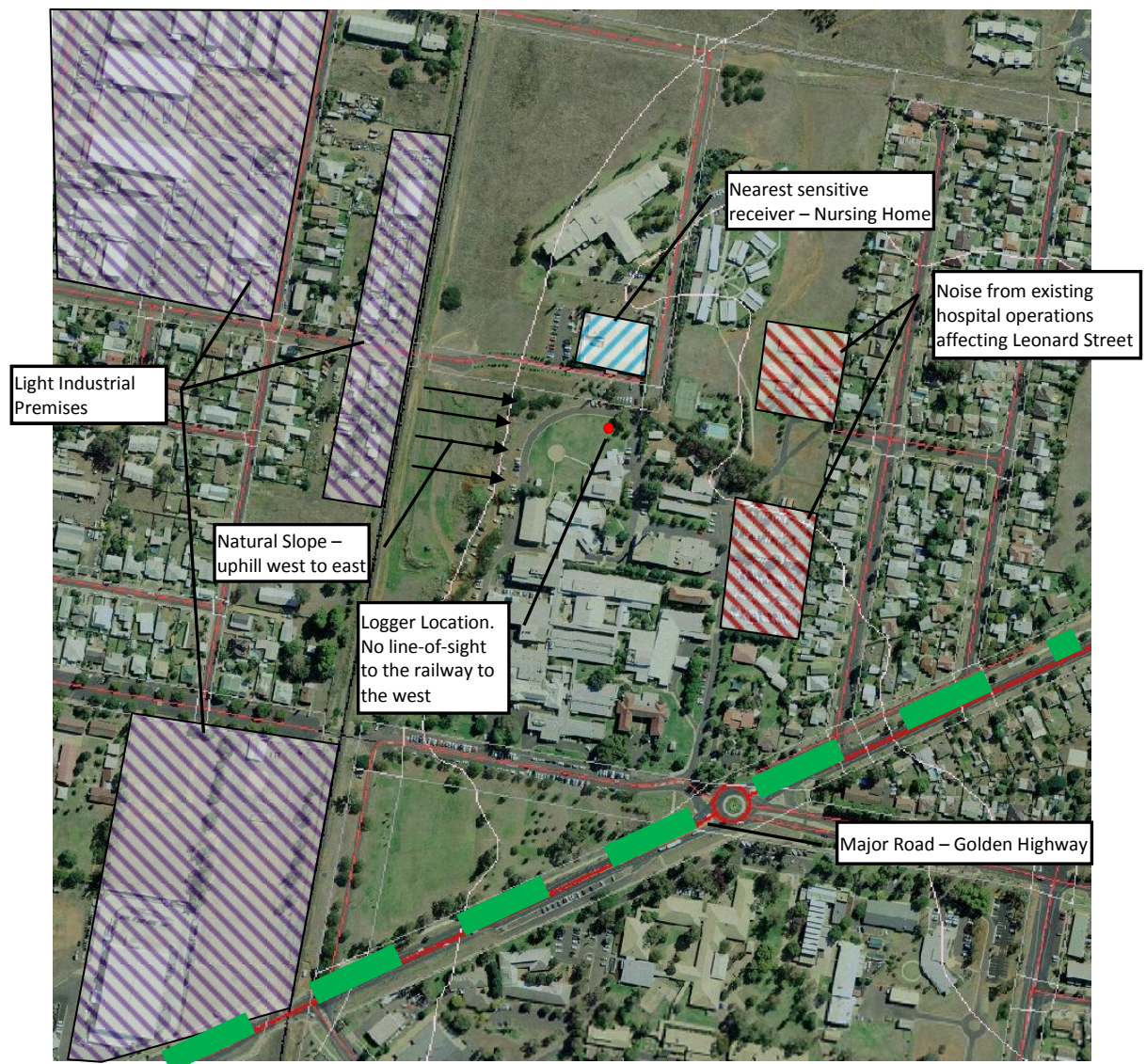


- The Golden Highway to the south of the site is a major road that will influence the background noise levels along Leonard Street with those at the southern end of the street having a higher background noise level than those at the north. Therefore, noise logging to the south of Leonard Street would record high background noise levels and subsequently provide higher environmental criteria.
- Towards the northern end of Leonard Street the background noise levels are influenced by the operation of the existing car park and mechanical plant from the hospital buildings. Therefore, noise logging in this area would be unduly influenced by existing industrial noise.
- Light industrial premises are situated just west of the railway track that runs down the western boundary of the hospital site. Further light industrial premises were also noted to the north and south of Morgan Street. Therefore, the noise logging at residences along Morgan Street would be unduly influenced by existing industrial noise.
- The selected location for noise logging is situated at the top of a natural slope. Therefore, the noise logger does not have line-of-sight to the railway tracks and light industrial premises to the west of the site. Therefore, this location was not unduly influenced by existing industrial or extraneous noise (railway noise).
- The selected noise logger location is well shielded from the extraneous noise (road noise) from the Golden Highway due to the hospital buildings to the south.

For these reasons we are of the opinion that the selected noise logging location was appropriate for this site. Given the variability of the extraneous noise sources (railway and road) affecting the residential receivers we consider the selected logger location conservative, and as a result the environmental noise criteria derived for the site are also conservative. We believe given the considerations of the existing noise environment at the Dubbo Hospital site that no further noise logging is necessary.



Figure 1. Noise Logging – Environmental Conditions and Considerations.





The EPA would like to provide the following additional minor comments outlined below:

- The EPA notes that there is an existing child minding centre and doctor's accommodation on the site, as shown in Figure 3-2 of the AA. The EPA would typically not consider noise and vibration impacts from demolition, construction and operation to sensitive receivers such as these that are associated with a development. In this case, the EPA assumes that the proponent has considered these potential impacts and has taken adequate and appropriate measures to address them.

As per Section 7.5 of our both of REF and SDD DA report the noise management levels were set at 45 dB LAeq internally for these hospital buildings. Based on typical facade attenuations of approximately 20 dB we set the external noise management level at 65 dB LAeq for hospital buildings. Assessment was undertaken to the doctor's accommodation and child care centre. Noise levels at the accommodation would be similar to that listed as mammography in our report. The report has been amended to make this assessment clearer so appropriate management measures are extended to the accommodation and child care building.

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- The NSW Road Noise Policy should be included in Section 2.3 of the AA as a reference.

Noted. The reports have been updated with this information.

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- Section 5.5.1 of the AA states that the development areas do not require a rail noise and vibration assessment due to significant offset distances. The Mental Health Unit site marked in Figure 3-1 is not discussed in this context, and appears close enough to the rail line to require assessment. This should be addressed in the AA.

The mental health building to the west of the site is currently under construction and not part of this REF assessment.

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- Section 6.3 of the AA presents a noise wall design to mitigate noise impacts from the revised car park arrangement. It appears to the EPA that the noise wall design may not sufficiently shield residences on the northern part of Leonard Street. An additional length of noise wall extending west from the northern end of the designed wall, for the width of the car park, could assist in this regard, if required. Alternatively, the AA should explicitly show that all residences to the east of the development (including the full length of Leonard Street) are adequately protected by the noise wall shown in the AA.

An existing fence of approximately 1.5 m currently runs along the entire eastern boundary. The recommended noise wall was modelled in conjunction with the existing fence. The recommended noise wall controls noise emission to those residences directly adjacent to the carpark. The existing fence controls noise to those residences to the north and south of the carpark. For this site, therefore, the noise wall does not need to be extended as suggested.

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- The noise management levels (NMLs) for residences in Table 7-2 of the AA should be revised, if necessary, to account for the results of any additional noise monitoring.

We believe the background noise levels from which the NML's are derived are representative and conservative for this area. Therefore, the NML's used in this assessment are appropriate.



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- The NML for offices in Table 7-3 of the AA should be 70 dBA.

Noted. The reports have been amended. This does not affect the outcome of any of the impact assessments.

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- Table 9-1 of the AA lists the use of a 815 [vibratory?] compactor during construction works, however no sound power levels are shown for this item in Table 9-2, and no safe working distances with respect to vibration are shown in Section 10.2 of the AA.

These units are not vibratory in nature. They compact the soil with specially designed tamping wheels with pads that compress the soil as the vehicle drives over the surface. These machines produce a similar noise and vibration level as that of a dozer or excavator. Table 10-1 will be updated to include this item. The noise level predictions will not be affected.

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- The AA predicts significant exceedances of the NMLs for some activities, with some receivers being highly noise affected during the earthworks stage. Noise control measures for highly affected receivers in Section 9.4 of the AA should include the provision of respite periods if appropriate, as well as individual consultation with affected parties.

The reports are not intended as a noise management plan report, only an impact assessment. However, this point is noted and the reports have been amended to include these measures to assist the development of a future noise management plan.

We trust this information is of assistance. If you require further information please do not hesitate to contact me.

Best regards,

NORMAN DISNEY & YOUNG

Tom Cockings
Manager NDY Sound