

20 HERADALE PARADE, BATEMANS BAY

DA Noise Assessment

Prepared for:

Place Studio
74 King Street
Newtown NSW 2042

SLR Ref: 670.30141-R01
Version No: -v4.0
August 2024



PREPARED BY

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BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Place Studio (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

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DOCUMENT CONTROL

Reference	Date	Prepared	Checked	Authorised
670.30141-R01-v4.0	28 August 2024	Matthew Bryce	Martin Davenport	Matthew Bryce
670.30141-R01-v4.0	23 November 2023	Matthew Bryce	Martin Davenport	Matthew Bryce
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1 Introduction

SLR Consulting Australia Pty Ltd (SLR) has undertaken a noise assessment for the proposed residential development at 20 Heradale Parade, Batemans Bay, NSW.

The assessment considers the potential for road noise intrusion from the surrounding road network.

The aim of the assessment was to determine minimum building constructions required to achieve satisfactory acoustic amenity within the future dwellings.

2 Proposed Development and Surrounds

The site is located in a coastal residential area. **Figure 1** shows the site location and surrounds.

The development will be comprised of three 4-storey buildings. There will be a basement level carpark.

Layout plans and elevation drawings can be seen in **Appendix A**.

3 Road Noise Criteria

The Eurobodella Shire Council (ESC) "*Batemans Bay Regional Centre Development Control Plan 2011*" (the DCP) does not include specific objectives or controls in relation to road traffic noise at developments adjacent to busy roads. Consequently, it is appropriate to consider road noise in the context of commonly-applied published criteria available in NSW.

The NSW Department of Planning (DoP) *Development near Rail Corridors and Busy Roads – Interim Guideline* (the DoP Guideline) provides guidance for the consideration of road noise and building constructions for proposed residential development near existing roads.

The DoP Guideline relies upon the *State Environmental Planning Policy (Infrastructure) 2007* (Infrastructure SEPP) for internal noise objectives. This has since been replaced by the *State Environment Planning Policy (Transport and Infrastructure) 2021* (T&I SEPP), however applicable noise criteria remain unchanged. In relation to road traffic noise at residential developments, Clause 2.119 'Impact of road noise or vibration on non-road development' of the T&I SEPP states:

"(3) If the development is for the purposes of residential accommodation, the consent authority must not grant consent to the development unless it is satisfied that appropriate measures will be taken to ensure that the following LAeq levels are not exceeded—

(a) in any bedroom in the residential accommodation — 35 dB(A) at any time between 10 pm and 7 am,

(b) anywhere else in the residential accommodation (other than a garage, kitchen, bathroom or hallway) — 40 dB(A) at any time."

Figure 1 Site Location and Surrounds



4 Existing Noise Environment

Noise monitoring was completed at the site between Sunday 27 November 2022 and Saturday 3 December 2022. The measured noise levels have been used to determine the existing road traffic noise levels at the site.

The noise monitoring equipment continuously measured existing noise levels in 15-minute periods during the daytime and night-time.

The measurement results are shown in **Table 1**. The daily noise level graphs of the monitoring have been presented in **Appendix B**.

Table 1 20 Heradale Parade – Road Traffic Noise Levels

Location	Measured Noise Level (LAeq dBA) ¹	
	Day (15 hour)	Night (9 hour)
South-facing facade, ground level	52	46

The instrumentation used in the survey is described in **Table 2**.

Table 2 Noise Monitoring Instrumentation

Instrumentation	Serial Number
SVAN Type 957 Sound Level Meter	20677
SVAN SV-30A Acoustic Calibrator	24604

The calibration of the noise logger was checked before and after the monitoring period and was found to be within an acceptable margin of ± 1 dBA of the reference signal.

All items of acoustic instrumentation were designed to comply with Australian Standard (AS) IEC 61672.1 2019 *Electroacoustics – Sound Level Meters* and AS IEC 60942 2017 *Electroacoustics – Sound calibrators*, and carried current NATA or manufacturer calibration certificates.

The measured noise levels have been adjusted to account for the measurement position relative to the future facade assessment location as shown in **Table 3**, to establish the future road traffic noise at the site.

Table 3 Future Road Traffic Noise Levels

Noise Level	Road Traffic Noise Level, dBA	
	Daytime (LAeq(15 hour))	Night-time (LAeq(9 hour))
Measured noise level – ground level	52	46
Adjustment for elevated receptor height ¹	+3	+3
Adjustment for facade reflection/build-up	+2.5	+2.5
Future Facade Noise Level	58	52

1. Noise level increases at higher levels due to the effect of less ground absorption.

5 Road Traffic Noise Intrusion

The DoP Guideline recommends the use of Australian Standard (AS) 3671:1989 *Acoustics — Road Noise Intrusion—Building siting and construction* (AS 3671) to determine the level of noise reduction required and the minimum sound insulation performance to be achieved by the external building envelope.

5.1 Required Noise Reduction

The required noise reductions to be achieved by the building facades have been calculated using the noise levels in **Table 3** and are shown in **Table 4**.

Table 4 Required Noise Reductions

Time of Day	External Noise Level, dBA LAeq	Internal Objective, dBA LAeq	Required Noise Reduction, dBA
Day (7:00 am – 10:00 pm)	58 (15 hour)	40 (Habitable room)	18
Night (10:00 pm – 7:00 am)	52 (9 hour)	35 (Bedroom)	17

5.2 Proposed Building Constructions

The proposed building constructions are described in **Table 5**, along with the expected noise reduction performance.

Table 5 Proposed Building Constructions

Building Element	Construction	Expected Noise Reduction, Rw ¹
Exterior walls	Concrete with plasterboard internal lining with cavity insulation (minimum 50 mm thick, 14 kg/m ³ density)	50
Roof	Concrete slab, 10 mm thick plasterboard ceiling with minimum 50 mm thick, 14 kg/m ³ density insulation overlaid	48

1. Noise reduction performance is commonly described in terms of the Weighed Sound Reduction Index, Rw. The higher the value, the better the noise reduction performance.

Based on the above proposed external wall and roof/ceiling constructions, the glazing or external entry doors would be the controlling element regarding road traffic noise intrusion into the future dwellings.

5.3 Facade Sound Insulation and Constructions

Calculations in accordance with the methodology contained within AS 3671 were undertaken to determine the minimum sound insulation performance of building constructions.

The layout of the apartments will be such that some bedrooms and habitable rooms (living rooms etc) in Building A and Building B would be directly exposed to noise from vehicles on Bavarde Avenue.

The size of the glazed elements (as shown in the project drawings provided) and likely acoustic characteristics of the bedrooms and habitable rooms have been considered. It is anticipated that the floor covering to the bedrooms would be carpet and the habitable areas (ie dining/lounge, entry, etc) would be hard-floored (ie timber, vinyl and/or tiled), with all rooms furnished.

Based on the proposed design of the buildings, the road traffic noise levels expected at the site, and the AS 3671 methodology, the minimum sound insulation ratings required to meet the project criteria are described in **Table 6**.

Table 6 Minimum Sound Insulation Performance Requirements - Glazing

Facade	Occupancy	Minimum Sound Insulation (R_w)	Example Glazing/Configuration
Building A South-facing Ground Level	Living/Dining/Kitchen	24	6 mm thick float glass (weather seals)
Building A South-facing Levels 1-3	Bedrooms	23	6 mm thick float glass (weather seals)
	Living/Dining/Kitchen	24	6 mm thick float glass (weather seals)
Building B South- and East-facing Units B-G03, B-105, B-205	Bedroom	26	6.38 mm thick laminated glass (weather seals)
Building B South-facing Ground Level	Living/Dining/Kitchen	23	6 mm thick float glass (weather seals)
	Bedrooms	23	6 mm thick float glass (weather seals)
Building B South-facing Levels 1-2	Living/Dining/Kitchen	24	6 mm thick float glass (weather seals)
	Bedrooms	24	6 mm thick float glass (weather seals)
Building B Level 3, Unit B-301	Bedrooms	24	6 mm thick float glass (weather seals)
Building B Level 3, Unit B-302	Living/Dining/Kitchen	26	6.38 mm thick laminated glass (weather seals)
Building B Level 3, Unit B-303	Bedroom (no ensuite)	24	6 mm thick float glass (weather seals)
	Main bed (w/. ensuite)	26	6.38 mm thick laminated glass (weather seals)
	Living/Dining/Kitchen	26	6.38 mm thick laminated glass (weather seals)

Glazing to other facades/occupancies not described in **Table 6** do not require specific acoustic controls.

The glazing configurations in **Table 6** are examples only and alternative systems may be used. It is noted that a range of proprietary window style and glazing options and configurations (ie glass + seals + frame) would be available to achieve the specified minimum acoustic performance shown in **Table 6**.

The supplier/manufacturer will be responsible for ensuring satisfactory performance of window/glazing systems. The builder will be responsible for ensuring the correct glazing is installed appropriately and effectively to each location.

Windows and doors need to be closed to achieve compliance with the indoor noise objectives and an alternative means of adequate and appropriate ventilation may be provided. This does not preclude the use of natural ventilation however, where natural ventilation is to be provided, the ventilation opening must be selected such that the overall composite sound insulation of the facade is not compromised.

6 Conclusion

SLR has undertaken a road traffic noise intrusion assessment for DA purposes for the proposed residential apartment development at 20 Heradale Parade, Batemans Bay.

Road traffic noise at the site has been considered with regard to the NSW Department of Planning (DoP) *Development near Rail Corridors and Busy Roads – Interim Guideline*.

Noise monitoring of the ambient environment at the site, including noise from vehicles on the surrounding roads, was undertaken to establish road traffic noise levels outside future apartments at the proposed development.

Road traffic noise intrusion was assessed in accordance with methodology contained within AS 3671 to determine the minimum sound insulation rating of building elements to achieve the internal noise goals nominated in the DoP Guideline and the Infrastructure SEPP.

Calculations show that the proposed building constructions, together with the specified minimum sound insulation ratings determined in this report, would be acoustically suitable to achieve acceptable noise levels within all habitable areas within the dwellings. The required sound insulation ratings are not onerous and would be achieved with standard proprietary constructions.

Appendix A:

Site Plan, Layout and Elevations



LEGEND

- 1 BED
- 2 BED
- 2 BED - ADA
- 3 BED
- 3 BED - ADA
- 4 BED
- BALCONY
- COMMUNAL
- SERVICE ROOM

Document Notes

Verify all dimensions on site before commencing work. Report all discrepancies to the architect prior to construction. Place Studio shall not be held responsible for any variations to specifications or drawings due to any discrepancies without consultation. Use figured dimensions in preference to scaled dimensions. Drawings made to larger scales and those showing particular parts of the works take precedence over drawings made to smaller scales of for general purposes. All work is to conform to relevant Australian Standards and Codes together with all Author's requirements and Regulations.

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A	21/03/2023	DA SUBMISSION	SK
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C	24/11/2023	DA RFI Response	JA
D	03/09/2024	DA Submission	BA

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SCALE: 1 : 200 @ A1

PROJECT:

#2021029

HERADALE
BATEMANS BAY

20 HERADALE PARADE
BATEMANS BAY

DRAWING TITLE:

GA - GROUND FLOOR
PLAN

SHEET NUMBER:

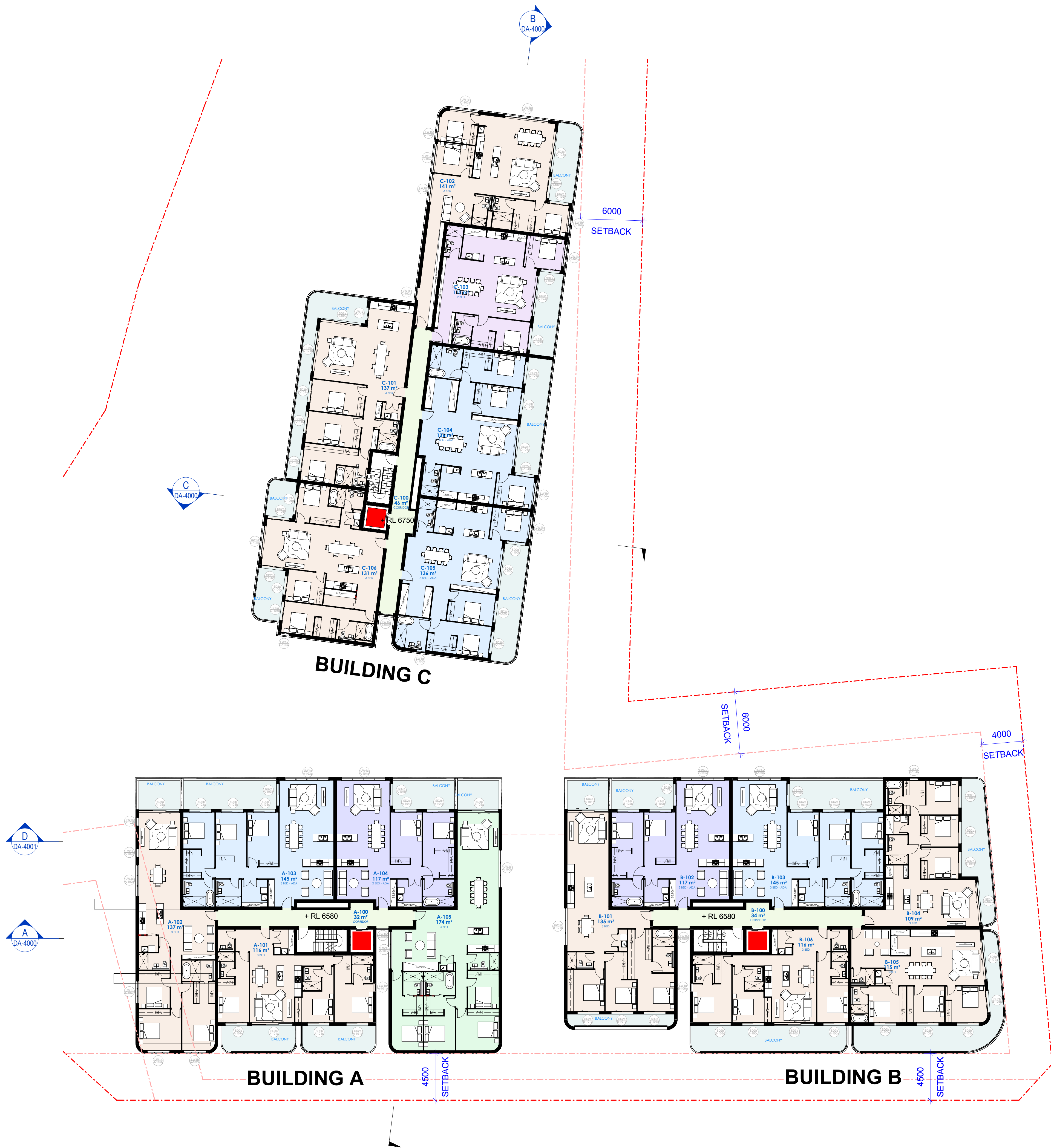
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LEGEND

- 1 BED
- 2 BED
- 2 BED - ADA
- 3 BED
- 3 BED - ADA
- 4 BED
- BALCONY
- COMMUNAL
- SERVICE ROOM

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HERADALE
BATEMANS BAY

20 HERADALE PARADE
BATEMANS BAY

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GA - LEVEL 01 PLAN

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LEGEND

- 1 BED
- 2 BED
- 2 BED - ADA
- 3 BED
- 3 BED - ADA
- 4 BED
- BALCONY
- COMMUNAL
- SERVICE ROOM

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HERADALE
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LEGEND

- 1 BED
- 2 BED
- 2 BED - ADA
- 3 BED
- 3 BED - ADA
- 4 BED
- BALCONY
- COMMUNAL
- SERVICE ROOM

Document Notes

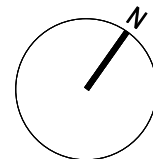
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**HERADALE
BATEMANS BAY**

20 HERADALE PARADE
BATEMANS BAY

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BUILDING A - SOUTH ELEVATION
1 : 150



BUILDING A - EAST ELEVATION
1 : 150



BUILDING A - NORTH ELEVATION
1 : 150



BUILDING A - WEST ELEVATION
1 : 150

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HERADALE
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20 HERADALE PARADE
BATEMANS BAY
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BUILDING A
ELEVATIONS
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BUILDING B - SOUTH ELEVATION
1 : 150



BUILDING B - EAST ELEVATION
1 : 150



BUILDING B - NORTH ELEVATION
1 : 150



BUILDING B - WEST ELEVATION
1 : 150

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BUILDING C - WEST ELEVATION
1 : 150



BUILDING C - NORTH ELEVATION
1 : 150



BUILDING C - EAST ELEVATION
1 : 150



BUILDING C - SOUTH ELEVATION
1 : 150

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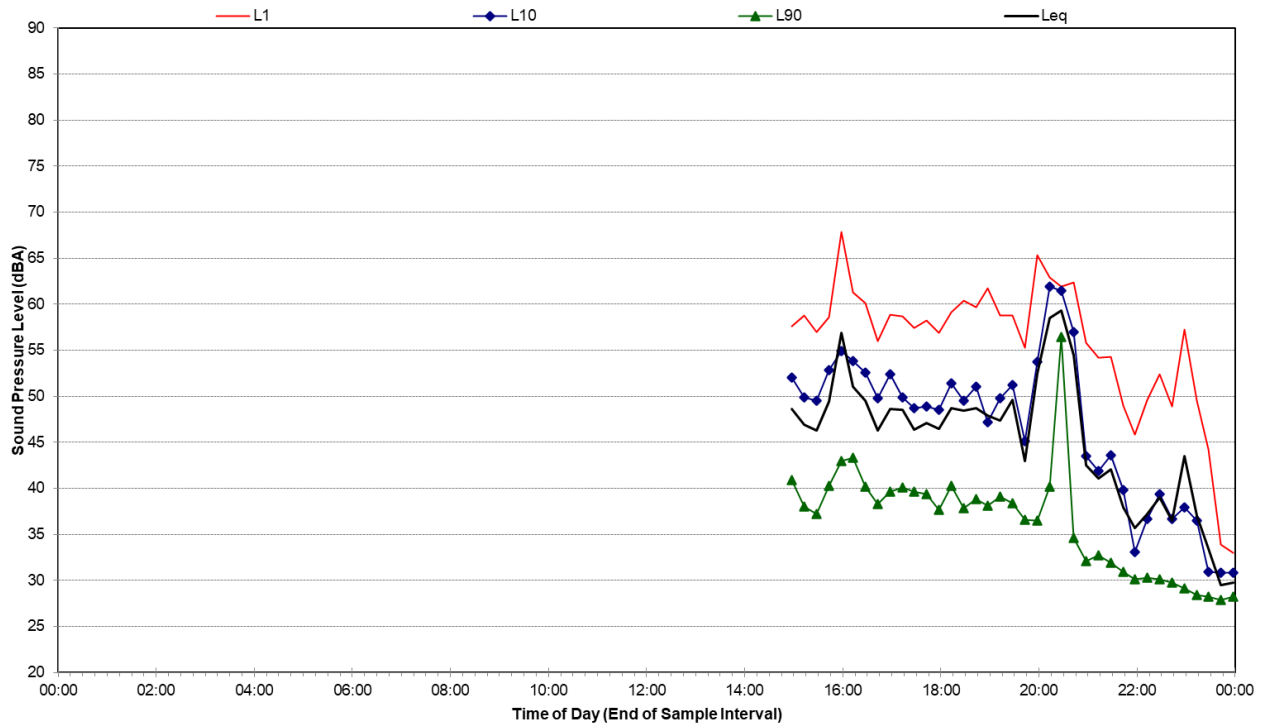
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Appendix B:

Daily Statistical Noise Level Graphs

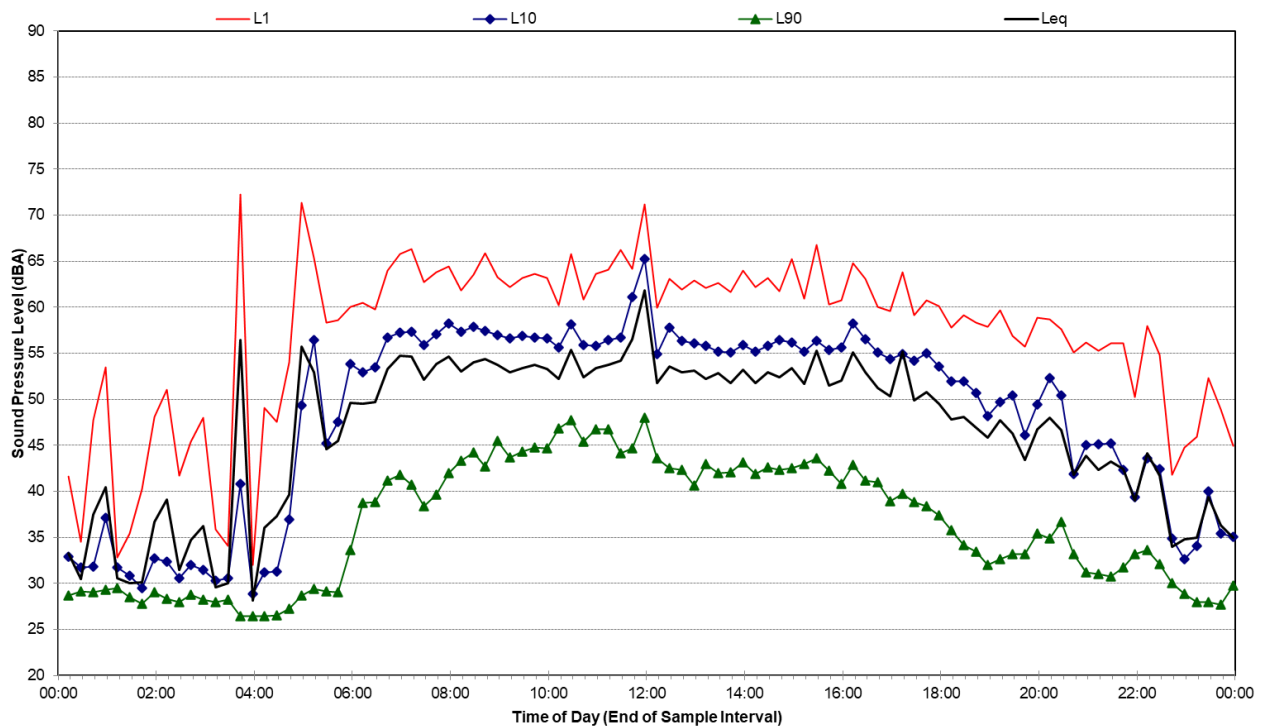
Statistical Ambient Noise Levels

20 Heradale Parade - Sunday, 27 November 2022



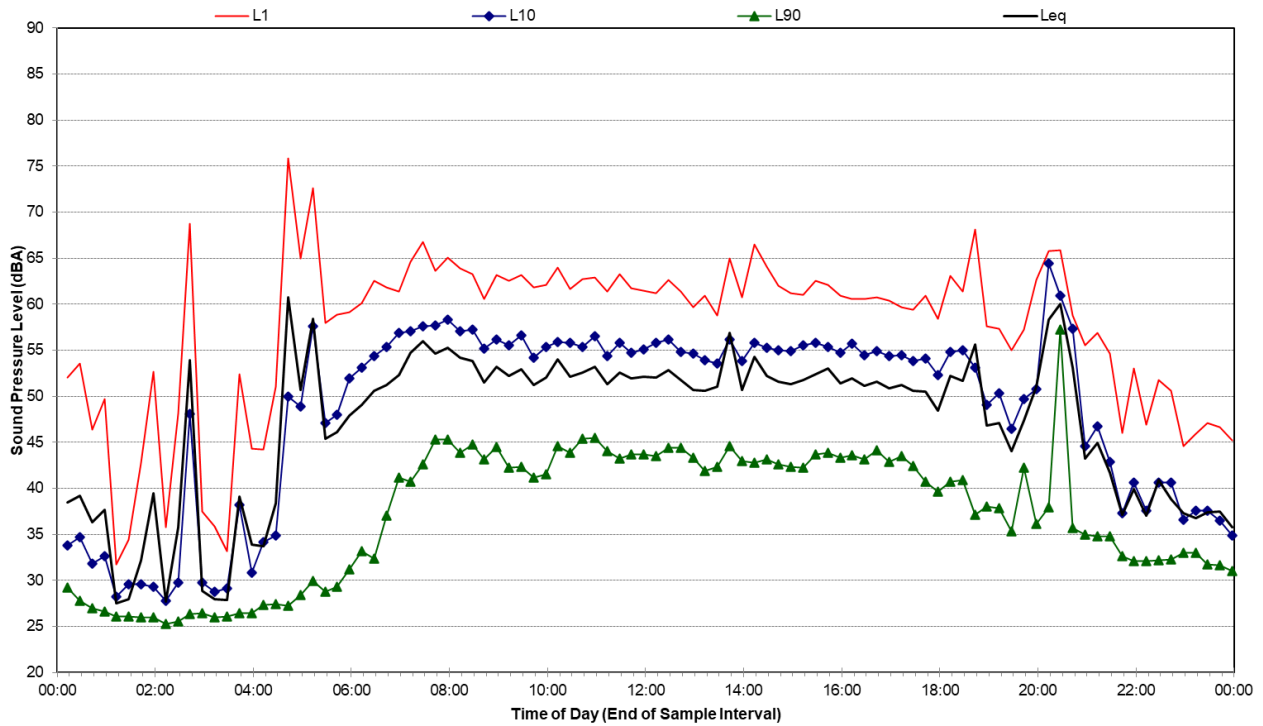
Statistical Ambient Noise Levels

20 Heradale Parade - Monday, 28 November 2022



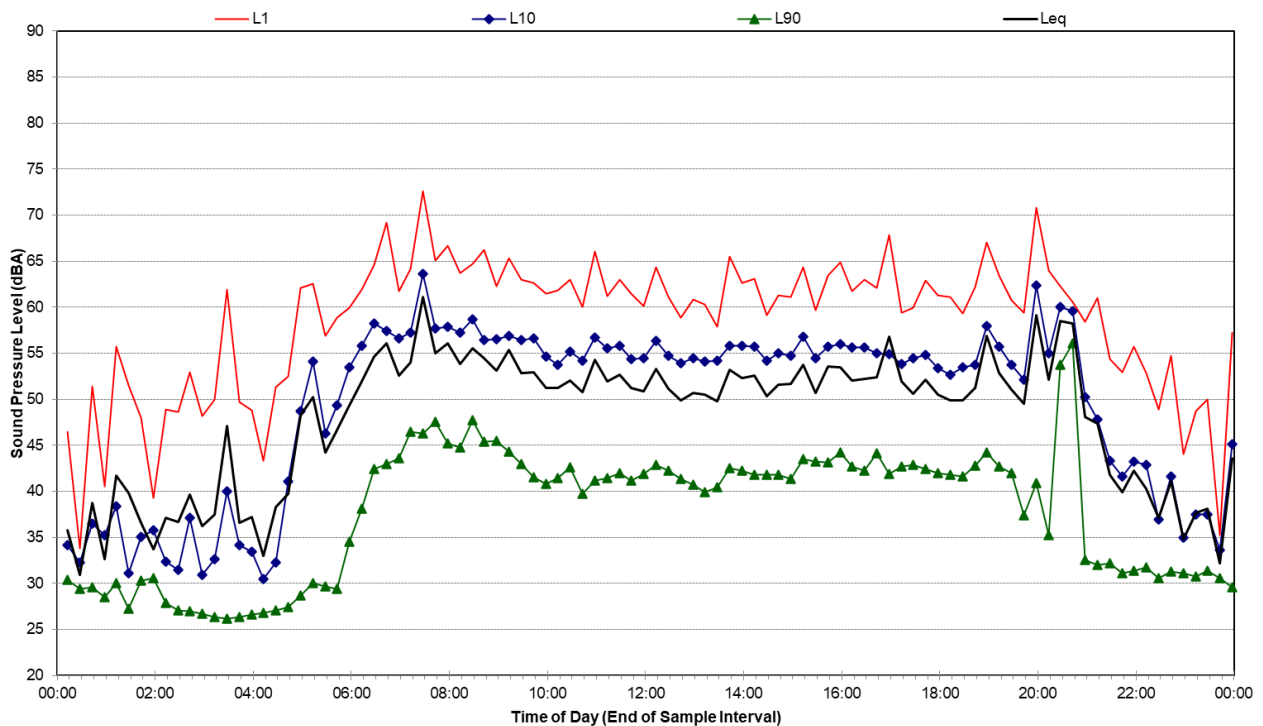
Statistical Ambient Noise Levels

20 Heradale Parade - Tuesday, 29 November 2022



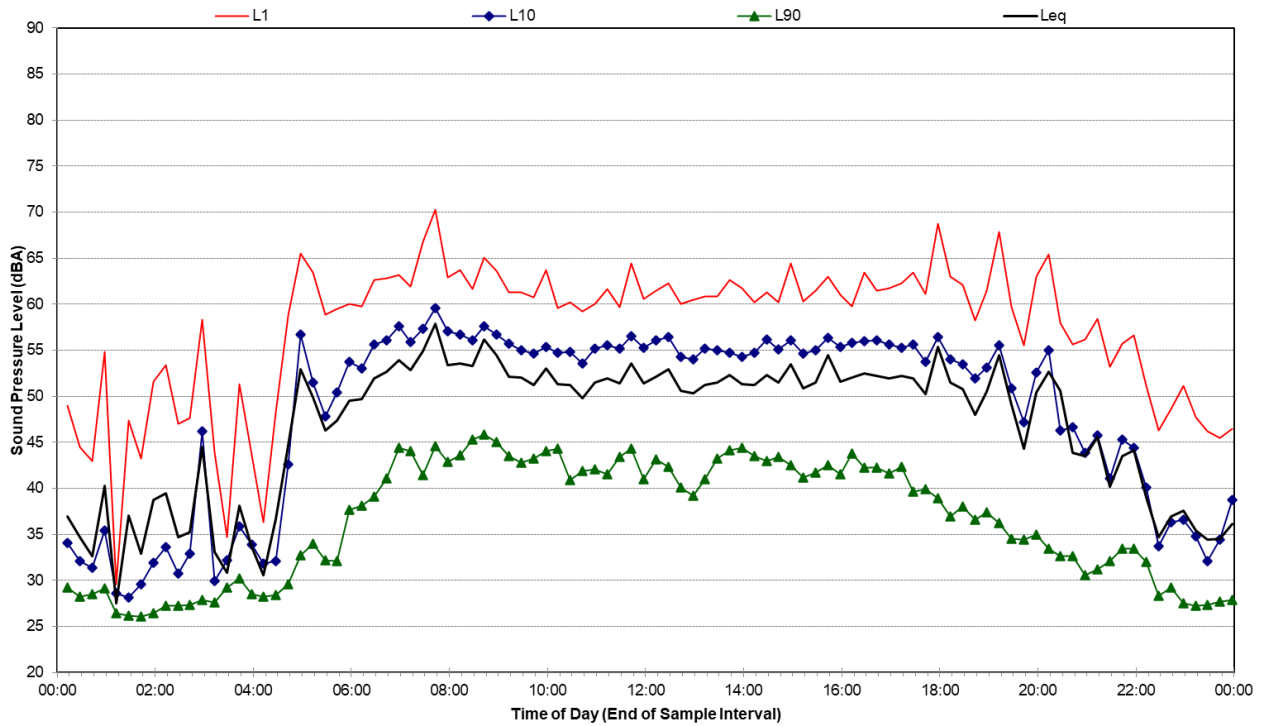
Statistical Ambient Noise Levels

20 Heradale Parade - Wednesday, 30 November 2022



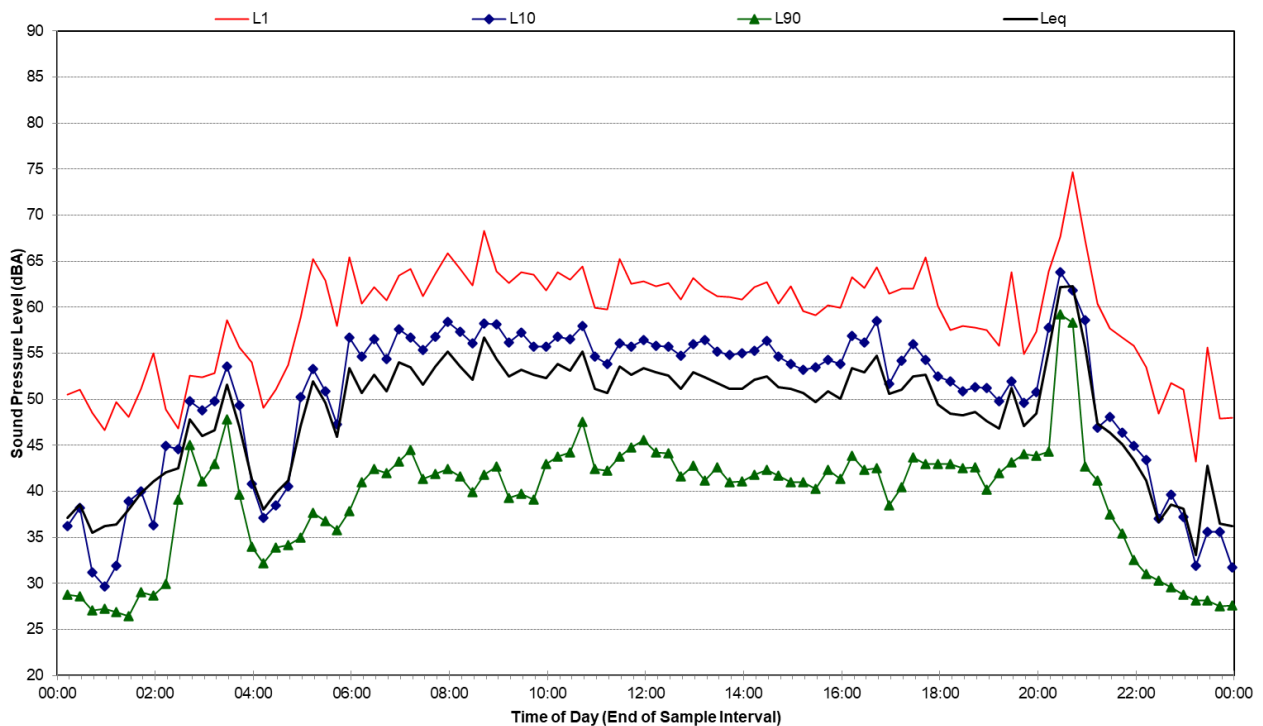
Statistical Ambient Noise Levels

20 Heradale Parade - Thursday, 1 December 2022



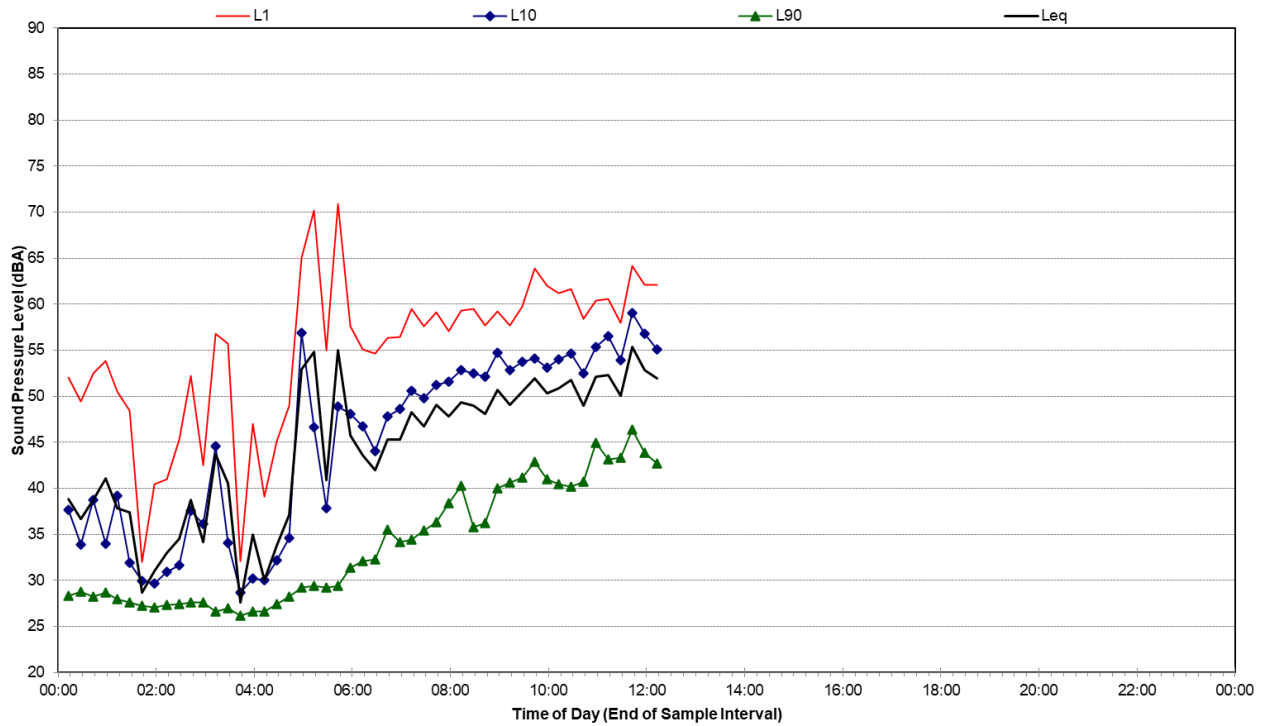
Statistical Ambient Noise Levels

20 Heradale Parade - Friday, 2 December 2022



Statistical Ambient Noise Levels

20 Heradale Parade - Saturday, 3 December 2022



Appendix C:

Example AS 3671 Calculations

[illegible][illegible]

AS3671 Calculation of Insulation Requirements for Building Elements									
Project Number	<div>670.30141</div>								
Room Description	<div>Corner Bedroom (GF, L1, L2)</div>								
Maximum Design External Exposure (dBA)	<div>52 dBA LAeq(9hour) - night-time</div>								
Design Internal Level (dBA)	<div>35</div>								
Façade reflection included?	<div>Yes</div>								
Floor Area (sq.m)	<div>14.0</div>								
Room height (m)	<div>2.7</div>								
Reverberation Time (T60)	<div>0.8</div>								
Number of Components	<div>2</div>								
Component Name	Outside Noise Level, dBA	Area (sq.m)	TNR	Sc/Sf	TNAc	Rw	Contribution	Alternative Selection RwTNAcContribution	
Windows	52	12.3	17	0.9	22	28	32	262034	
Wall	52	7.9	17	0.6	20	26	32	50448	
			0	0.0	0	0	0	000	
			0	0.0	0	0	0	000	
			0	0.0	0	0	0	000	
			0	0.0	0	0	0	000	
			0	0.0	0	0	0	000	
			0	0.0	0	0	0	000	
			0	0.0	0	0	0	000	
			0	0.0	0	0	0	000	
			0	0.0	0	0	0	000	
			0	0.0	0	0	0	000	
				Overall Internal Noise		35		Overall Internal Noise Level:	34
				Internal Noise Level is		1 better		with proposed system	

AS3671 Calculation of Insulation Requirements for Building Elements												
Project Number		670.30141										
Room Description		Living Room (GF)										
Maximum Design External Exposure (dBA)		58 dBA LAeq(15hour) - daytime										
Design Internal Level (dBA)		40										
Façade reflection included?		Yes										
Floor Area (sq.m)		83.8										
Room height (m)		2.7										
Reverberation Time (T60)		1.5										
Number of Components		5										
									Alternative Selection			
Component Name	Outside Noise Level, dBA	Area (sq.m)	TNR	Sc/Sf	TNAc	Rw	Contribution		Rw	TNAc	Contribution	
Windows - North	56	31.4	16	0.4	24	30	33		26	20	37	
Wall - North	56	0.4	16	0.0	5	11	33		50	44	-6	
Roof	56	83.8	16	1.0	28	34	33		45	39	22	
Windows - East	58	13.9	18	0.2	22	28	33		26	20	35	
Wall - East	58	5.2	18	0.1	18	24	33		50	44	7	
			0	0.0	0	0	0			0	0	
			0	0.0	0	0	0			0	0	
			0	0.0	0	0	0			0	0	
			0	0.0	0	0	0			0	0	
Overall Internal Noise							40	Overall Internal Noise Level:				39
Internal Noise Level is							1	better	with proposed system			

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