
Richard Gill National Music Academy

Operational noise management plan

Prepared for Richard Gill School
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1 Introduction

EMM Consulting Pty Limited (EMM) has been engaged by Richard Gill School to prepare an operational noise management plan (ONMP) for the Richard Gill International Music Academy located at 155-157 Maitland Street Muswellbrook ('the Project'). The ONMP has been prepared to satisfy condition E6 of the State Significant Development (SSD) conditions for the Richard Gill School project (SSD 10380).

The ONMP provides a description of the measures to be implemented by the school to minimise noise impacts and provides a framework for addressing noise complaints. The purpose of the ONMP is to:

- provide the school with a description of their responsibilities regarding noise management;
- address the relevant conditions in the development approval and other guidelines relevant to this document;
- establish noise management levels with reference to appropriate standards and guidelines, to be adhered to by the school;
- provide mechanisms for the establishment of best practice with respect to minimising noise impacts; and
- outline a procedure for managing noise complaints.

1.1 State Significant Development Conditions

This ONMP has been prepared to address condition E6 of SSD 10380, which requires the following be satisfied:

Operational Noise Management Plan

E.6 Prior to the commencement of operation, an Operational Noise Management Plan must be submitted to the satisfaction of the Certifier, and a copy provided to the Planning Secretary and Council. The Plan must include but not be limited to:

- a) arrangements for the management of staff and students that includes measures to minimise noise impacts on any sensitive residential receivers;*
- b) set out arrangements for the management and monitoring of the use of outdoor student areas;*
- c) include a complaints management procedure to provide for the registration of, and response to, complaints; and*
- d) the annual monitoring and review of the Operational Noise Management Plan, with a copy of the review and any revised Operational Noise Management Plan to be provided to the Planning Secretary and Council.*

1.2 Project description

The Project is located at Lot 2 DP1118310, 155-157 Maitland Street, Muswellbrook. The development scope will include a refit of the existing structure on the site and the construction of a new outdoor play area. The Project is generally surrounded by residential land use with some short-term accommodation (motel).

Assessment locations have been grouped into separate noise catchment areas (NCAs), with the worst affected assessment location in each NCA forming the basis of the assessment of potential impact. The land uses within each NCA are summarised in Table 1.1 and illustrated in Figure 1.1.

Table 1.1 Noise catchment areas

NCA	Land uses within NCA
1	Residential
2	Residential
3	Residential Short term accommodation (motel)

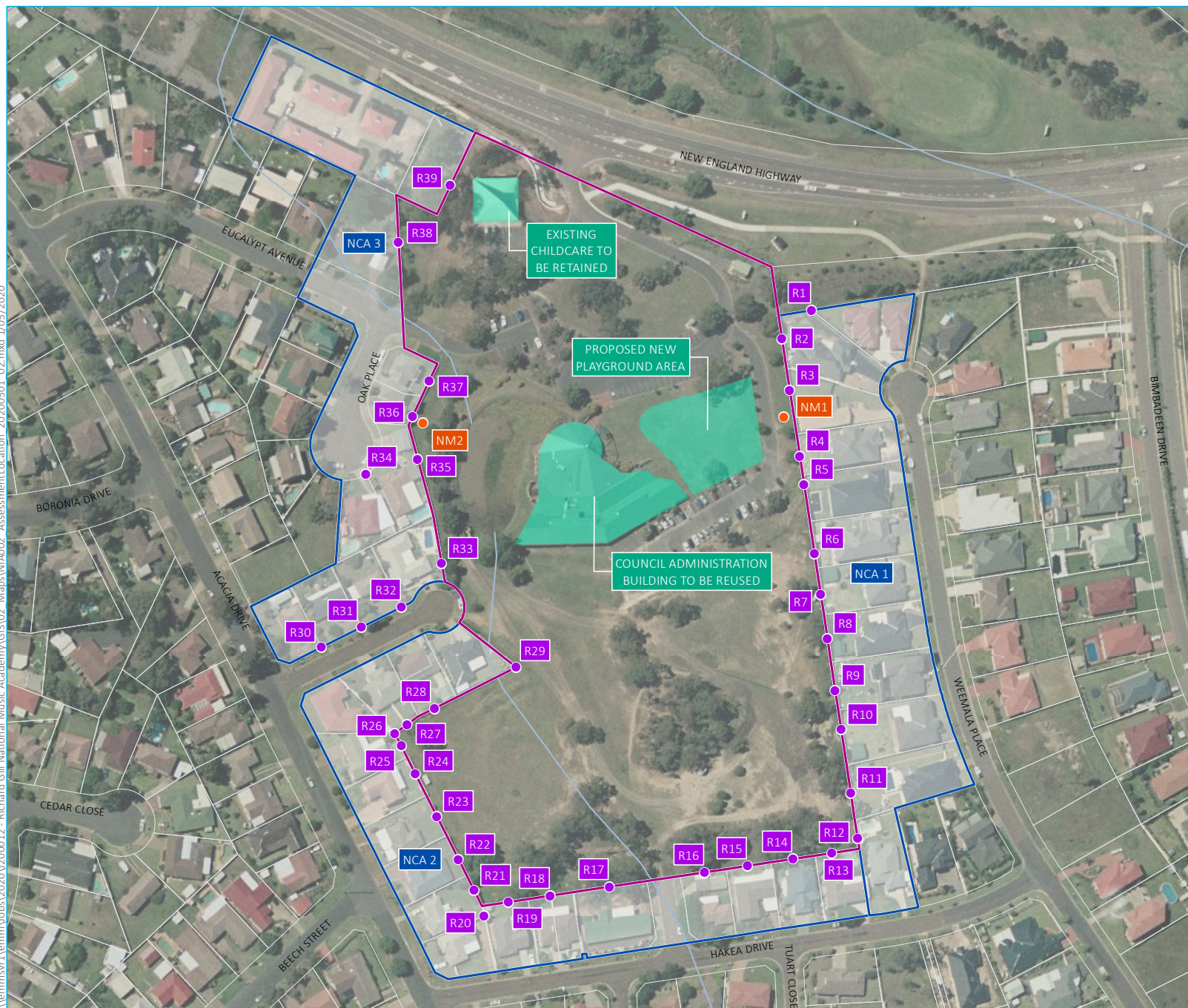
1.3 Referenced documents and guidelines

This ONMP has been developed and guided by the following:

- EMM 2020, *Richard Gill National Music Academy – Noise and vibration impact assessment* prepared for Stanton Dahl Architects;
- NSW Environment Protection Authority (EPA) 2017, *Noise Policy for Industry* (NPfI);
- Standards Australia – AS 1055-2018 *Acoustics - Description and measurement of environmental noise - General procedures*.

Several technical terms are required for the discussion of noise and vibration. These are explained in the Glossary.

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KEY

- Assessment location
- Noise monitoring location
- Site boundary
- NCA boundary
- Site feature footprint
- Cadastral boundary
- Watercourse/drainage line

Site location and surrounding
uses

Stanton Dahl Architects
Richard Gill Music Academy
Operational noise management plan
Figure 1.1

2 Noise management levels

Operational noise generated by the school is to be minimised such that the objectives of the NPfI are achieved. Noise management levels are provided in terms of project noise trigger levels (PNTLs) which are established using on-site noise monitoring and the procedures provided in the NPfI.

The PNTLs for the school are established in Section 4.1 of the EMM (2020) report and reproduced in Table 2.1 below.

Table 2.1 **Project noise trigger levels**

NCA	Receiver type	Assessment period ¹	Project noise trigger levels (PNTL), dB L _{Aeq,15min}
1	Residential	Day	46
		Evening	44
		Night	38
2 & 3	Residential	Day	46
		Evening	46
		Night	43
	Childcare	When in use	58
	Motel	Day	68
		Evening	58
		Night	53

Notes: 1. Day: 7 am to 6 pm Monday to Saturday; 8 am to 6 pm Sundays and public holidays; Evening: 6 pm to 10 pm; Morning shoulder: 6 am to 7 am Monday to Saturday, 6 am to 8 am Sundays and public holidays; Night: remaining periods.

3 Noise management and mitigation

Operational noise sources associated with the school include:

- vehicles using internal driveways and within the carpark;
- children using the outdoor play area;
- music breaking out from internal performance and practice spaces; and
- mechanical plant operation.

Noise management procedures for these noise sources are provided below.

3.1 Vehicle noise

The following is recommended to minimise noise associated with internal driveways and carparks:

- unless required for emergency or safety situations, the use of horns should be discouraged within the carpark (eg for attracting children's attention during pickup and drop off).;
- internal driveways and carpark surfaces should be maintained such that excessive noise from car movements is minimised (eg louder tyre noise on loose bitumen as opposed to that rolling on an impervious surface); and
- during evening events (eg performances), carpark attendants should be utilised to direct traffic and avoid cars queuing on internal driveways adjacent to residential dwellings.

3.2 Noise during internal performance and practice spaces

The following is recommended to minimise noise breakout from internal performance and practice spaces:

- all external windows and doors to a classroom or hall are to be closed during musical performance or practice within the space; and
- the use of the public address (PA) system during evening events (eg to call patrons into the multipurpose hall) should be avoided when external doors and windows are open.

3.3 Children using the outdoor play areas

The following is recommended to minimise noise from children using outdoor play areas:

- PA equipment (portable or fixed) should not be used in outdoor play areas; and
- excessive screaming or squealing in outdoor play areas should be discouraged.

In the event of a complaint and a confirmed exceedance of the project noise trigger levels by an acoustic consultant, a restriction of children utilising outdoor play areas (ie number of children and/or times of use) may be explored to minimise noise impact to nearby noise sensitive properties.

3.4 Mechanical plant

Mechanical plant servicing the school should be suitably maintained to avoid excessive noise or annoying characteristics which would otherwise be absent under well maintained operating conditions.

3.5 Review and improvement

The noise management plan is to be reviewed annually, when updates to the plan are required, or as directed by the Planning Secretary or local Council. The review process is to reflect changes in environmental legislation and guidelines, and changes in technology or operational procedures.

The revised plan is to be submitted to the Planning Secretary and local Council.

4 Complaints handling

4.1 Recording noise complaints

The school will keep a record of any noise complaint made to the school or any employee or any agent of the school. Records must include details of the following:

- date and time of complaint;
- personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
- method by which complaint was made;
- nature of the complaint, for example, carpark noise or outdoor playground noise;
- action taken by the school and any follow up contact; and
- if no action was taken, the reason why no action was taken.

4.2 Follow-up procedure

Sustained noise complaints received from single properties should be investigated by the school. If it is determined that the source of complaint is associated with the noise from the operation of the school, and if the issue cannot be directly addressed by the school itself, the school will engage an acoustic consultant to assess noise levels against noise criteria in Section 2.

4.3 Engagement of an acoustic consultant

In the event an acoustic consultant is required to be engaged, the consultant's assessment will include reasonable and feasible noise management and mitigation measures to reduce levels if they are found to be above noise management levels.

The consultant should be eligible for membership to the Australian Acoustic Society (AAS) and/or a Member of the Australasian Association of Acoustic Consultants (AAAC).

Glossary

Several technical terms are required for the discussion of noise. These are explained in Table G.1.

Table G.1 Glossary of acoustic terms

Term	Description
ABL	The assessment background level (ABL) is defined in the NPI as a single figure background level for each assessment period (day, evening and night). It is the tenth percentile of the measured L_{90} statistical noise levels.
dB	Noise is measured in units called decibels (dB). There are several scales for describing noise, the most common being the 'A-weighted' scale. This attempts to closely approximate the frequency response of the human ear.
L_{A1}	The A-weighted noise level exceeded for 1% of the time.
L_{A10}	The noise level which is exceeded 10% of the time. It is roughly equivalent to the average of maximum noise level.
L_{A90}	The noise level that is exceeded 90% of the time. Commonly referred to as the background noise level.
L_{Aeq}	The energy average noise from a source. This is the equivalent continuous sound pressure level over a given period. The $L_{eq,15 \text{ minute}}$ descriptor refers to an L_{eq} noise level measured over a 15-minute period.
L_{Amax}	The maximum root mean squared sound pressure level received at the microphone during a measuring interval.
PNTL	The project noise trigger level is the target noise level for a particular noise-generating facility. They are based on the most stringent of the project intrusiveness noise level or the project amenity noise level.
RBL	The Rating Background Level (RBL) is an overall single value background level representing each assessment period over the whole monitoring period. The RBL is used to determine the intrusiveness criteria for noise assessment purposes and is the median of the ABL's.
Sound power level (L_w)	A measure of the total power radiated by a source. The sound power of a source is a fundamental property of the source and is independent of the surrounding environment.

It is useful to have an appreciation of decibels, the unit of noise measurement. Table G.2 gives an indication as to what an average person perceives about changes in noise levels:

Table G.2 Perceived change in noise

Change in sound level (dB)	Perceived change in noise
1 to 2	typically indiscernible
3	just perceptible
5	noticeable difference
10	twice (or half) as loud
15	large change
20	four times (or quarter) as loud

Examples of common noise levels are provided in Figure G.1.

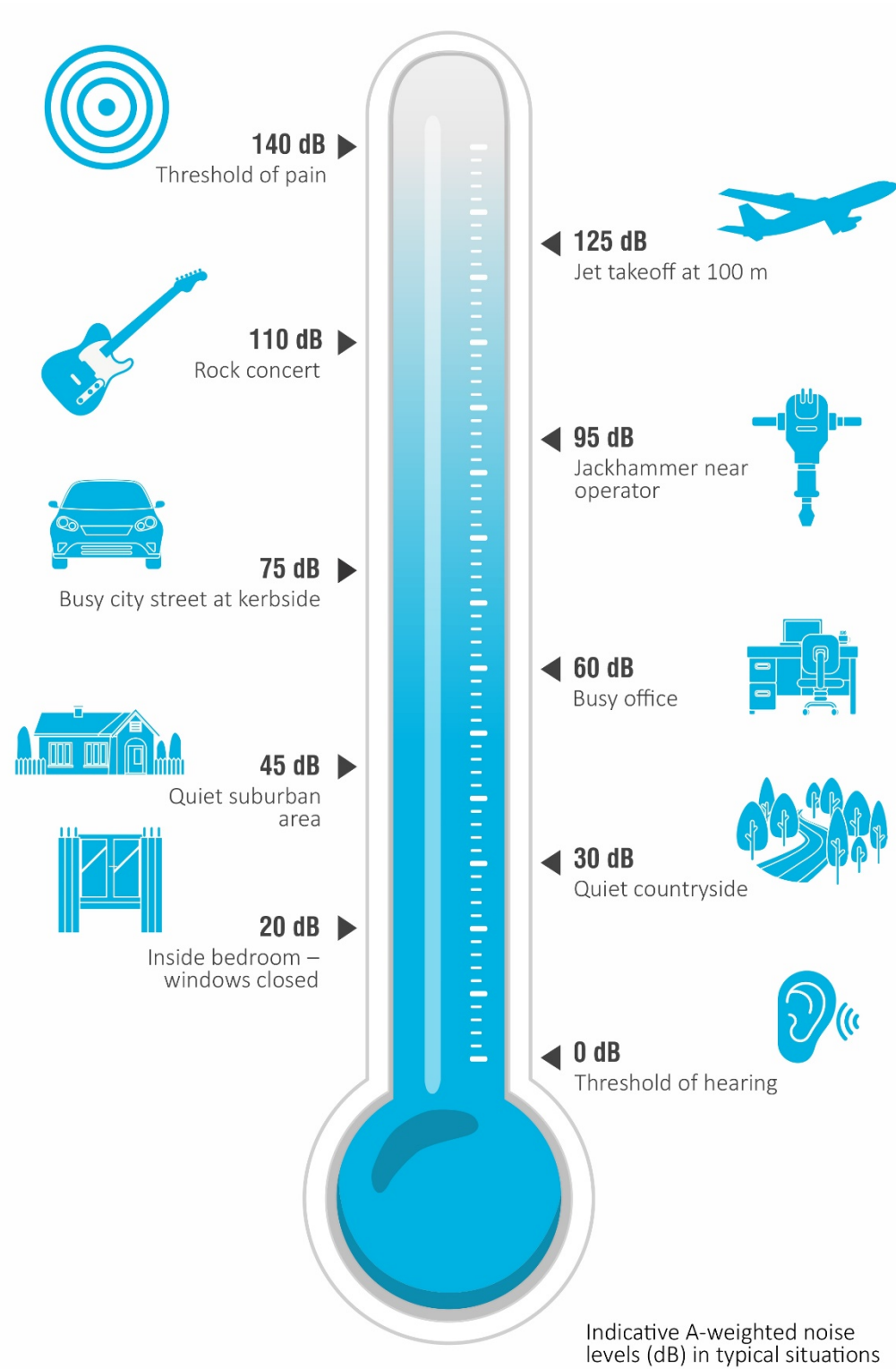


Figure G.1 Common noise levels