14 August 2013

610.12346 RFI Outdoor Noise 20130814.docx

Platinum.Biz
2/41 Eastern Creek Drive
EASTERN CREEK NSW 2766

Attention: Steve Nolan

Dear Steve

St Narsai Assyrian Christian College
Fairfield Council RFI
Acoustical Assessment of Outdoor Noise Emissions

1 Introduction

SLR Consulting Australia Pty Ltd (SLR) has carried out an additional assessment to quantify outdoor noise emissions associated with the operation of the proposed St Narsai Assyrian Christian College at Horsley Park. This assessment has been prepared in response to a request from Fairfield City Council to address the cumulative impacts of all outdoor activities.

Our assessment has been based on information provided to us by the client and includes the following:

- Approximately 200 Middle School (years 5 to 7) and 400 High School (years 8 to 12) students.
- COLA and Main Courtyard used at recess and lunch time. Lunch times will be staggered and the two cohorts (Middle School and Senior School) will not be outdoors simultaneously.
- The lunch period would extend from 11.30 am to 1.00 pm daily (ie 45 minutes per cohort).
- There will be no sporting activities taking place outside the use of the COLA area for games during PE classes (such as basketball/netball) involving less than 50 students at any one time.
- The amphitheatre may be used for drama students (possibly up to 20 students over 12 one-hour periods per week) and would only be used for public viewing/performance one to two times per month.

This report presents a summary of our findings.

2 Prediction and Assessment of Outdoor Noise Emissions

Predictions of noise emissions from students engaged in typical outdoor activities have been conducted to the five main/closest residential receiver locations surrounding the proposed College site.

Calculations have been based on several scenarios in order to establish the potential (worst case) noise levels that may be received during recess and lunch periods, PE classes held in the COLA, drama presentation in the amphitheatre. The sound power levels used for predictive purposes were based upon levels established for a variety of vocal efforts, ranging from 53 dBA for casual vocal effort up to 82 dBA for shouting. The levels adopted have been previously used by SLR for a wide variety of projects involving the assessment of outdoor activity noise and are generally accepted throughout the industry as being a reasonable representation of noise generated across various vocal strengths.

The results of predictions are presented, together with the representative L_{A90} and L_{Aeq} noise levels established during a recent attended daytime noise survey (conducted to confirm the previous ambient noise survey conducted in 2006 for the original Development Application acoustical assessment for the project) in **Table 1**.

Table 1 Predicted Noise Emissions During Outdoor Activities

Receiver	Scenario	Hours per Week	Predicted L_{Aeq} dBA	L_{A90} at Receiver dBA	L_{Aeq} at Receiver dBA	Level Relative to L_{A90} - dBA	Level Relative to L_{Aeq} - dBA
North	Recess/Lunch 400 Students in COLA & Main Courtyard	5	44	39	49	+5	-5
	Recess/Lunch 200 Students in Middle School Playground	5	-	39	49	-	-
	PE Class in COLA 50 Students	16	40	39	49	+1	-9
	Amphitheatre Drama Class Usage	12	37	39	49	-2	-12
West	Recess/Lunch 400 Students in COLA & Main Courtyard	5	53[1]	39	49	+14 (+9 with barrier adjacent to COLA)	+4 (-1 with barrier adjacent to COLA)
	Recess/Lunch 200 Students in Middle School Playground	5	-	39	49	-	-
	PE Class in COLA 50 Students	16	45[1]	39	49	+6 (+1 with barrier adjacent to COLA)	-4 (-9 with barrier adjacent to COLA)
	Amphitheatre Drama Class	12	37[1]	39	49	-2	-12

	Usage						
South	Recess/Lunch 400 Students in COLA & Main Courtyard	5	40	39	49	+1	-9
	Recess/Lunch 200 Students in Middle School Playground	5	51	39	49	+12	+2
	PE Class in COLA 50 Students	16	34	39	49	-5	-15
	Amphitheatre Drama Class Usage	12	31	39	49	-8	-18
Southeast	Recess/Lunch 400 Students in COLA & Main Courtyard	5	35	39	49	-4	-14
	Recess/Lunch 200 Students in Middle School Playground	5	46	39	49	-3	-13
	PE Class in COLA 50 Students	16	28	39	49	-11	-21
	Amphitheatre Drama Class Usage	12	27	39	49	-12	-22
East	Recess/Lunch 400 Students in COLA & Main Courtyard	5	38	39	49	-1	-11
	Recess/Lunch 200 Students in Middle School Playground	5	-	39	49	-	-
	PE Class in COLA 50 Students	16	31	39	49	-8	-18
	Amphitheatre Drama Class Usage	12	30	39	49	-9	-19

Note 1: These levels can be reduced an additional 5 dB with the provision of a 1.8 m high solid barrier screen along the western boundary, adjacent to the COLA.

The results presented in **Table 1** demonstrate that, with the exception of recess and lunch periods at two of the nearest residential receiver locations, outdoor noise emissions do not exceed the L_{A90} background sound level by more than 5 dBA. The predicted L_{Aeq} noise emissions from outdoor activities are consistent with existing ambient L_{Aeq} noise levels at all nearby residential receivers.

3 Conclusion

An additional assessment has been undertaken to quantify the levels of noise received at residential premises surrounding the proposed St Narsai Assyrian Christian College due to students engaged in typical school activities held outdoors.

To the best of our knowledge, there have been no social surveys conducted to quantify the levels of noise generated from outdoor activities at schools of varying size and type or to document the response of the surrounding community to such noise emissions.

Whether this is due to the noise source being of a highly variable nature, making quantification of such emissions extremely difficult, or because this source is considered to be an integral part of any school development, is a point of some conjecture. Whilst attempts could certainly be made to measure the levels of noise which may be experienced at a nearby receiver, the reliability, statistical replication and relevance of such an assessment would always be open to question. In addition, the purpose of quantifying a noise source is to enable its comparison with a criterion which has been developed in consultation with appropriate parties, for the purpose of assessing the potential impact of the noise upon a receiver. There are no such criteria applicable to the assessment of outdoor activity noise from schools.

We consider attempting to assign a noise level to noise emissions from school children involved in outdoor activities, predominantly during recess and lunch breaks and then comparing it with a predetermined criterion for the purposes of assessing "offensiveness", to be inappropriate. Being an essential part of every residential community, schools are located to permit ready access to students and, by definition, are generally surrounded by residential premises. An assessment based on a comparison between a measured and/or predicted level with a specific criterion may set an undesirable precedent for both existing and future schools.

In the judgement of Justice Pain in the Land and Environment Court case of Meriden School v Pedavoli, noise from children playing outdoors was found to not constitute offensive noise. In the case of Christian Brothers v Waverley Council, which involved the use of a swimming pool, no specific criteria were mentioned but Commissioner Murrell commented that,

> *"It is important in our society for uses such as schools and residential areas to coexist".*

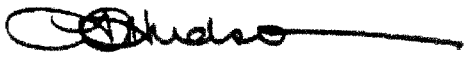
In summary, the following factors apply to the assessment of noise generated by school children during outdoor activities:

- the nature of the noise source is not inconsistent with that experienced within residential communities;
- it occurs generally during short periods throughout the day, within school hours;
- it is not reasonable to consider that this noise source would interfere with regular domestic activities which may occur during this time; and
- the wider community benefits through the provision of the facility.

The noise from students engaged in outdoor activities will, at times, be audible at surrounding nearby residential premises. Noise levels are predicted to generally be within 5 dBA of the typical daytime background L_{A90} levels and are consistent with the existing daytime ambient L_{Aeq} noise levels.

We trust this information is of assistance. Please do not hesitate to contact this office should you require any additional details.

Yours sincerely



LEE HUDSON
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