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21st May 2025

MELVILLE HEALTH, AGED AND COMMUNITY CARE (WA) PTY LTD
C/- TOTAL PROJECT MANAGEMENT
Level 6, 1008 Hay St
PERTH WA 6000

Attention: Tome Nunes

MELVILLE COMMUNITY & RESIDENTIAL AGED CARE FACILITY
CORNER OF CANNING HIGHWAY & STOCK ROAD, PALMYRA

ADDENDUM TO DEVELOPMENT APPLICATION ACOUSTIC REPORT

This document serves as an addendum to the Development Application Acoustic Report dated December 8, 2022, for the proposed Melville Community & Residential Aged Care Facility.

1. TRAFFIC NOISE INTRUSION (STATE PLANNING POLICY 5.4)

The aforementioned acoustic report addressed the mandatory acoustic requirements for the project, including:

- Traffic noise intrusion (compliance with State Planning Policy 5.4);
- Part F5 'Sound Transmission and Insulation of NCC 2019 (Amendment 1); and,
- Environmental noise emissions (compliance with the Environmental Protection (Noise) Regulations 1997.

This addendum includes an updated traffic noise assessment in accordance with State Planning Policy 5.4 'Road and Rail noise'. This was necessary given that the previous traffic noise measurements are now more than 2 years old, and there have been changes to the building form (eg additional storey added to the Independent Living Units building).

Please note that there is no report update required in relation to the acoustic requirements of the NCC/BCA and the Environmental Protection (Noise) Regulations 1997, therefore Sections 4 and 5 of the previously issued DA Acoustic Report are still applicable. Although the acoustic requirements within the NCC/BCA are now in Part F7 of NCC 2022 (the requirements were in Part F5 of NCC 2019 Amendment 1), the Performance Requirements and Deemed-to-Satisfy provisions are unchanged.

2. UPDATED TRAFFIC NOISE INTRUSION ASSESSMENT (STATE PLANNING POLICY 5.4)

An updated traffic noise assessment for the residential spaces of the development has been carried out, in full accordance with the State Planning Policy 5.4. The following methodology was undertaken:

- New traffic noise level measurements were conducted for Canning Highway and Stock Road. These measurements were undertaken on the same day of the week and the same time as the previous measurements undertaken in 2022;
- The $L_{Aeq(Day)}$ and $L_{Aeq(Night)}$ levels were obtained from the measured data by correlating with the updated average hourly traffic count data;

- The 3D noise model of the proposed development was updated within the *SoundPLAN* model, based on the updated architectural drawings prepared by Hassell;
- The traffic noise sources within the model were recalibrated to match the measured/determined L_{Aeq} levels;
- The calibrated traffic noise levels ($L_{Aeq(Day)}$ and $L_{Aeq(Night)}$) were then adjusted for future traffic flows (20 year horizon) in accordance with State Planning Policy 5.4;
- The noise model was then used to determine the relevant traffic noise levels reaching the façade of the suites of the Residential Aged Care suites and Independent Living Units; and,
- Revised octave-band noise intrusion calculations were undertaken to determine the minimum sound reduction requirements for the façade such that the internal noise levels are compliant with Australian Standard 2107:2016.

2.1 Noise Targets

Section 6.1 of State Planning Policy 5.4 establishes the following Noise Targets applicable to the residential components of the development:

Time of day	Outdoor Noise Target	Indoor Noise Target (Design Sound Level of AS 2107:2016)
Day (6 am – 10 pm)	$L_{eq(Day)}$ 55 dB(A)	$L_{eq(Day)}$ 40 dB(A)
Night (10 pm – 6 am)	$L_{eq(Night)}$ 50 dB(A)	$L_{eq(Night)}$ 35 dB(A)

Table 1 – Noise level criteria from State Planning Policy 5.4

In relation to the outdoor noise targets, the objective of the policy is to achieve:

- Acceptable indoor noise levels in noise sensitive areas (eg sleeping areas and living rooms of the RACF suites and ILUs) and,
- A reasonable degree of acoustic amenity in at least one outdoor living area on each residential lot.

2.2 Traffic noise level measurements

Given that the previous traffic noise level measurements were conducted late November 2022, fresh traffic noise level measurements were undertaken. The noise level measurements were conducted on Monday May 12, 2025 given that the previous measurements were undertaken on a Monday. The noise level measurements were conducted at the same times of day and the same locations as the previous measurements. The measurement locations are shown in Figure 1 on the following page.

The noise level measurements were conducted on site using a NATA calibrated Cirrus Optimus CR199B (serial number G061705). Calibration certificates are available upon request.

2.2.1 *Measured traffic noise levels*

The measured octave-band traffic noise levels are provided in Table 2.

Measurement location	Time of day	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	L_{eq} dB(A)
Canning Highway (at 10 metres)	4:00 pm to 4:30 pm	72.2	67.8	63.2	62.8	59.9	54.7	49.5	**64.6**
	10:00 pm to 10:30 pm	64.5	62.5	57.5	52.5	51.6	46.3	39.5	**56.3**
Stock Road (at 5 metres)	4:30 pm to 5:00 pm	68.7	63.3	60.8	60.1	60.9	55.7	48.6	**64.1**
	10:30 pm to 11:00 pm	59.6	54.5	51.8	51.1	51.9	46.5	40.8	**55.1**

Table 2 – Measured octave-band traffic noise levels

The measured traffic noise levels from Canning Highway are slightly higher than the measurements conducted in 2022. This is likely due to less people working from home compared to 2022. However the Stock Road traffic noise levels were marginally lower compared to 2022.

Figure 1 – Noise measurement locations

2.2.2 Current $L_{Aeq(Day)}$ and $L_{Aeq(Night)}$ levels

Using the attended noise level measurements in Table 1, it is possible to determine the current $L_{Aeq(Day)}$ and $L_{Aeq(Night)}$ levels by correlating the data with the hourly traffic volumes obtained from the Main Roads Traffic Map. A relationship was determined between the traffic volume between 4 pm and 5 pm and the measured traffic noise level at this time, then the current $L_{Aeq(Day)}$ figure was calculated by using the logarithmic correlation for the traffic flow volumes between 6 am and 10 pm. Similarly, a correlated relationship was determined using the traffic volume data between 10 pm and 11 pm and the measured traffic noise levels at this time, to formulate the $L_{Aeq(Night)}$ level between 10 pm and 6 am. The hourly traffic volume for Canning Highway and Stock Road adjacent the site are provided in Appendix A (taken from the Main Roads Traffic Map).

The current $L_{Aeq\ (Day)}$ and $L_{Aeq(Night)}$ levels are provided in Table 3 below.

Time of day	Canning Highway (Position 1)	Stock Road (Position 2)
Day (6 am – 10 pm)	$L_{eq(Day)}$ 63.3 dB(A)	$L_{eq(Day)}$ 62.9 dB(A)
Night (10 pm – 6 am)	$L_{eq(Night)}$ 55.7 dB(A)	$L_{eq(Night)}$ 52.6 dB(A)

Table 3 – Current/existing $L_{Aeq(Day)}$ and $L_{Aeq(Night)}$ levels at measurement locations

2.3 Update of existing traffic noise model

The traffic noise model was updated within the *SoundPLAN software*.

Table 4 on the following page establishes the parameters used for the updated traffic noise sources.

Parameter	Canning Highway (west of Stock Road)	Stock Road (south of Canning Highway)
Road surface	Dense Graded Asphalt	Dense Graded Asphalt
Vehicle speed	60 km/hr	60 km/hr
2024/2025 traffic flow (24 hour volume) – from the MRWA Traffic Map	24,835	14,628
Percentage of heavy vehicles	7.2%	6.3%

Table 4 – Traffic noise source parameters used for the calibration model

The existing traffic noise model was calibrated to the measured $L_{Aeq(Day)}$ levels at the Canning Highway and Stock Road measurement locations (Table 3 of this addendum). The associated noise contour plan is presented in Appendix B (Scenario 1 – calibrated noise model). Please note this is calibrated to the existing undeveloped site with the exiting community buildings, and therefore the noise contours do not include the +2.5 dB correction for façade reflection (however the noise model does include acoustic reflections off the surrounding existing buildings).

2.3.1 *Increase in traffic noise based on future traffic flows*

The 'Implementation Guidelines' of State Planning Policy 5.4 requires the traffic noise model to account for the potential increase in traffic counts over a 20 year horizon. A request for forecast traffic counts was sent to the Main Roads WA Transport Modelling Team on May 7, 2025. We received an e-mail reply from Suk Ling Chang (Transport Modelling Analyst) on May 8 advising that there would be a 3 to 4 week delay in processing of our request due to the Transport Modelling team undertaking a 3-week training programme. Unfortunately the forecast traffic counts were not received prior to the issuing of this report.

In the absence of revised forecast traffic flows for Canning Highway and Stock Road, it has been necessary to utilise the predicted traffic noise increase for the 20 year horizon from the previous traffic noise assessment (2022). As such the updated traffic noise model has incorporate the following traffic noise increases to account for the 20 year horizon:

Road		Resultant increase in traffic noise levels
Canning Highway	East bound West bound	+ 1.9 dB + 1.8 dB
Stock Road	North bound South bound	+ 2.1 dB +2.1 dB

Table 5 – Potential traffic noise increase for the 20-year horizon

2.3.2 *Noise modelling results*

The Scenario 2 noise contour plan in Appendix B illustrates the predicted $L_{Aeq\ (Day)}$ traffic noise levels across the site, taking into account the 20 year horizon and incorporating the updated architectural design.

The traffic noise level reaching each floor level of both buildings around all facades is noted on the contour plan, based on information retrieved from the point receivers attached to the facades within the noise model.

The $L_{Aeq(Night)}$ traffic noise contours (and façade noise levels) are also provided in Appendix B.

The forecast traffic noise levels at many of the façades exceeds the *Outdoor Noise Targets* outlined in Section 2.1. Therefore an acoustically attenuated façade will be required for some of the units such that the internal noise levels are compliant with the *Design Sound Levels* of AS 2107:2016.

3. MINIMUM REQUIRED BUILDING ENVELOPE CONSTRUCTION FOR THE RACF SUITES AND THE INDEPENDENT LIVING UNITS

Rather than using the 'Quiet House' requirements outlined in Table 3 of the Guidelines of State Planning Policy 5.4, a detailed noise intrusion assessment has been undertaken for the Residential Aged Care Suites and the Independent Living Units (ILU). The 'Quiet House' requirements are generic in nature and do not take into account the actual size of external glazing suites or the likely level of furnishings within the interior spaces. The detailed noise intrusion assessment has taken into account of the following factors:

- The forecast traffic noise level incident on the façade of each *sole-occupancy unit*;
- Octave band noise intrusion calculations have been undertaken using the frequency/spectrum shape provided in Table 1 of this rep;
- The required internal noise levels provided in Table 2 of this report. In relation to the ILUs, the Bed Rooms have been assessed using the $L_{Aeq(Night)}$ traffic noise levels, and the living areas have been assessed using the $L_{Aeq(Day)}$ traffic noise levels. Although the RACF suites are primarily a sleeping area, these have been assessed using the $L_{Aeq(Day)}$ traffic noise levels given that residents will occupy their rooms during the daytime. This is a conservative approach given that the $L_{Aeq(Day)}$ traffic noise levels are more than 5 dB higher than the $L_{Aeq(Night)}$ levels;
- The size of the sliding doors and external windows proposed for each suite/units; and,
- The likely extent of furnishing within the rooms (eg beds within sleeping areas, lounge suites within living areas, etc).

The detailed noise intrusion assessments have determined that the following minimum building envelope construction is required for the RACF suites and the Independent Living Units:

3.1 External glazing

The minimum sound reduction required for the external glazing is illustrated in Appendix C.

It is important for all parties to be aware that the stated $R_w + C_{tr}$ requirements for the glazed are the entire suite inclusive of glass, framing, and seals. Glass only acoustic ratings must not be used for the purpose of glazing selection and approvals.

The marked-up plans in Appendix C refer to three grades of acoustic performance, which are outlined in the table below.

Minimum sound reduction performance (whole of window value)	Example of compliant glazing systems
$R_w + C_{tr}$ 27 (R_w 30)	Single 6.38 mm laminated glass in a sliding suite with high quality seals
$R_w + C_{tr}$ 31 (R_w 34)	Single 10.38 mm laminated glass or 10.5 mm VLAM Hush glass in a sliding suite with high quality seals *OR* Double glazed sliding door with one pane of 8.5 mm VLam Hush glass and one pane of 6.38 mm laminated glass, with high quality seals
$R_w + C_{tr}$ 34 (R_w 37)	Single 12.5 mm VLam Hush glass *OR* Double glazed sliding door with one pane of 10.5 mm VLam Hush glass and one pane of 6.5 mm VLam Hush glass, with high quality seals

Table 6

The glazing that is not colour coded in Appendix C does not require an acoustic specification to satisfy State Planning Policy 5.4. However, we recommend that all external glazing be specified with a minimum sound reduction of R_w + Ctr 27 rating to provide attenuation of other external noise sources (eg noise from people walking around the 'walking loop' and noise from adjacent commercial premises such as Melville Mazda).

3.2 External facade

The solid/non-glazed facades of the RACF suites and Independent Living Units shall achieve a minimum sound reduction of $R_w + C_{tr}$ 38. The following light-weight wall constructions are provided for consideration:

- 9 mm fibre-cement cladding + top-hats + 92 mm steel studs with R2.5 glasswool batts + 13 mm impact rated plasterboard; or,
- Profiled metal cladding + 15 mm plywood + top-hats + 92 mm steel studs with R2.5 glasswool batts + 13 mm impact rated plasterboard.

Note – Given that the facades of the habitable rooms are predominately glazed, the noise intrusion is mainly governed by the glass specification.

3.3 Notification on title for the Independent Living Units

As stated in the Development Application Acoustic Report, if the Independent Living Units will be Class 2 *sole-occupancy units*, it will be necessary for a notification on the title of the lots advising prospective purchasers of the potential noise impact from Canning Highway and Stock Road. The recommended wording for the Notification is as follows:

> *"This lot is in the vicinity of a transport corridor and is affected by road transport noise. Road transport noise levels may rise or fall over time depending on the type and volume of traffic."*

Regards

Benjamin Farrell
Director, *MAAS*
GABRIELS HEARNE FARRELL PTY LTD
Member Firm – Association of Australian Acoustical Consultants

Attachments:

Appendix A – Hourly Traffic Counts for Canning Highway and Stock Road
Appendix B – Updated Noise Contour Plans for traffic noise assessment
Appendix C – Marked-up plans itendifying the minimum required sound reduction performance of the external glazing

APPENDIX A

SITE 4549

Hourly Volume

Canning Hwy (H013)

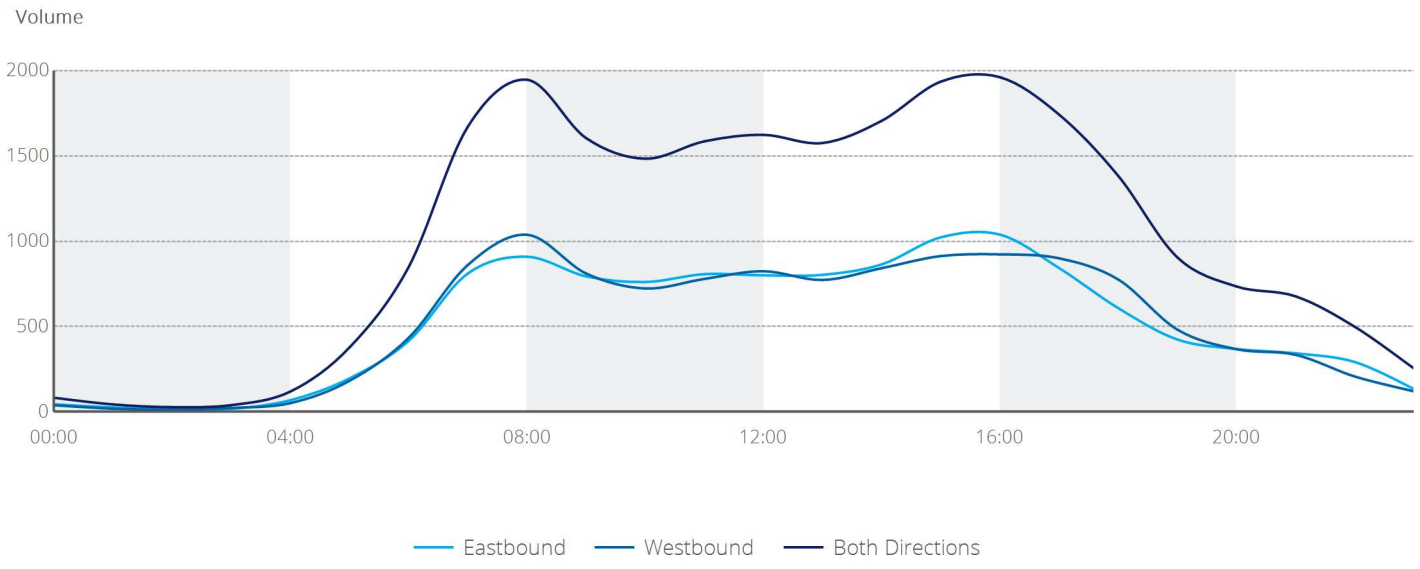
West of Stock Rd (SLK 12.51)

2024/25
Monday to Friday

	All Vehicles			Heavy Vehicles			
	EB	WB	Both	EB	WB	Both	%
00:00	44	38	82	3	3	6	7.3
01:00	25	18	43	1	1	2	4.7
02:00	15	12	27	3	2	5	18.5
03:00	17	22	39	0	4	4	10.3
04:00	68	51	119	7	3	10	8.4
05:00	196	182	378	21	13	34	9.0
06:00	416	434	850	58	39	97	11.4
07:00	811	861	1672	81	78	159	9.5
08:00	909	1038	1947	68	85	153	7.9
09:00	794	811	1605	71	76	147	9.2
10:00	761	723	1484	68	68	136	9.2
11:00	807	779	1586	59	77	136	8.6
12:00	800	824	1624	58	70	128	7.9
13:00	803	773	1576	60	60	120	7.6
14:00	864	842	1706	56	61	117	6.9
15:00	1023	913	1936	59	60	119	6.1
16:00	1039	923	1962	48	56	104	5.3
17:00	843	900	1743	31	49	80	4.6
18:00	608	776	1384	34	46	80	5.8
19:00	424	482	906	25	26	51	5.6
20:00	368	367	735	20	22	42	5.7
21:00	343	334	677	16	14	30	4.4
22:00	292	207	499	15	9	24	4.8
23:00	135	120	255	9	5	14	5.5
TOTAL	12405	12430	24835	871	927	1798	7.2

Peak Statistics

AM	TIME	08:00	07:45	07:45	06:30	07:45	07:00
	VOL	909	1056	1956	84	86	159
PM	TIME	16:15	16:30	16:15	14:15	12:15	12:00
	VOL	1049	926	1965	63	70	128



mainroads WESTERN AUSTRALIA

SITE 0516

Hourly Volume

Stock Rd (1190001)

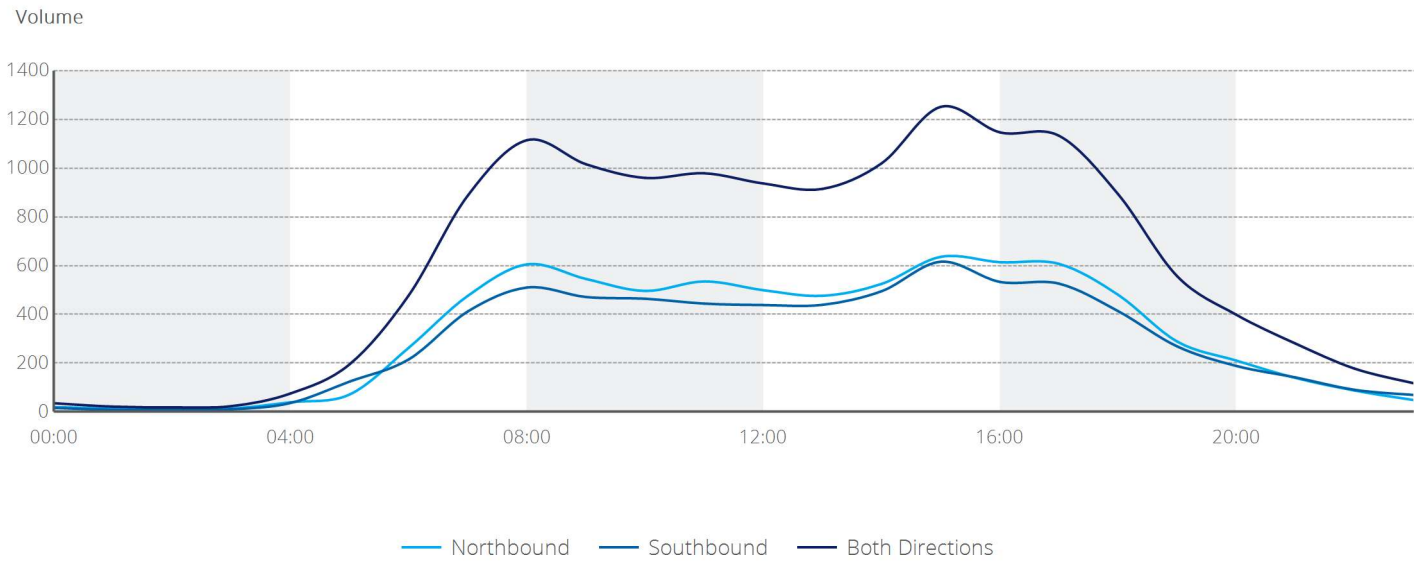
South of Canning Hwy (SLK 2.19)

2024/25
Monday to Friday

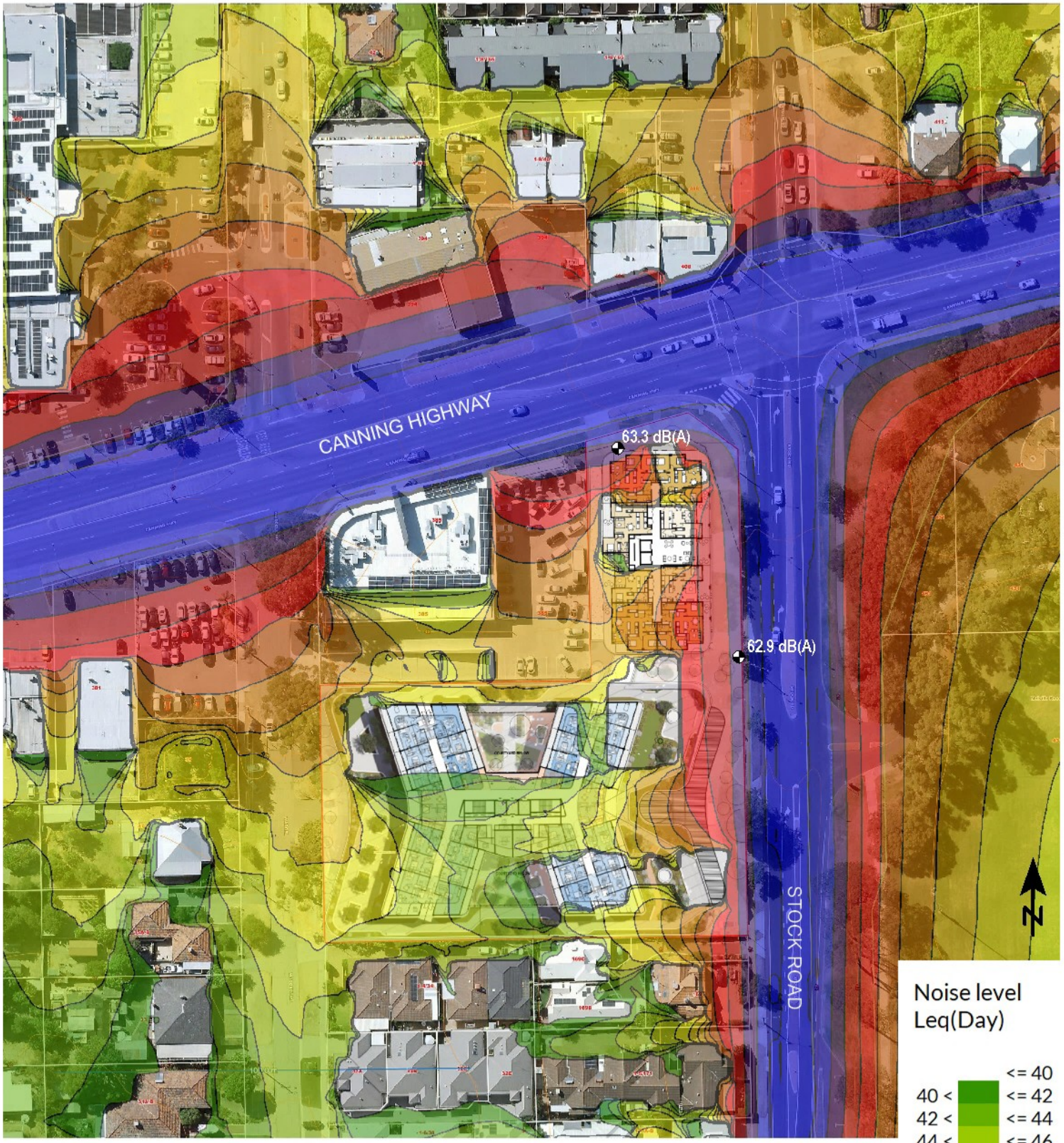
	All Vehicles			Heavy Vehicles			
	NB	SB	Both	NB	SB	Both	%
00:00	19	16	35	1	1	2	5.7
01:00	13	8	21	0	1	1	4.8
02:00	9	9	18	0	1	1	5.6
03:00	13	10	23	2	1	3	13.0
04:00	39	36	75	6	5	11	14.7
05:00	71	124	195	9	12	21	10.8
06:00	263	215	478	23	24	47	9.8
07:00	476	412	888	51	29	80	9.0
08:00	605	510	1115	46	40	86	7.7
09:00	545	471	1016	55	28	83	8.2
10:00	496	464	960	35	38	73	7.6
11:00	535	444	979	41	33	74	7.6
12:00	499	438	937	30	35	65	6.9
13:00	476	439	915	30	35	65	7.1
14:00	525	495	1020	25	29	54	5.3
15:00	636	616	1252	40	30	70	5.6
16:00	614	533	1147	32	25	57	5.0
17:00	607	526	1133	33	16	49	4.3
18:00	480	413	893	14	11	25	2.8
19:00	288	268	556	9	11	20	3.6
20:00	210	188	398	5	7	12	3.0
21:00	139	141	280	5	4	9	3.2
22:00	87	90	177	2	1	3	1.7
23:00	48	69	117	1	3	4	3.4
TOTAL	7693	6935	14628	495	420	915	6.3

Peak Statistics

AM	TIME	08:15	07:45	08:15	09:00	08:00	08:30
	VOL	619	510	1126	55	40	88
PM	TIME	15:00	15:00	15:00	15:00	12:45	12:45
	VOL	636	616	1252	40	39	72



MELVILLE COMMUNITY + RESIDENTIAL AGED CARE FACILITY (HALL & PRIOR)
TRAFFIC NOISE ASSESSMENT - STATE PLANNING POLICY 5.4 'ROAD & RAIL NOISE'
MAY 2025

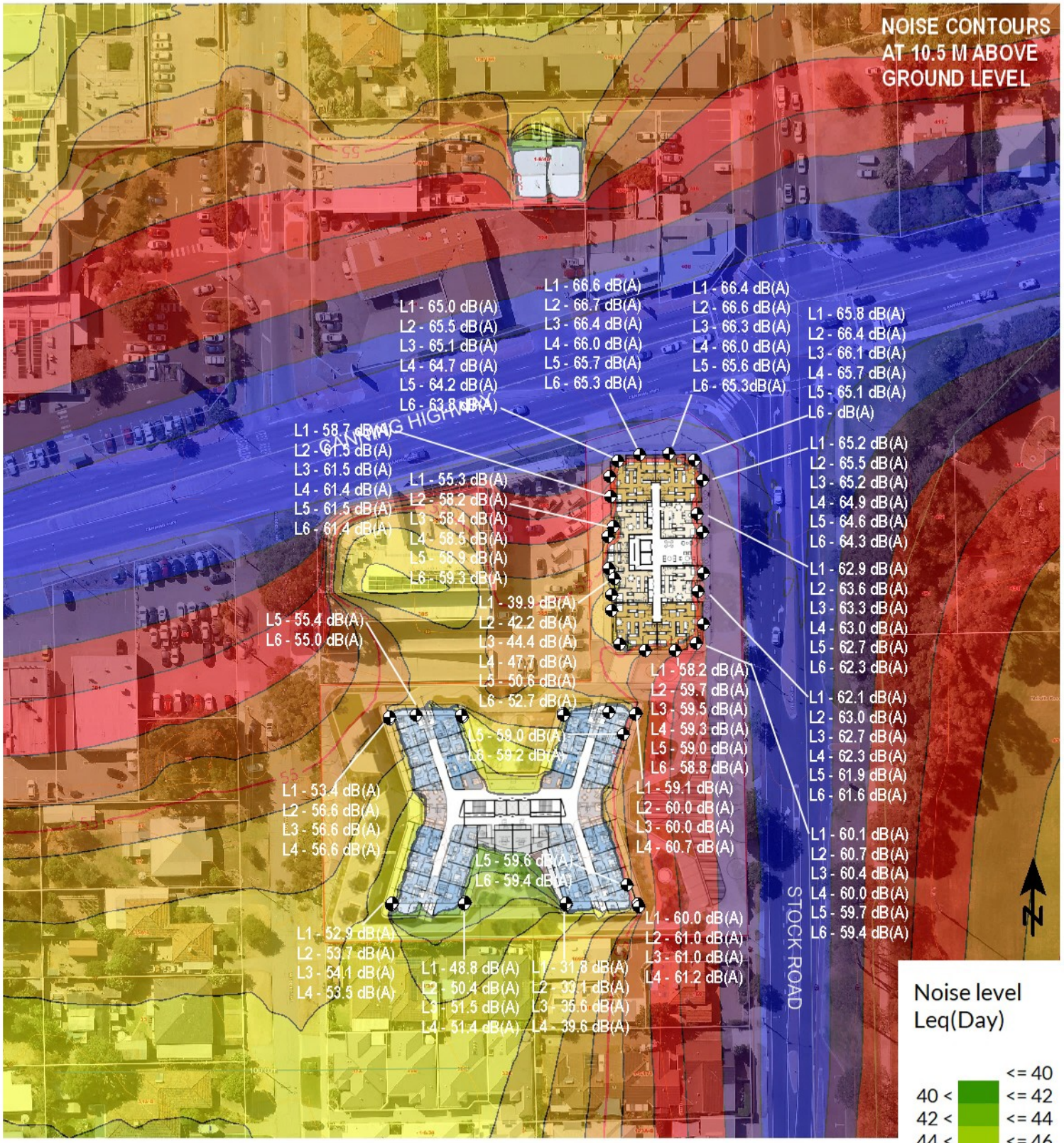


SCENARIO 1

CALIBRATION OF NOISE MODEL TO MEASURED LEQ(DAY) TRAFFIC NOISE LEVELS
(CALIBRATED AT THE TWO MEASUREMENT POSITIONS)

GABRIELS HEARNE FARRELL PTY LTD

MELVILLE COMMUNITY + RESIDENTIAL AGED CARE FACILITY (HALL & PRIOR)
TRAFFIC NOISE ASSESSMENT - STATE PLANNING POLICY 5.4 'ROAD & RAIL NOISE'
MAY 2025



SCENARIO 2

LEQ(DAY) TRAFFIC NOISE LEVELS, BASED ON FORECAST TRAFFIC FLOWS (20 YEAR HORIZON)

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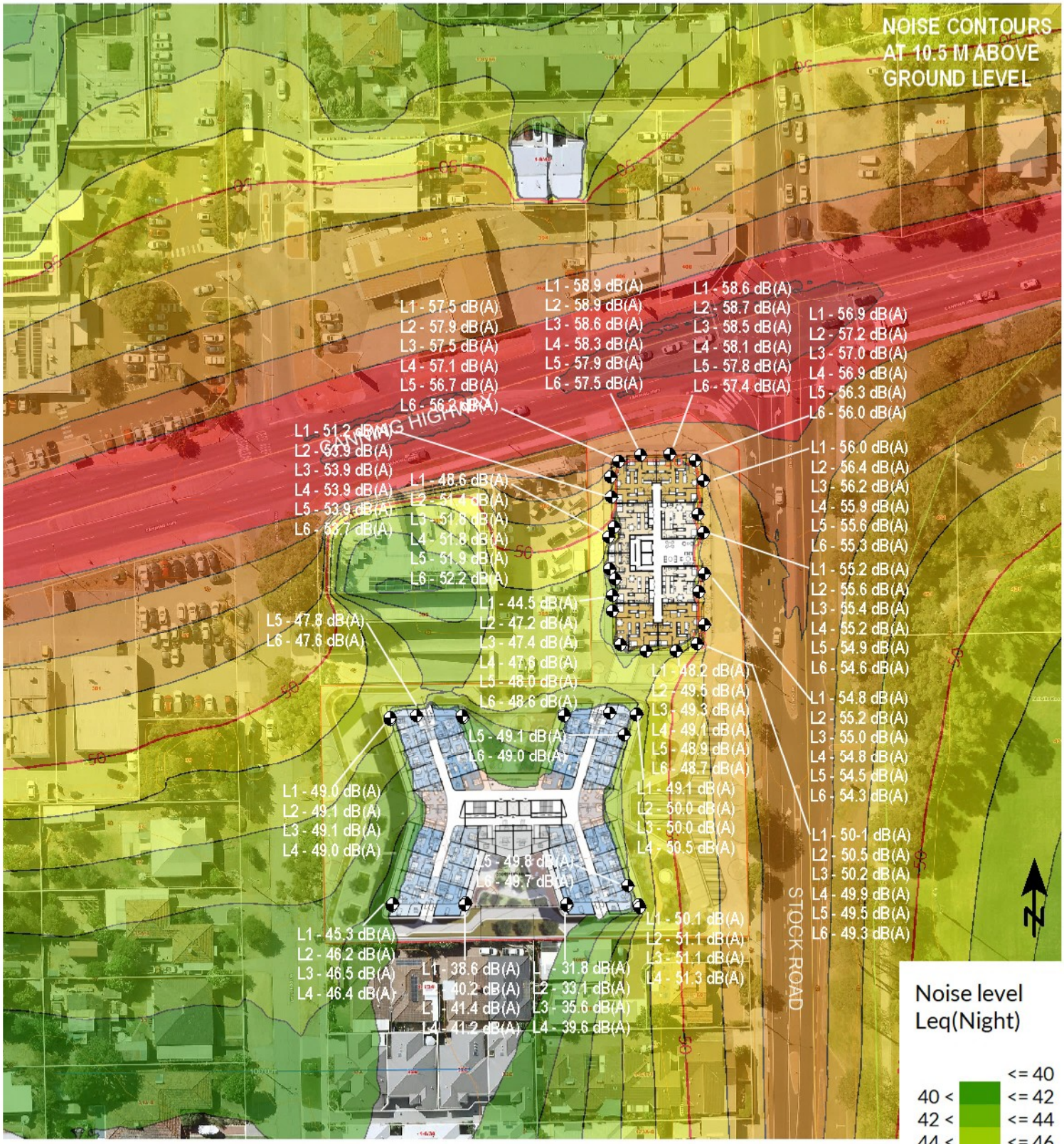
TRAFFIC NOISE ASSESSMENT - STATE PLANNING POLICY 5.4 'ROAD & RAIL NOISE'
MAY 2025



SCENARIO 3

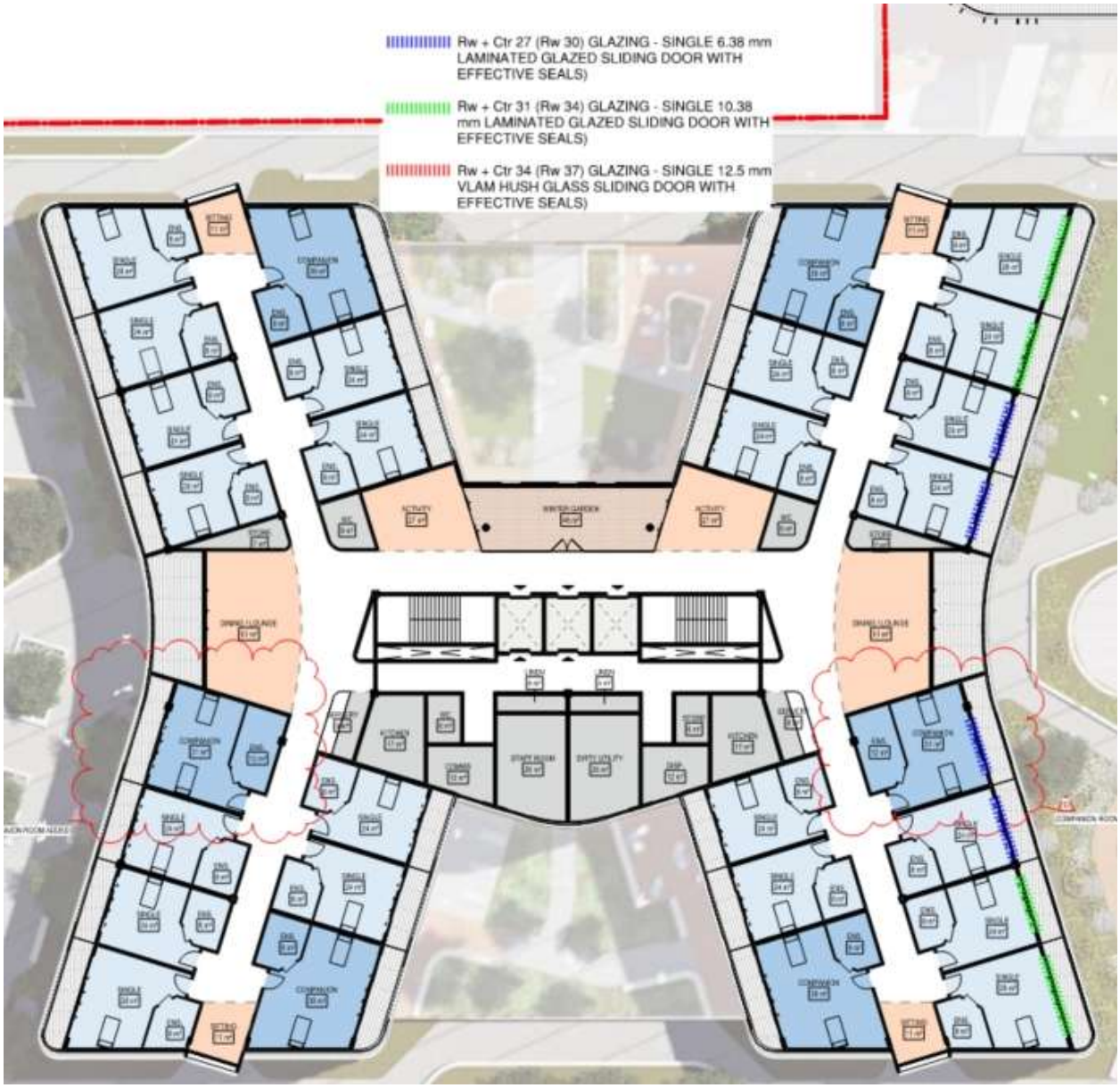
LEQ(NIGHT) TRAFFIC NOISE LEVELS, BASED ON FORECAST TRAFFIC FLOWS (20 YEAR HORIZON)

GABRIELS HEARNE FARRELL PTY LTD

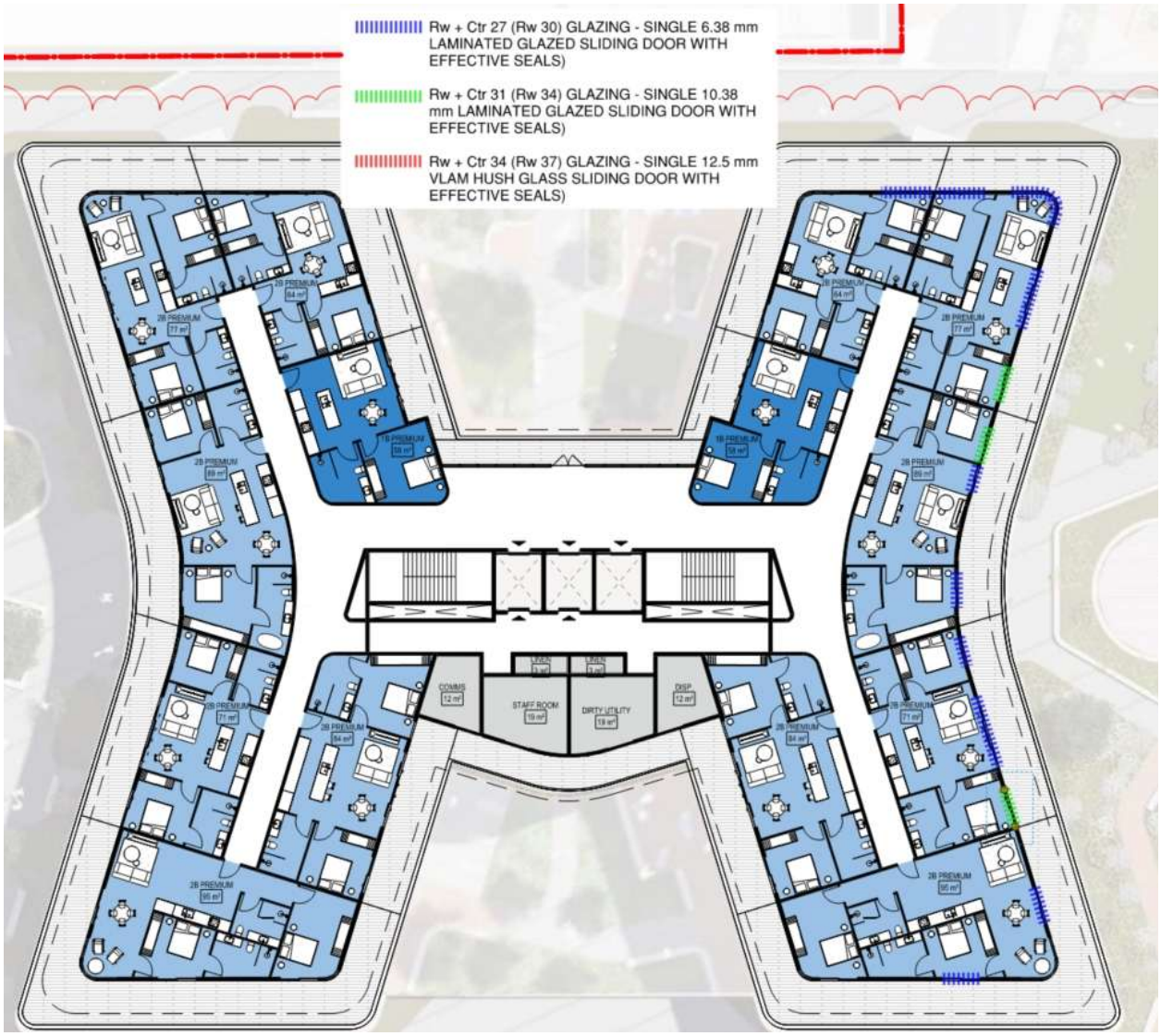
APPENDIX C

MINIMUM REQUIRED SOUND REDUCTION FOR EXTERNAL GLAZING

Independent Living Units – all levels



RACF – Levels 2 to 4



RACF – Levels 5 & 6