RENZO TONIN & ASSOCIATES
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TE802-01F02 (rev 2) Acoustic Report.doc

9 March 2010

Ms Helena Miller

MG Planning

11/340 Darling Street

Balmain NSW 2041

Dear Madam

RE: NATIONAL CENTRE FOR INDIGENOUS EXCELLENCE – SECTION 75W FOR MIDNIGHT BASKETBALL

MG Planning are currently preparing a Section 75W application to modify the consent for the National Centre for Indigenous Excellence (NCIE), Redfern. The modification relates to extending the hours of operation on Friday nights (until 12am) for the Multi Purpose Building on up to 16 Friday nights (only) throughout the year. Renzo Tonin & Associates was engaged to assess the potential acoustic impact of the proposal.

The extension in operating hours relates to a programme that is being reintroduced into the Redfern area called Midnight Basketball™. The programme involves between 50-70 local youths competing in a basketball tournament and undertaking workshops within the Multi Purpose Building. The programme will run for a maximum of 16 Friday nights throughout the year. In addition to the participants, there will also be approximately 15 adults which will help facilitate the programme.

In addition to use of the internal basketball court, participants will use the courtyard as a walkway.

1 Noise Criteria

For noise criteria, we refer to the acoustic assessment report prepared for the original site development application which was prepared by Renzo Tonin & Associates [ref: TD432-01F02 (rev3) Acoustic Assessment Report].

The most relevant assessment location from the original acoustic report is Location A4, being as follows;

25 1982-2007 ACOUSTIC ENGINEERING EXCELLENCE

- Location A4 169 George Street

  Two storey terraces directly adjacent the multi-purpose hall, on the opposite side of George Street.

As operations will be extended from 10pm to 12:00am (with people leaving up to 12:30am) the long-term noise measurements were analysed to establish the relevant background noise levels (between 10pm and 1am) for assessment against both the intrusiveness and sleep disturbance noise criteria. The operational noise criteria for location A4 is set out in Table 1 below.

Table 1 – Applicable Noise Criteria at Location A4

Background L_{90} Noise Level 10pm - 12:30am	Intrusiveness Criteria $L_{Aeq,15min}$	Sleep Disturbance Criteria $L_{A1,1\ minute}$,
44	49	59

2 Noise Level Assessment

Potential noise impact from the extended operating hours has been assessed against the standard noise criteria required of the NSW Department of Planning, being the DECCW's intrusiveness and sleep disturbance noise criteria.

2.1 Intrusiveness Noise Assessment

The noise level predictions for use of the multi-purpose hall for basketball were set out in the initial acoustic report. As the site operations would be for basketball only during the extended hours, noise emission from the multi-purpose hall is presented only.

Table 2 – Predicted Noise Levels

Location	Receiver Level	Use	Predicted Noise Level, $L_{Aeq,15\text{-}minute}$	Criteria $L_{Aeq,15\text{-}minute}$
A4	Ground	Basketball	50	49
	1	Basketball	51	49

The predicted noise levels reveal that noise emission from the use of the multi-purpose hall for basketball marginally exceeds the intrusiveness noise criteria between 10pm and 12am. It is noted that noise emission to the nearest residential premises is via the operable louvres located on the eastern facade. With all louvres on the eastern side of the building closed during the extended hours of operation, the noise criteria will be readily satisfied. It has been confirmed that this is acceptable for ventilation.

2.2 Sleep Disturbance Noise Assessment

The sleep disturbance noise assessment focuses on potential impact from people arriving and leaving the multi-purpose hall during the night time period (after 10pm). The assessment has been based upon a range of vocal efforts, as presented in Table 3 below. Noise generated by people talking is referenced in many technical papers and books. The sound pressure levels set out in Table 3 are taken as the instantaneous sound pressure levels and therefore suitable for the sleep disturbance assessment.

Table 3 - Vocal Sound Pressure Levels at 1m

Noise Source	Overall Level, dB(A)	Octave Band Centre Frequencies, Hz Sound Pressure Levels, dB(lin)								
		31.5	63	125	250	500	1000	2000	4000	8000
Shout (male)	88	-	-	44	70	80	83	80	73	64
Loud (male)	75	-	-	56	65	72	71	66	60	51
Raised (male)	65	-	-	54	59	64	58	54	49	43
Normal (male)	58	-	-	49	50	52	51	47	43	38
Casual (male)	53	-	-	44	45	48	38	35	35	32
Shout (Female)	82	-	-	30	56	70	77	76	70	60
Loud (Female)	71	-	-	32	58	64	67	64	57	50
Raised (Female)	62	-	-	35	55	60	58	54	49	44
Normal (Female)	55	-	-	35	51	54	49	44	43	39
Casual (Female)	50	-	-	35	49	50	42	40	35	38

Note: Source reference – Handbook of Acoustical Measurements and Noise Control, Third Edition, Cyril M. Harris

A Speaker's vocal effort is also affected by ambient noise. In ambient noise levels above 50dB(A), a normal-hearing person typically raises his or her voice. On the average, voice levels are raised approximately 3 to 6dB for every 10dB increase in noise level above 50dB(A).

Based on the nearest distance of approximately 35m from the entry of the multi-purpose hall to residential premises located on the opposite side of George Street, the following resultant noise levels have been predicted.

Table 4 - Sleep Disturbance Noise Assessment

Noise Source	Sound Pressure Level @ 1m	Resultant Noise Level
Shout (male)	88	**73**
Loud (male)	75	**60**
Raised (male)	65	50
Normal (male)	58	43
Casual (male)	53	38
Shout (Female)	82	**67**
Loud (Female)	71	56
Raised (Female)	62	47
Normal (Female)	55	40
Casual (Female)	50	35

Based on the noise level predictions, the sleep disturbance criteria would only be exceeded where people were to use a loud (male only) or shouting voice level outside the multi-purpose hall. It is recommended that supervisors and participants be advised of the potential disturbance from excessive noise when outside the building. We confirm that the operational management plan will include instruction for attendees to arrive and leave in a quiet and orderly manner to minimise potential disturbance at nearby residential premises.

3 Conclusion

Renzo Tonin & Associates has undertaken a review of the potential noise impacts from the extended use of the multi-purpose hall at the National Centre for Indigenous Excellence. From our assessment we conclude that noise emission from activities within the multi-purpose hall can be readily addressed by closure of the louvres located on the eastern facade of the building. Potential noise impact from people shouting or talking in a 'loud' voice whilst arriving or leaving the premises during the night time period (after 10pm) will be addressed in the operational management procedures to ensure that people leave in a quiet and orderly manner. The assessment reveals that people conversing in normal to raised speech levels would not exceed the relevant sleep disturbance noise goals. We conclude that the proposed use can be operated in a manner that complies with the relevant acoustic criteria.

We trust that the information provided meets your immediate requirements.

Yours faithfully,

RENZO TONIN & ASSOCIATES (NSW) PTY LTD

Glenn Wheatley

Team Leader / Supervising Engineer

Environmental Acoustics Team 3