RODNEY STEVENS ACOUSTICS

REPORT R240654R1

Revision 4

Noise Impact Assessment

Proposed Mixed-Use Development

93 - 107 Cecil Ave, Castle Hill

PREPARED FOR:

ALTON PROPERTY GROUP

29 January 2026

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93 - 107 Cecil Ave, Castle Hill

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R240654R1	Revision 4	29 January 2026	Dani Awad	Desmond Raymond	Desmond Raymond

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1 INTRODUCTION

Rodney Stevens Acoustics Pty Ltd (RSA) has been engaged by Alton Property Group to conduct a traffic noise impact assessment in support of a Development Application (DA) for a mixed-use development, located at 93 - 107 Cecil Ave, Castle Hill. (This Rev4 incorporates the Amended DA Rev C plans dated 19/12/25).

This assessment addresses the traffic and commercial noise impacts from Cecil Avenue and the surrounding area on the amenity of the development. A preliminary DA mechanical plant assessment in addition to a Road Noise Policy and Car park assessment also form part of this report

This assessment addresses the comments raised by the Department of Planning, Housing and Infrastructure in the Request for Additional Information dated 14 May 2025 in relation to the Noise Impact Assessment, as follows:

Noise Impact Assessment

32. The Department notes that noise loggers, required to measure background noise, are located within the boundary of the site. Additionally, the sensitive receivers surrounding the site have not been identified. Consequently, the Department requires you to: **Please refer to Section 2.2 where this has been addressed.**

• *justify the location of the noise loggers used to measure background noise, including why loggers have not been placed on surrounding residential sites;* **Please refer to Section 3.1 and 3.2 where this has been addressed.**

• *include an assessment of impacts on the sensitive receivers surrounding the site with Project Noise Trigger Levels at these locations (rather than measured at the site boundary);* **Please refer to Section 3.1 and 3.2 where this has been addressed**.

• *include an assessment of impacts on the residents due to the communal open space area usage and public plaza / through-site link usage;* **These will be assessed during the detailed design stage when the necessary information such as patron numbers and patron activities/movements have been determined.**

• *include an assessment of impacts on the surrounding residents and the future occupants due to the proposed non-residential uses.* **These will be assessed during the detailed design stage where the necessary data, schedules and plans are available. Currently it would be redundant and inaccurate to carry out this assessment as the non-residential premises of the site have not been fully determined in any assessable capacity**.

An explanation of common acoustic terms is provided in Appendix A.

2 PROPOSED DEVELOPMENT

2.1 Development Site

The proposed development is located at 93 - 107 Cecil Ave, Castle Hill. The site is bounded by majority residential receivers to the east, south and west with mixed premises to the north and a cemetery to the south west. Figure 2-1 shows an aerial image of the site area and logger locations.

Figure 2-1 Site Location

2.2 Proposed Development

The proposal consists of the construction of multiple mixed-use buildings ranging from 23 to 35 levels, comprising of residential and commercial uses. The proposed layout of the site is presented in Appendix D.

The following figure presents the proposed development and all sensitive receivers. Table 2-1 shows the address of each affected receiver

Figure 2-2 Sensitive Receiver Location

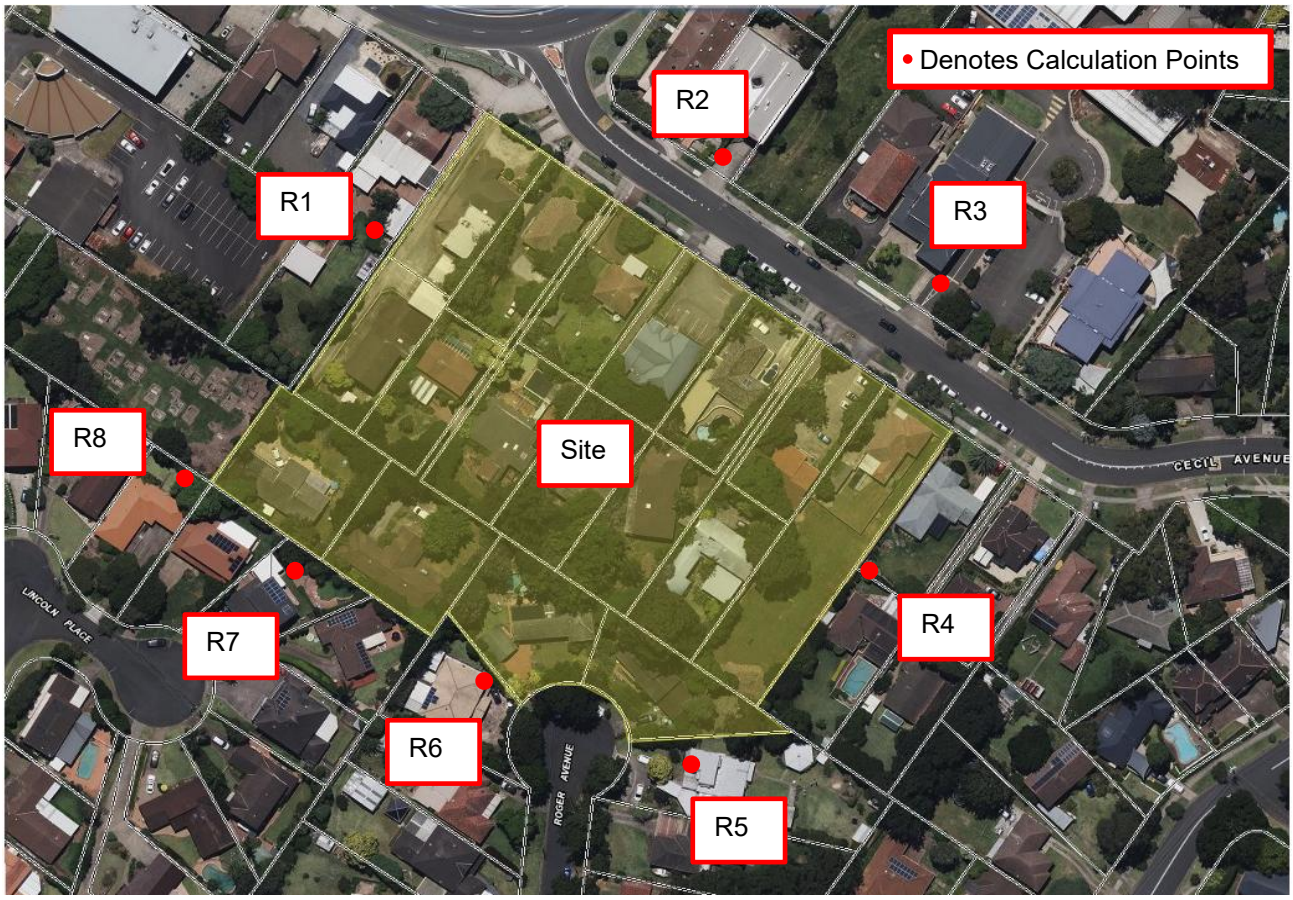

Table 2-1 Sensitive Receivers

Receiver	Number of Levels	Sensitive Receiver's Address
R1	1	91 Cecil Avenue
R2	2	80 Cecil Ave
R3	1	84 Cecil Ave
R4	1	109 Cecil Ave
R5	2	7 Roger Ave
R6	2	8 Roger Ave
R7	1	22 Lincoln Place
R8	1	18 Lincoln Place

3 BASELINE NOISE SURVEY

3.1 Unattended Noise Monitoring

In order to characterise the existing acoustical environment of the area, unattended noise monitoring was conducted between Tuesday 15th October and Tuesday 29th October 2024 at the logging locations shown in Figure 2-1. Three noise loggers were set up on site.

- Logger 1 was located at the north western boundary of the site and assesses ambient noise from Cecil Ave and nearby mixed premises.
- Logger 2 was located on the north eastern boundary and assesses ambient noise from Cecil Ave east.
- Logger 3 was located at the south western boundary of the site, noise monitoring at this location is representative of the typical background ambient acoustic environment of the greater site.

Logger locations were selected with consideration to other noise sources which may influence readings, security issues for noise monitoring equipment and gaining permission for access from the landowners. **The 3 selected location's ambient logging results were deemed to be sufficient and yielded a conservative background noise level result close to the minimum assumed rated background noise level. This in turn will lead to a stricter criterion for the surrounding receivers. The chosen locations provided an accurate representation comparable to ambient noise levels at equivalent neighbouring receivers. This is in line with the NPfI Section 2.6 being "on or within the boundary", additionally due to the size of the site and number of receivers it would be logistically not feasible to measure at each affected receiver. The differences in logging at the adjacent neighbouring boundary for each position would be negligible.**

Instrumentation for the survey comprised of 3 RION NL-42EX environmental noise loggers (serial numbers 810779, 546393 and 184112) fitted with microphone windshields. Calibration of the loggers was checked prior to and following measurements. Drift in calibration did not exceed ±0.5 dB(A). All equipment carried appropriate and current NATA (or manufacturer) calibration certificates. Data removed due to inclement weather or extraneous events has been highlighted in Appendix B.

3.2 Data Processing

In order to assess noise emission from the Proposed Mixed-Use Development, the data obtained from the noise logger has been processed in accordance with the procedures contained in the NSW Environmental Protection Authority's (EPA) *Noise Policy for Industry* (NPfI, 2017) to establish representative noise levels that can be expected in the residential vicinity of the site. The monitored baseline noise levels are detailed in Table 3-1.

Table 3-1 Measured Baseline Noise Levels Corresponding to Defined NPfI Periods

Location	Measurement Descriptor	Measured Noise Level – dB(A) re 20 µPa		
		Daytime 7 am - 6 pm	Evening 6 pm – 10 pm	Night-time 10 pm – 7 am
Logger Location 1	RBL (Background)	47	42	33
Logger Location 2	RBL (Background)	40	40	30
Logger Location 3	RBL (Background)	38	38	30

Notes: All values expressed as dB(A) and rounded to nearest 1 dB(A);

L_{Aeq} Equivalent continuous (energy average) A-weighted sound pressure level. It is defined as the steady sound level that contains the same amount of acoustic energy as the corresponding time-varying sound.

L_{A90} Noise level present for 90% of time (background level). The average minimum background sound level (in the absence of the source under consideration).

3.1 Noise Intrusion (State Environmental Planning Policy (Transport and Infrastructure) 2021)

To assess noise intrusion into the Proposed Mixed-Use Development, the data obtained from the logger locations 1 and 2 has been processed to establish representative ambient noise levels at the facades most exposed to the surrounding traffic.

The time periods used for this assessment are as defined in the State Environmental Planning Policy (Transport and Infrastructure) 2021 and the Development near Rail Corridors and Busy Roads Interim Guideline. Results are presented below in Table 3-2.

Table 3-2 Traffic Noise Levels Corresponding to Defined SEPP 2021 Periods

Location	Period	External Noise Levels dB(A)
Logger Location 1	Day Time 7:00 am - 10:00 pm	$L_{Aeq(15hour)}$ 57
	Night Time 10:00 pm - 7:00 am	$L_{Aeq(9hour)}$ 53
Logger Location 2	Day Time 7:00 am - 10:00 pm	$L_{Aeq(15hour)}$ 56
	Night Time 10:00 pm - 7:00 am	$L_{Aeq(9hour)}$ 48

4 NOISE GUIDELINES AND CRITERIA

4.1 Road & Rail Noise Criteria

The determination of an acceptable level of traffic noise impacting the internal residential spaces requires consideration of the activities carried out within the space and the degree to which noise will interfere with those activities.

As sleep is the activity most affected by traffic noise, bedrooms are considered to be the most sensitive internal living areas. Higher levels of noise are acceptable in living areas without interfering with activities such as reading, listening to the television etc. Noise levels in utility spaces such as kitchens, bathrooms, laundries etc. can be higher.

4.2 State Environmental Planning Policy (Transport and Infrastructure) 2021

The NSW Government's State Environmental Planning Policy (Transport and Infrastructure) 2021 (SEPP (Transport and Infrastructure) 2021) was introduced to facilitate the delivery of infrastructure across the State by improving regulatory certainty and efficiency. The NSW Department of Planning and Infrastructure's "*Development near Rail Corridors and Busy Roads - Interim Guideline"* (the DP&I Guideline) of December 2008 provides noise criteria for residential and non-residential buildings. These criteria are summarised in Table 4-1.

Table 4-1 DP&I Interim Guideline Noise Criteria

Type of occupancy	Noise Level dB(A)	Applicable time period
Sleeping areas (bedroom)	35	Night 10 pm to 7 am
Other habitable rooms (excl. garages, kitchens bathrooms & hallways)	40	At any time

Note 1: Airborne noise is calculated as $L_{Aeq(15hour)}$ daytime and $L_{Aeq(9hour)}$ night-time

The following guidance is also provided in the DP&I Guideline:

> *"These criteria apply to all forms of residential buildings as well as aged care and nursing home facilities. For some residential buildings, the applicants may wish to apply more stringent design goals in response to market demand for a higher quality living environment.*
>
> *The night-time "sleeping areas" criterion is 5 dB(A) more stringent than the "living areas" criteria to promote passive acoustic design principles. For example, designing the building such that sleeping areas are less exposed to road or rail noise than living areas may result in less onerous requirements for glazing, wall construction and acoustic seals. If internal noise levels with windows or doors open exceed the criteria by more than 10 dB(A), the design of the ventilation for these rooms should be such that occupants can leave windows closed, if they so desire, and also to meet the ventilation requirements of the Building Code of Australia."*

The noise criteria presented in Section 4.2 and in Table 4-1 apply to a 'windows closed condition'. Standard window glazing of a building will typically attenuate noise ingress by 20 dB(A) with windows closed and 10 dB(A) with windows open (allowing for natural ventilation). Accordingly, the external noise threshold above which a dwelling will require mechanical ventilation is an $L_{Aeq(9hour)}$ 55 dB(A) for bedrooms and $L_{Aeq(15hour)}$ 60 dB(A) for other areas.

Where windows must be kept closed, the adopted ventilation systems must meet the requirements of the Building Code of Australia and Australian Standard 1668 – The use of ventilation and air conditioning in buildings.

4.3 Operational Noise Project Trigger Noise Levels

Responsibility for the control of noise emissions in New South Wales is vested in Local Government and the EPA. The EPA oversees the Noise Policy for Industry (NPfI) October 2017 which provides a framework and process for deriving project trigger noise level. The NPfI project noise levels for industrial noise sources have two (2) components:

- Controlling the intrusive noise impacts for residents and other sensitive receivers in the short term; and
- Maintaining noise level amenity for particular land uses for residents and sensitive receivers in other land uses.

4.3.1 Intrusiveness Noise Levels

For assessing intrusiveness, the background noise generally needs to be measured. The intrusiveness noise level essentially means that the equivalent continuous noise level (LAeq) of the source should not be more than 5 dB(A) above the measured Rated Background Level (RBL), over any 15-minute period.

4.3.2 Amenity Noise Levels

The amenity noise level is based on land use and associated activities (and their sensitivity to noise emission). The cumulative effect of noise from industrial sources needs to be considered in assessing the impact. The noise levels relate only to other industrial-type noise sources and do not include road, rail or community noise. The existing noise level from industry is measured.

If it approaches the project trigger noise level value, then noise levels from new industrial-type noise sources, (including air-conditioning mechanical plant) need to be designed so that the cumulative effect does not produce total noise levels that would significantly exceed the project trigger noise level.

4.3.3 Area Classification

The NPfI characterises the “Suburban” noise environment as an area with an acoustical environment that:

- has local traffic with characteristically intermittent traffic flows or with some limited commerce or industry.
- This area often has the following characteristic: - evening ambient noise levels defined by the natural environment and human activity

The area surrounding the proposed development falls under the “Suburban” area classification.

4.3.4 Project Specific Trigger Noise Levels

Having defined the area type, the processed results of the unattended noise monitoring have been used to determine project specific project trigger noise levels. The intrusive and amenity project trigger noise levels for nearby residential premises are presented in Table 4-2. These project trigger noise levels are nominated for the purpose of assessing potential noise impacts from the proposed development.

In this case, the ambient noise environment is not controlled by industrial noise sources and therefore the project amenity noise levels are assigned as per Table 2.2 of the NPfI (Recommended Amenity Noise Levels) and standardised as per Section 2.2 of the NPfI. For each assessment period, the lower (i.e. the more stringent) of the amenity or intrusive project trigger noise levels are adopted. These are shown in bold text in Table 4-2.

Table 4-2 Operational Project Trigger Noise Levels

Receiver	Time of Day	ANL [1] L_{Aeq}	Measured		Project Trigger Noise Levels	
			RBL [2] $L_{A90(15min)}$	Existing $L_{Aeq(Period)}$	Intrusive $L_{Aeq(15min)}$	Amenity $L_{Aeq(15min)}$
Residential	Day	55	38	47	**50**	58
	Evening	45	38	53	51	**48**
	Night	40	30	44	**42**	43
Commercial	When in use	65	-	-	-	65

Note 1: ANL = "Amenity Noise Level" for residences in Suburban Areas.

Note 2: RBL = "Rating Background Level".

5 NOISE IMPACT ASSESSMENT

5.1 Traffic Noise Assessment

In order to ascertain the existing traffic noise levels from the surrounding area the measured noise logger data was processed in accordance to the NSW Department of Planning and Infrastructure's "*Development near Rail Corridors and Busy Roads - Interim Guideline"* assessment time periods as shown in Table 3-2.

The final façade noise levels were predicted for each time period considering the distance attenuation from each respective source, virtual source, façade's orientation and any barrier effects.

The required noise reduction via the building façade for each respective room for each time period will be compared to determine the appropriate design criteria levels.

It is typically accepted that an open window (fractionally open to meet ventilation requirements) results in an attenuation of external noise by 10 dB. This reduction has been used to predict the room noise level in the window open condition.

5.2 Recommended Noise Control Treatment

The calculation procedure establishes the required noise insulation performance of each surface component such that the internal noise level is achieved whilst an equal contribution of traffic noise energy is distributed across each component. Building envelope components with a greater surface area must therefore offer increased noise insulation performance.

The recommended acoustic treatment is based on the following floor finishes:

- Bedrooms: Carpet and underlay
- Living Room Hard Flooring
- Kitchen/Wet Areas: Tiles

The acoustic requirements shown in this report may increase further where the bedroom floor finishes are tiled or timber.

All recommendations must be checked by others to ensure compliance with other non-acoustic requirements that Council or other authority may impose (e.g. Thermal requirements for BASIX compliance).

5.3 Glazing

The R_w rating required for each window will vary from room to room. Recommendations for windows also apply to any other item of glazing located on the external facade of the building in a habitable room unless otherwise stated.

Note that the R_w rating is required for the complete glazing and frame assembly. The minimum glazing thicknesses will not necessarily meet the required R_w rating without an appropriate frame system. It will be therefore necessary to provide a window glass and frame system having a laboratory tested acoustic performance meeting the requirements below

The window systems must be tested in accordance with both of the following:

- Australian Window Association Industry Code of Practice Window and Door – Method of Acoustic Testing; and
- AS 1191 Acoustics – Method for laboratory measurement of airborne sound insulation of building elements.

It is necessary to submit such Laboratory certification for the proposed glazing systems (i.e. windows and framing systems) (e.g. NAL or CSIRO) for approval by RSA prior to ordering or commitment.

The entire frame associated with the glazing must be sealed into the structural opening using acoustic mastics and backer rods. Normal weather proofing details do not necessarily provide the full acoustic insulation potential of the window system. The manufacturers' installation instructions for the correct acoustic sealing of the frame must be followed.

It is possible that structural demands for wind loading or fire rating or the like may require more substantial glass and framing assemblies than nominated above. Where this is the case, the acoustic requirements must clearly be superseded by the structural or fire rating demands.

It must be noted that the presented glazing recommendations, in addition to traffic noise, consider the following site-specific potential noise sources.

- **Noise from the communal areas of the development**
- **Noise from the commercial/retail areas, including vehicles**

Table 5-1 presents the minimum recommended R_w (weighted noise reduction) for glazing elements. **Please refer to the colour references in Table 5-1 below and Appendix E for glazing layout**.

Note: **No further upgraded acoustic glazing requirements are required from beyond level 6. Standard glazing (Minimum rating of Rw 20) may be utilised; further upgrades if wanted are up to the discretion of the client.**

Table 5-1 Minimum Acoustic Rating (R_w) Required for glazing elements

Location	Glazing Type	Minimum Glazing Rw Rating
Living Rooms (RED - Appendix E)	Windows	Rw 30
	Sliding Doors	Rw 32
Bedrooms (RED - Appendix E)	Windows	Rw 32
	Sliding Doors	Rw 34
Living Rooms (BLUE - Appendix E)	Windows	Rw 26
	Sliding Doors	Rw 26
Bedrooms (BLUE - Appendix E)	Windows	Rw 28
	Sliding Doors	Rw 28
Living Rooms (GREEN - Appendix E)	Windows	Rw 22
	Sliding Doors	Rw 22
Bedrooms (GREEN - Appendix E)	Windows	Rw 24
	Sliding Doors	Rw 24

The above recommended glazing systems consist of glass pane, frame and seals. Care should be taken when selecting the system to ensure the acoustic rating (Rw) is verified through laboratory tested data. As a guide, the following table presents the Rw ratings of different glass thicknesses, please note that these are shown as a guide only, all final glazing system selections must comply with the requirements in Section 5.3.

Table 5-2 Glass Thickness Guideline

Glass Thickness	Rw Rating (Glass Pane Only)
5mm	26
6mm	28
6.38mm Laminated	32
8.38 Laminated	34
10.38 Laminated	36
12.38 Laminated	37
4mm – 50mm Airgap – 6mm Double Glazed	41

5.3.1 Detailing

Note that well-detailed construction and careful installation is needed to achieve the required R_w acoustic ratings. All gaps are to be minimised and fully sealed with an acoustic rated sealant, such as FireBan One by Bostik or Sikaflex Pro 2HP by Sika.

6 ROAD NOISE POLICY & CARPARK ASSESSMENT

6.1 Traffic Impact Assessment - Proposed Traffic Generation

A traffic assessment for the SSDA has been carried out by CJP Consulting Engineers ref: 24136 | 93-107 Cecil Ave & 9-10 Roger Ave, Castle Hill | SSDA | 22.1.26. Based on the predicted trip rates, the proposed SSDA development has a traffic generation potential of 173 vehicle trips per hour during the weekday AM peak period and 176 vehicle trips per hour during the weekday PM peak period. The basement carpark entry is proposed to off Cecil Avenue, carpark entry and exit vehicle trips are included in this assessment.

6.2 Road Traffic Noise Criteria - Road Noise Policy

NSW Road Noise Policy (Table 3) sets out the assessment criteria for residences to be applied to Additional Road traffic movements generated by the proposed site may result in increased traffic noise that may potentially impact residential receivers along Cecil Avenue/ Terminus Street (local road). The assessment should be based on the road traffic noise assessment criteria for residential land uses contained within Table 3 of the NSW EPA Road Noise Policy (RNP).

- The RNP provides base line criteria for noise impacts on residences affected by additional traffic on an existing road. The relevant criteria applicable to this assessment is presented in Table 6-1.

Table 6-1 Road Traffic Noise Assessment Criteria for Residential Land Uses

Road Category	Type of Development	Assessment Criteria	
		Day (7am – 10pm)	Night (10pm to 7am)
Sub- Arterial (Major Collector)	3. Existing residences affected by additional traffic on existing sub arterial roads generated by land use developments	$L_{Aeq,\ (15\ hour)}$ 60 (external)	$L_{Aeq,\ (9\ hour)}$ 55 (external)

6.3 Road Traffic Noise Prediction Methodology

Road traffic impact noise prediction from the proposed SSDA development was calculated using the methodology based on the Calculation of Road Traffic Noise (CoRTN) prediction algorithm. It should be noted, the L_{Aeq} values were calculated from the L_{A10} values predicted by the *CoRTN* algorithms using the well-validated approximation $L_{Aeq,1hour} = L_{A10,1hr} - 3$ (NSW RTA, 2001).

6.4 Road Traffic Noise Assumptions

This assessment addresses the worst affected receiver which would be the sensitive receiver most likely to experience the vehicles passing by, identified to be residential dwellings to the east on Cecil Avenue. Based on the review of the area, the properties at 109 - 111 Cecil Ave are most likely to experience increased traffic noise.

6.5 Road Traffic Noise Results

The existing daytime traffic noise level at 107 Cecil Ave were measured to be **$L_{Aeq,15hr}$ 55dB(A)** at the dwelling's façade during the daytime period and **$L_{Aeq,9hr}$ 48dB(A)** during the night time period. The existing noise is predicted to be within the RNP's noise criteria for sub arterial roads.

The additional vehicles associated with the proposed development during the peak period are as presented in section 6.1. The cumulative daytime traffic noise level is predicted to be **$L_{Aeq,15hr}$ 58dB(A) and $L_{Aeq,9hr}$ 51dB(A)** at the façade. This is compliant with the RNP's noise criteria for sub-arterial Roads.

7 MECHANICAL PLANT NOISE ASSESSMENT

A specific mechanical plant schedule has not been supplied at this stage. It is anticipated that the building will be serviced by multiple typical mechanical ventilation/air conditioning equipment. **A full specification mechanical plant noise impact assessment should be carried out at the CC design stage when mech designs have been finalised, this includes any associated commercial and waste serviced by HRV.**

7.1 Mechanical Services

At this stage, the design and selection of mechanical equipment have not been selected or finalised. Typically, based on similar sized residential projects we would expect the following noise control measures to be implemented:

- Pump room fans located in the basement:
    - Install acoustic attenuators or internally lined ducts to the supply and exhaust fans.
    - Noise levels would be controlled to achieve amenity at the nearest affected residents.
- Apartment exhaust fans (toilet, laundry, kitchen)
    - Electrically inter-locked with the light switch or have manual switch for the room served.
    - Internally lined ducts and acoustic flex ducts to be fitted to the fans.
- Outdoor A/C condensers to be located on residential balconies or rooftop:
    - If required, provide solid acoustic barrier or acoustic louvres around condensers.
    - Vibration isolation mounts are to be selected in accordance with manufacturer's recommendations.
    - Where required, incorporate restraining devices to prevent excessive movement of plant, equipment and piping systems.
- All mechanical plant servicing the development will need to meet the operational project trigger noise levels as outlined in bold in Table 4-2, at the nearest sensitive receivers.

7.2 Use of Communal Areas

Where noise activity associated with the use of the outdoor communal space on the ground and roof level may impact adjoining residents to the new development, The Protection of the Environment Operations Act 1997 is the key regulatory tool for assessing any offensive noise.

For the use of the outdoor communal space, all occupiers shall observe the following:

a) The use of the outdoor space shall be restricted to between the hours of 7:00am and 10:00pm.

b) Not create any or allow any noise to be created which is likely to interfere with the peaceful enjoyment of the owners, residents or occupiers of adjacent properties.

c) There are to be no permanently installed speakers and/or amplification equipment for the playing of music in the outdoor communal space.

8 CONCLUSION

Rodney Stevens Acoustics has conducted a noise impact assessment of the Proposed Mixed-Use Development at 93 - 107 Cecil Ave, Castle Hill. The noise impact assessment has assessed the noise generation and intrusion of the site and compared it with the noise criteria required by in Hills Shire Council and other relevant standards.

A noise survey has been conducted, and the processed data has been used to determine traffic noise from the surrounding area at the project site.

A preliminary DA mechanical plant assessment has been provided and operational noise criteria established. A full mechanical plant assessment must be carried out by a qualified acoustic consultant during the detailed construction certification stage when architectural and mechanical plans have been finalised.

Based on the noise impact study conducted, the proposed development is assessed to comply with the SEPP (Transport and Infrastructure) 2021 noise criteria with recommendations from this report. It is therefore recommended that planning approval be granted for the proposed development on the basis of acoustics.

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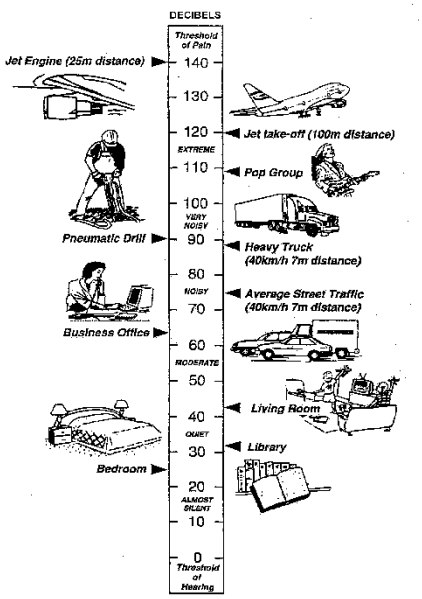
Director

Appendix A – Acoustic Terminology

A-weighted sound pressure	The human ear is not equally sensitive to sound at different frequencies. People are more sensitive to sound in the range of 1 to 4 kHz (1000 – 4000 vibrations per second) and less sensitive to lower and higher frequency sound. During noise measurement an electronic '*A-weighting*' frequency filter is applied to the measured sound level *dB(A)* to account for these sensitivities. Other frequency weightings (B, C and D) are less commonly used. Sound measured without a filter is denoted as linear weighted dB(linear).
Ambient noise	The total noise in a given situation, inclusive of all noise source contributions in the near and far field.
Community annoyance	Includes noise annoyance due to: character of the noise (e.g. sound pressure level, tonality, impulsiveness, low-frequency content) character of the environment (e.g. very quiet suburban, suburban, urban, near industry) miscellaneous circumstances (e.g. noise avoidance possibilities, cognitive noise, unpleasant associations) human activity being interrupted (e.g. sleep, communicating, reading, working, listening to radio/TV, recreation).
Compliance	The process of checking that source noise levels meet with the noise limits in a statutory context.
Cumulative noise level	The total level of noise from all sources.
Extraneous noise	Noise resulting from activities that are not typical to the area. Atypical activities may include construction, and traffic generated by holiday periods and by special events such as concerts or sporting events. Normal daily traffic is not considered to be extraneous.
Feasible and reasonable measures	Feasibility relates to engineering considerations and what is practical to build; reasonableness relates to the application of judgement in arriving at a decision, taking into account the following factors: Noise mitigation benefits (amount of noise reduction provided, number of people protected). Cost of mitigation (cost of mitigation versus benefit provided). Community views (aesthetic impacts and community wishes). Noise levels for affected land uses (existing and future levels, and changes in noise levels).
Impulsiveness	Impulsive noise is noise with a high peak of short duration or a sequence of these peaks. Impulsive noise is also considered annoying.

Low frequency	Noise containing major components in the low-frequency range (20 to 250 Hz) of the frequency spectrum.
Noise criteria	The general set of non-mandatory noise levels for protecting against intrusive noise (for example, background noise plus 5 dB) and loss of amenity (e.g. noise levels for various land use).
Noise level (goal)	A noise level that should be adopted for planning purposes as the highest acceptable noise level for the specific area, land use and time of day.
Noise limits	Enforceable noise levels that appear in conditions on consents and licences. The noise limits are based on achievable noise levels, which the proponent has predicted can be met during the environmental assessment. Exceedance of the noise limits can result in the requirement for either the development of noise management plans or legal action.
Performance-based goals	Goals specified in terms of the outcomes/performance to be achieved, but not in terms of the means of achieving them.
Rating Background Level (RBL)	Rating background noise level (RBL) – the overall single-figure background level representing each assessment period (day/evening/night) over the whole monitoring period (as opposed to over each 24-hour period used for the assessment background level). The rating background level is the median L_{A90} noise level measured over all day, evening and night time monitoring periods.
Receptor	The noise-sensitive land use at which noise from a development can be heard.
Sleep disturbance	Awakenings and disturbance of sleep stages.
Sound and decibels (dB)	Sound (or noise) is caused by minute changes in atmospheric pressure that are detected by the human ear. The ratio between the quietest noise audible and that which should cause permanent hearing damage is a million times the change in sound pressure. To simplify this range the sound pressures are logarithmically converted to decibels from a reference level of 2 x 10-5 Pa. The picture below indicates typical noise levels from common noise sources.



dB is the abbreviation for decibel – a unit of sound measurement. It is equivalent to 10 times the logarithm (to base 10) of the ratio of a given sound pressure to a reference pressure.

Sound power Level (SWL)

The sound power level of a noise source is the sound energy emitted by the source. Notated as SWL, sound power levels are typically presented in *dB(A)*.

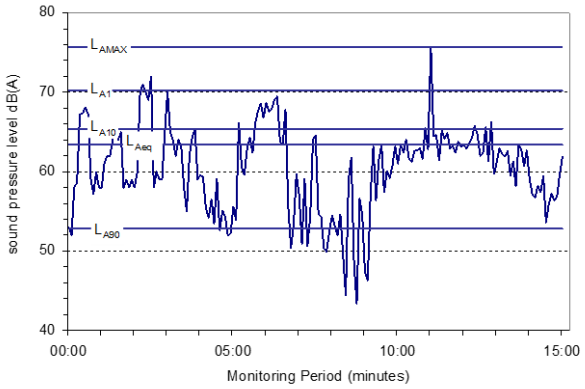
Sound Pressure Level (SPL)

The level of noise, usually expressed as SPL in *dB(A)*, as measured by a standard sound level meter with a pressure microphone. The sound pressure level in *dB(A)* gives a close indication of the subjective loudness of the noise.

Statistic noise levels

Noise levels varying over time (e.g. community noise, traffic noise, construction noise) are described in terms of the statistical exceedance level.

A hypothetical example of A weighted noise levels over a 15 minute measurement period is indicated in the following figure:



Key descriptors:

L_{Amax} Maximum recorded noise level.

L_{A1} The noise level exceeded for 1% of the 15 minute interval.

L_{A10} Noise level present for 10% of the 15 minute interval. Commonly referred to the average maximum noise level.

L_{Aeq} Equivalent continuous (energy average) A-weighted sound pressure level. It is defined as the steady sound level that contains the same amount of acoustic energy as the corresponding time-varying sound.

L_{A90} Noise level exceeded for 90% of time (background level). The average minimum background sound level (in the absence of the source under consideration).

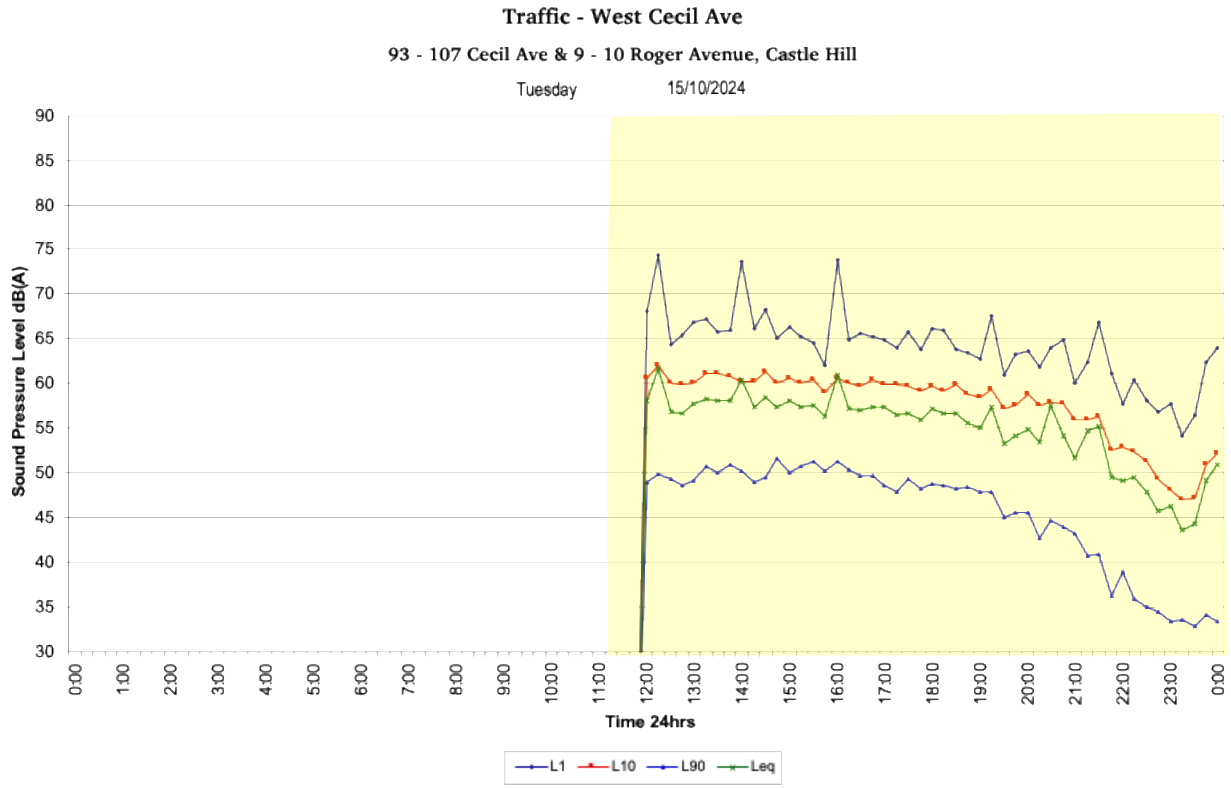
Threshold

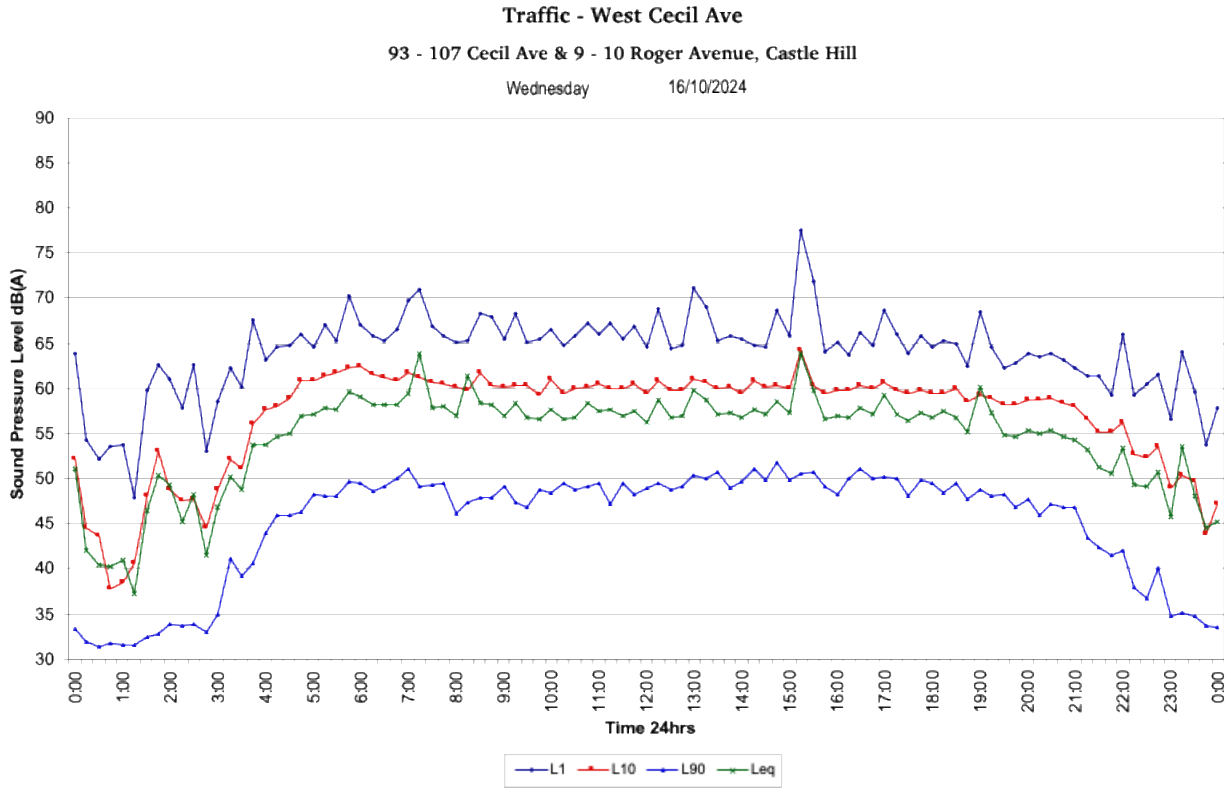
The lowest sound pressure level that produces a detectable response (in an instrument/person).

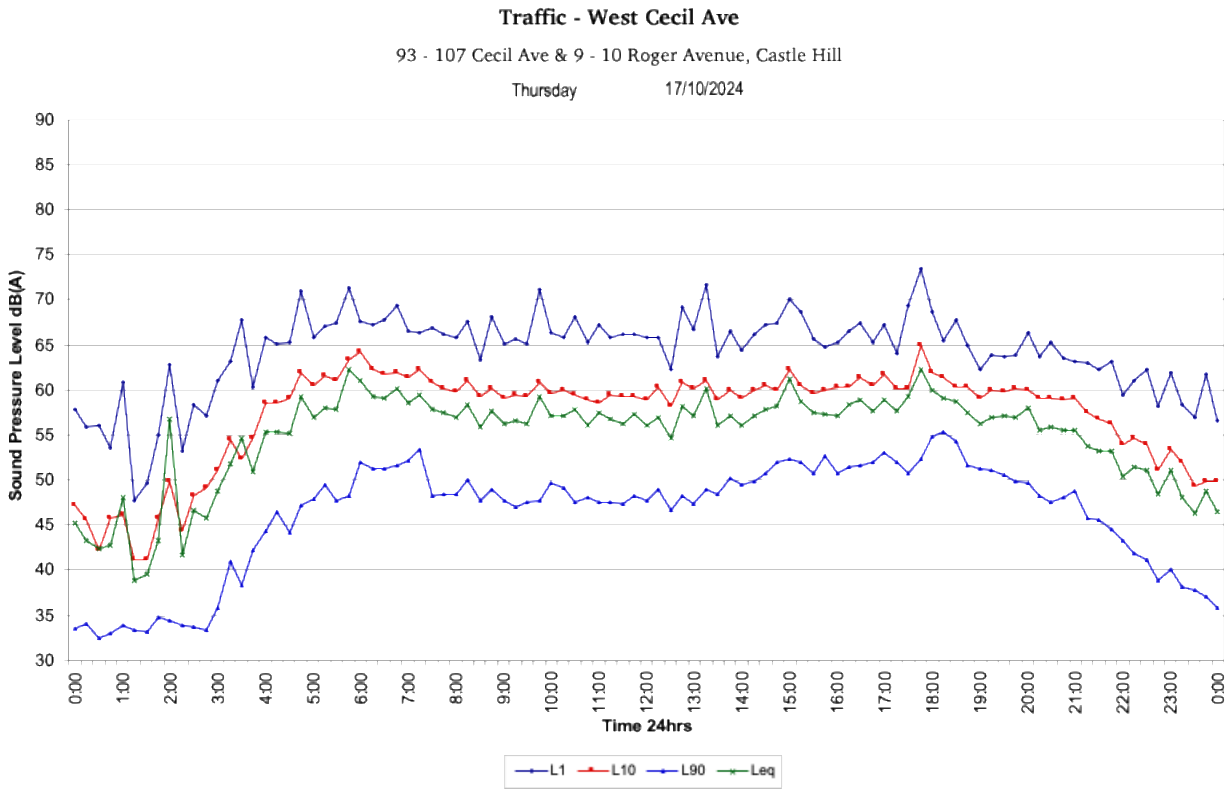
Tonality

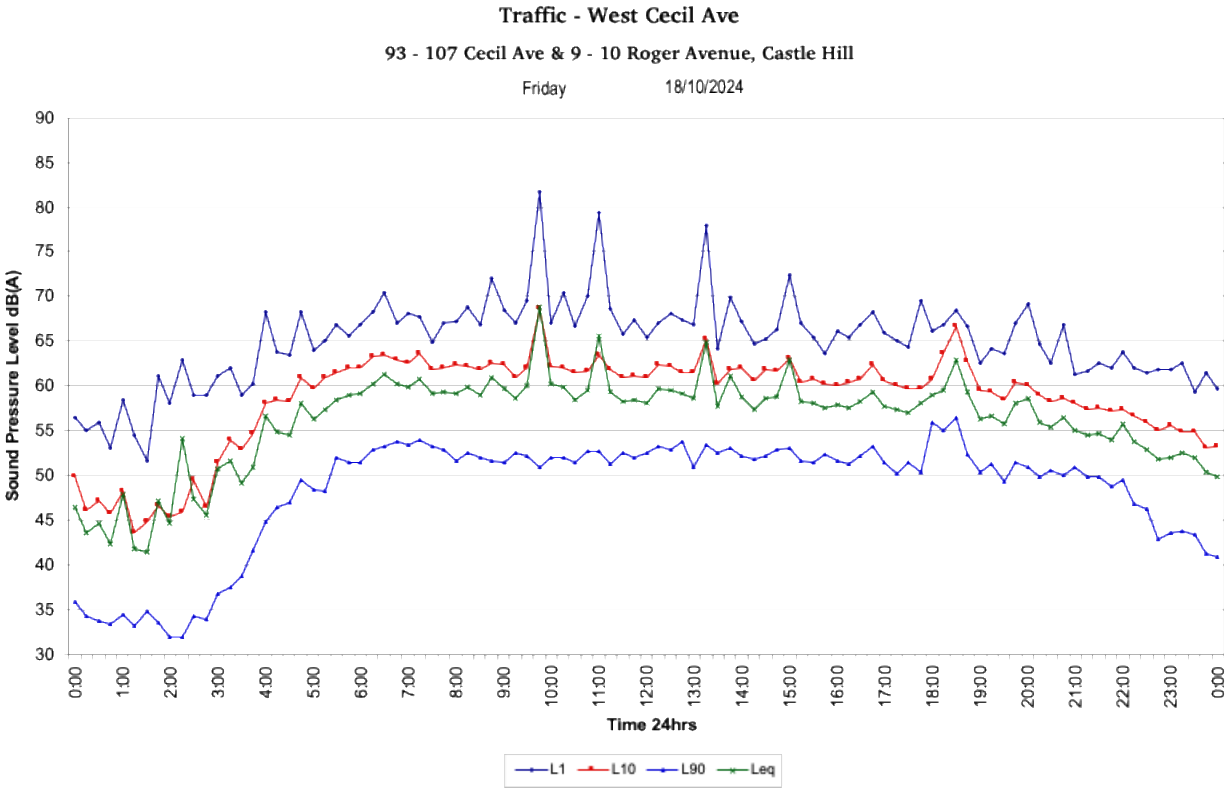
Tonal noise contains one or more prominent tones (and characterised by a distinct frequency components) and is considered more annoying. A 2 to 5 dB(A) penalty is typically applied to noise sources with tonal characteristics

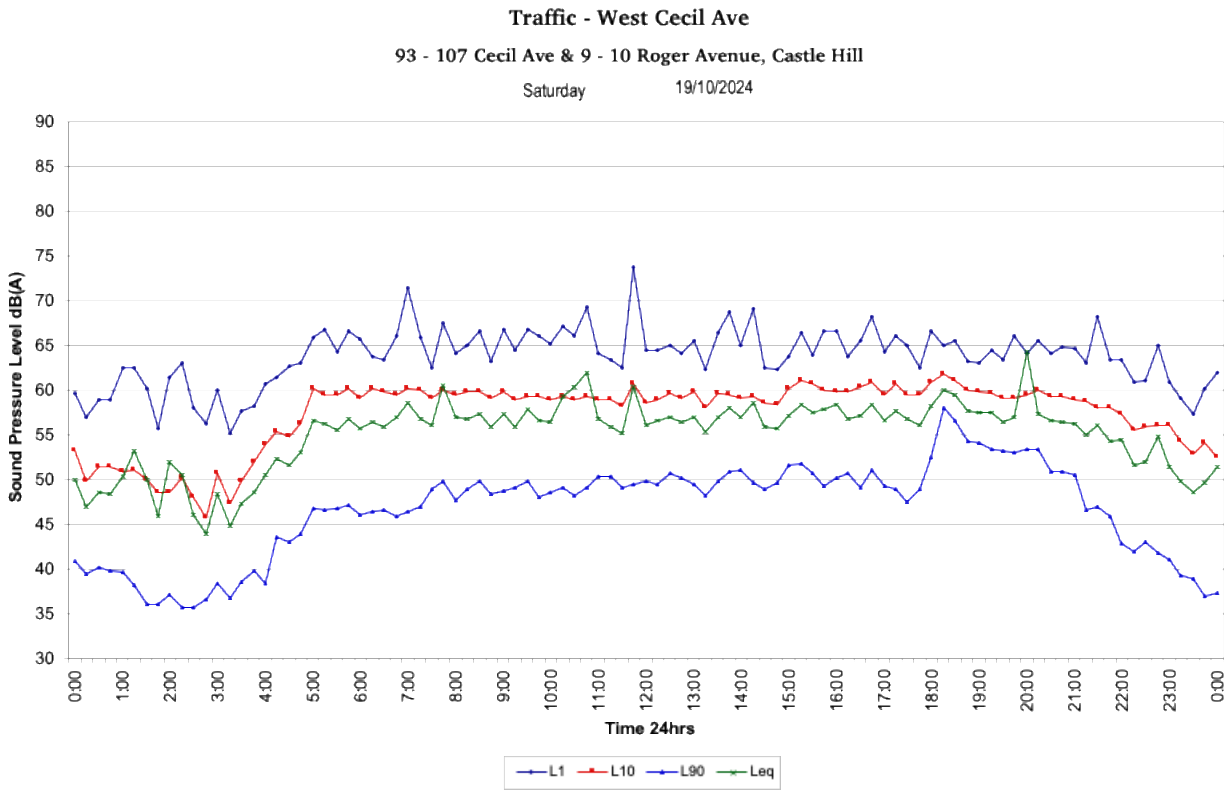
Appendix B – Logger Graphs

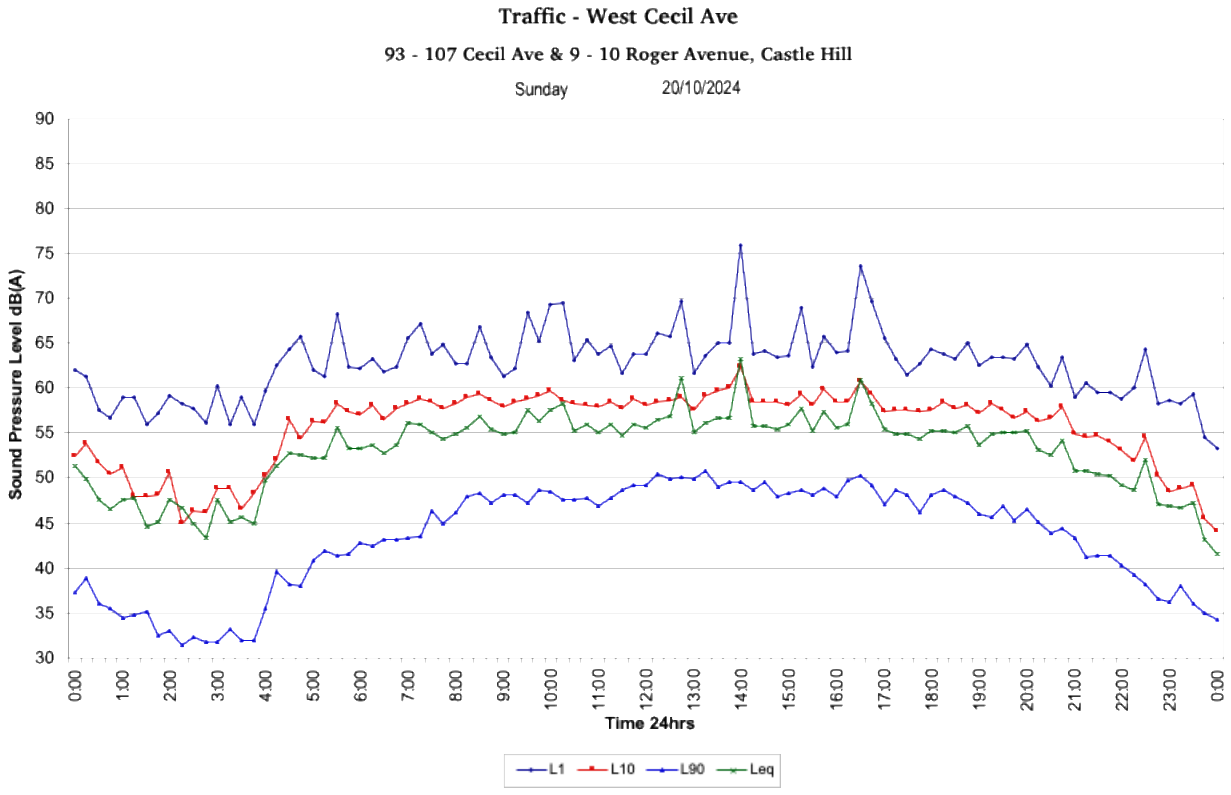


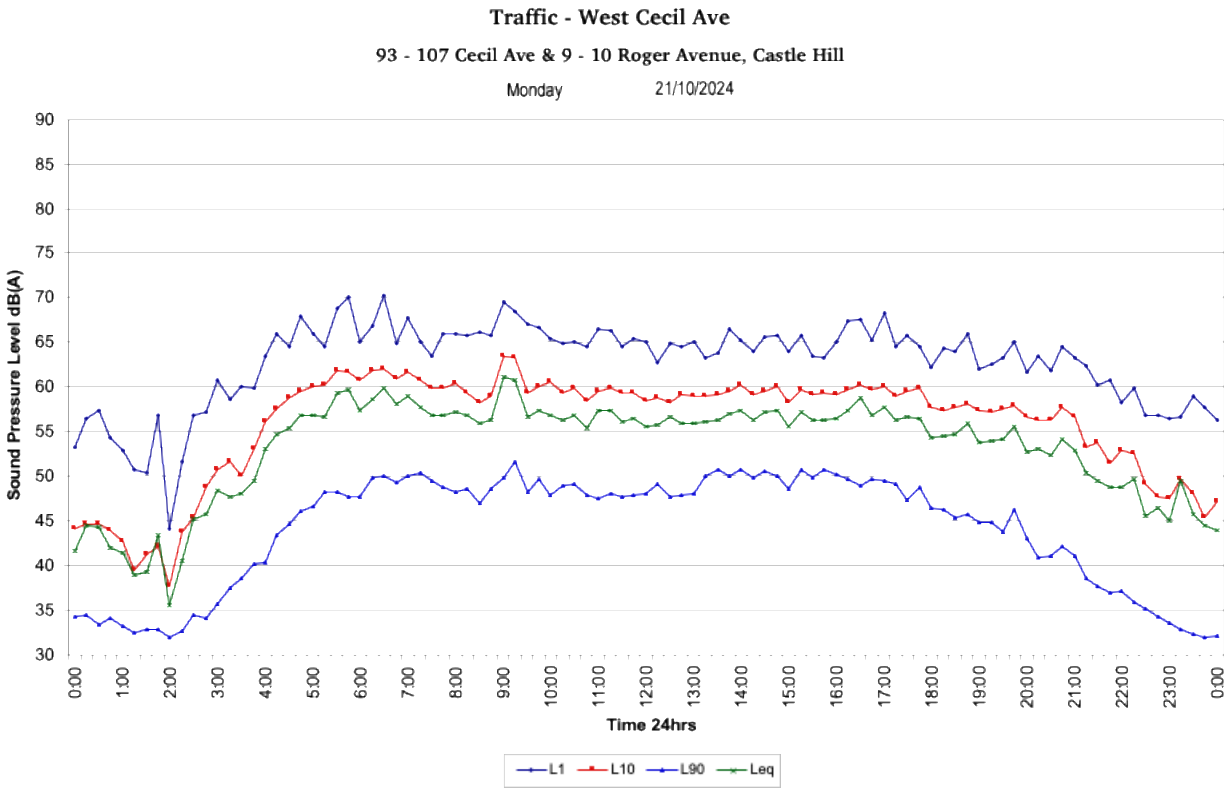



Traffic - West Cecil Ave
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Thursday 17/10/2024
Sound Pressure Level dB(A)
Time 24hrs
L1 L10 L90 Leq


Traffic - West Cecil Ave
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Friday 18/10/2024
Sound Pressure Level dB(A)
Time 24hrs
L1 L10 L90 Leq


Traffic - West Cecil Ave
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Saturday 19/10/2024
Sound Pressure Level dB(A)
Time 24hrs
L1 L10 L90 Leq


Traffic - West Cecil Ave
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Sunday 20/10/2024
Sound Pressure Level dB(A)
Time 24hrs
L1 L10 L90 Leq


Traffic - West Cecil Ave
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Monday 21/10/2024
Sound Pressure Level dB(A)
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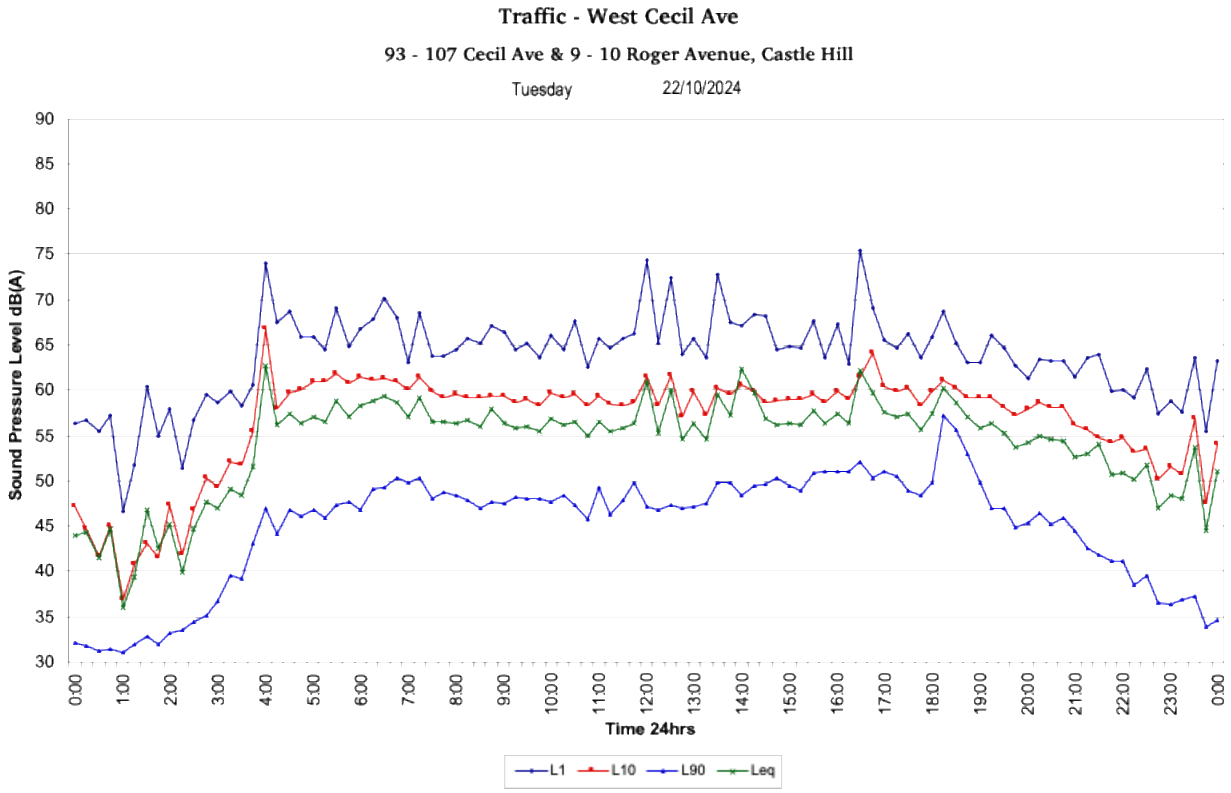
Time 24hrs
L1 L10 L90 Leq


Traffic - West Cecil Ave
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Tuesday 22/10/2024
Sound Pressure Level dB(A)
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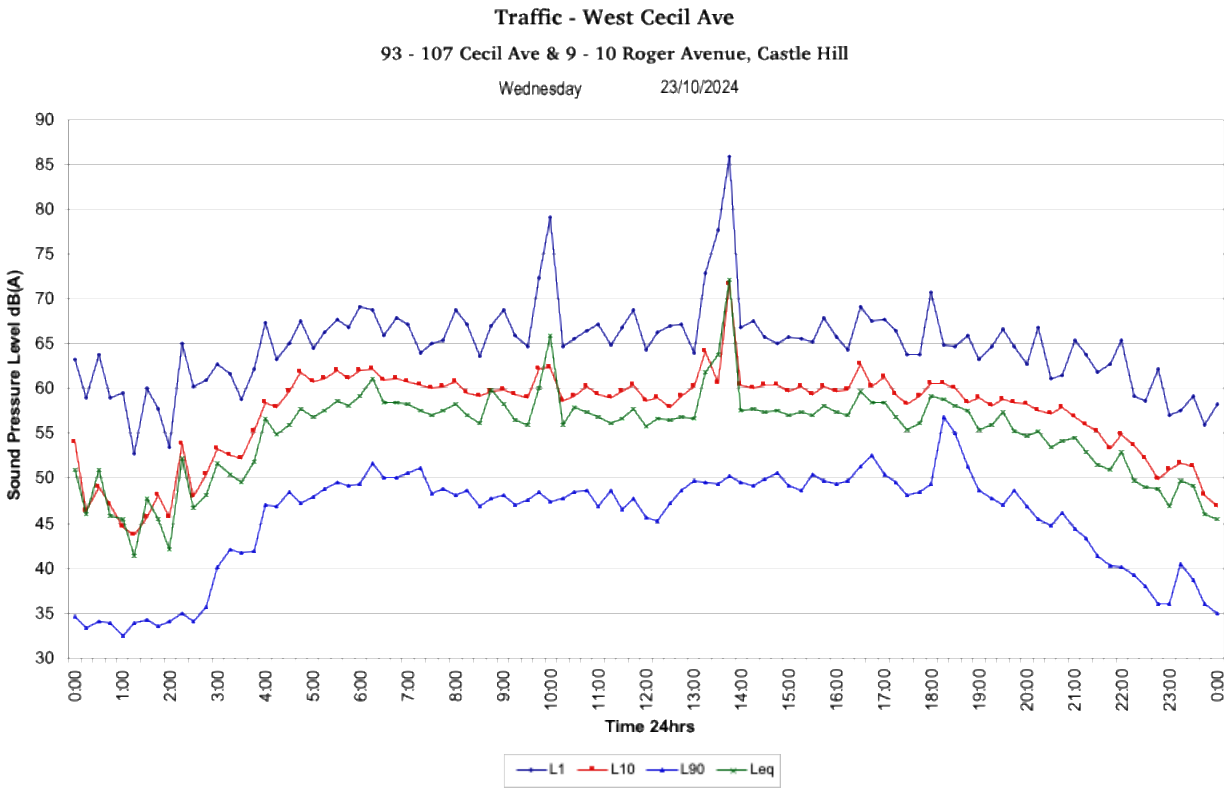
Time 24hrs
L1 L10 L90 Leq


Traffic - West Cecil Ave
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Wednesday 23/10/2024
Sound Pressure Level dB(A)
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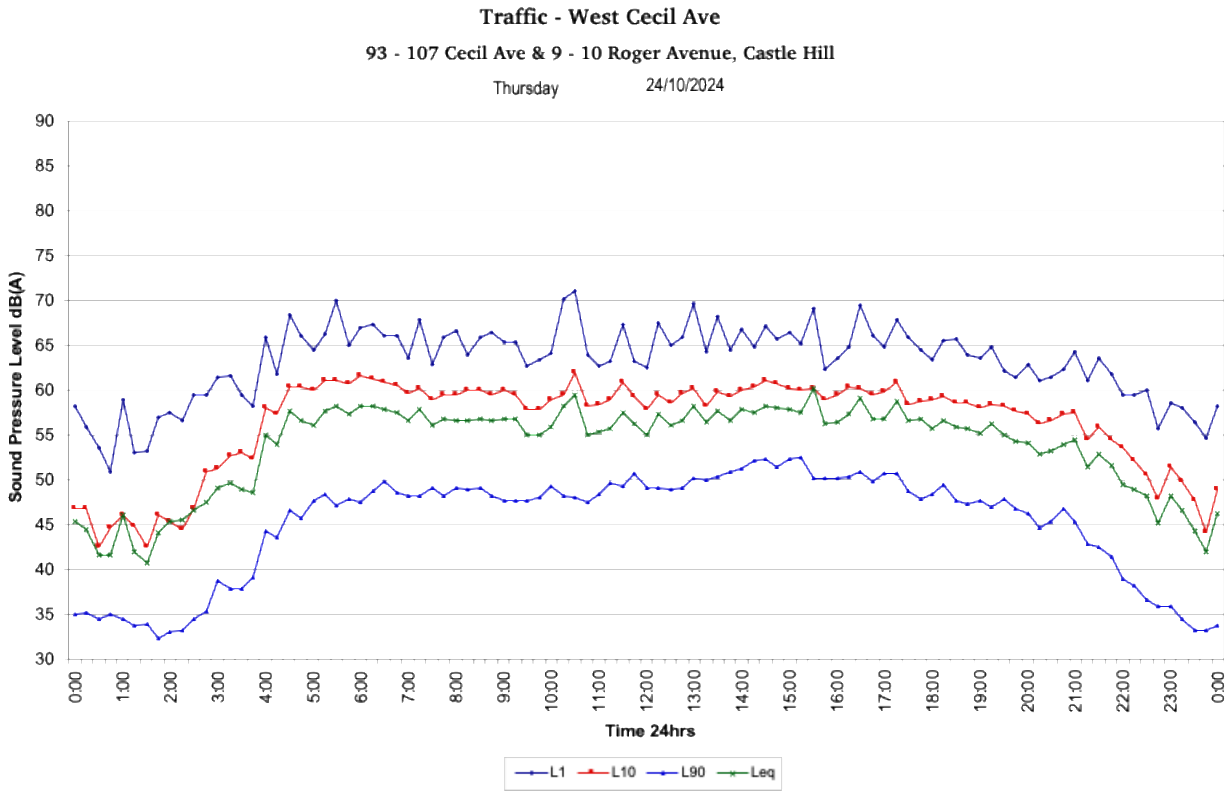
Time 24hrs
L1 L10 L90 Leq


Traffic - West Cecil Ave
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Thursday 24/10/2024
Sound Pressure Level dB(A)
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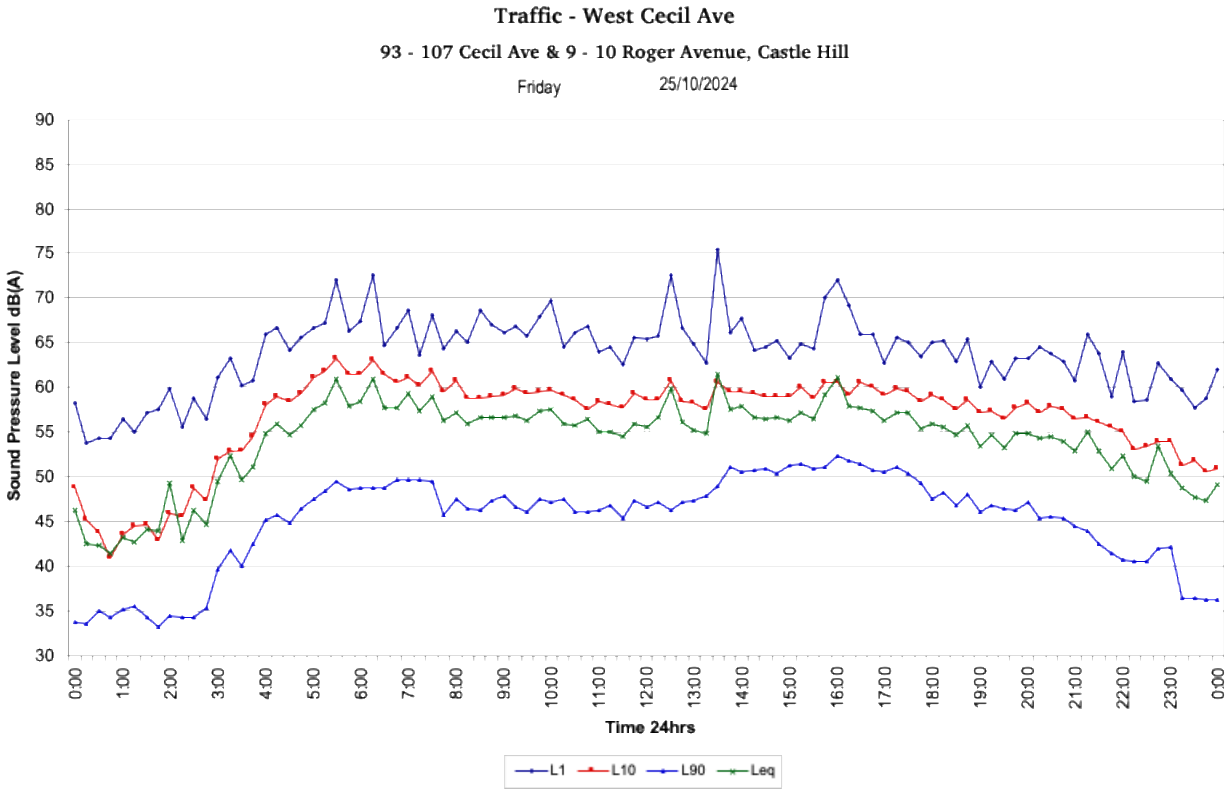
Time 24hrs
L1 L10 L90 Leq


Traffic - West Cecil Ave
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Friday 25/10/2024
Sound Pressure Level dB(A)
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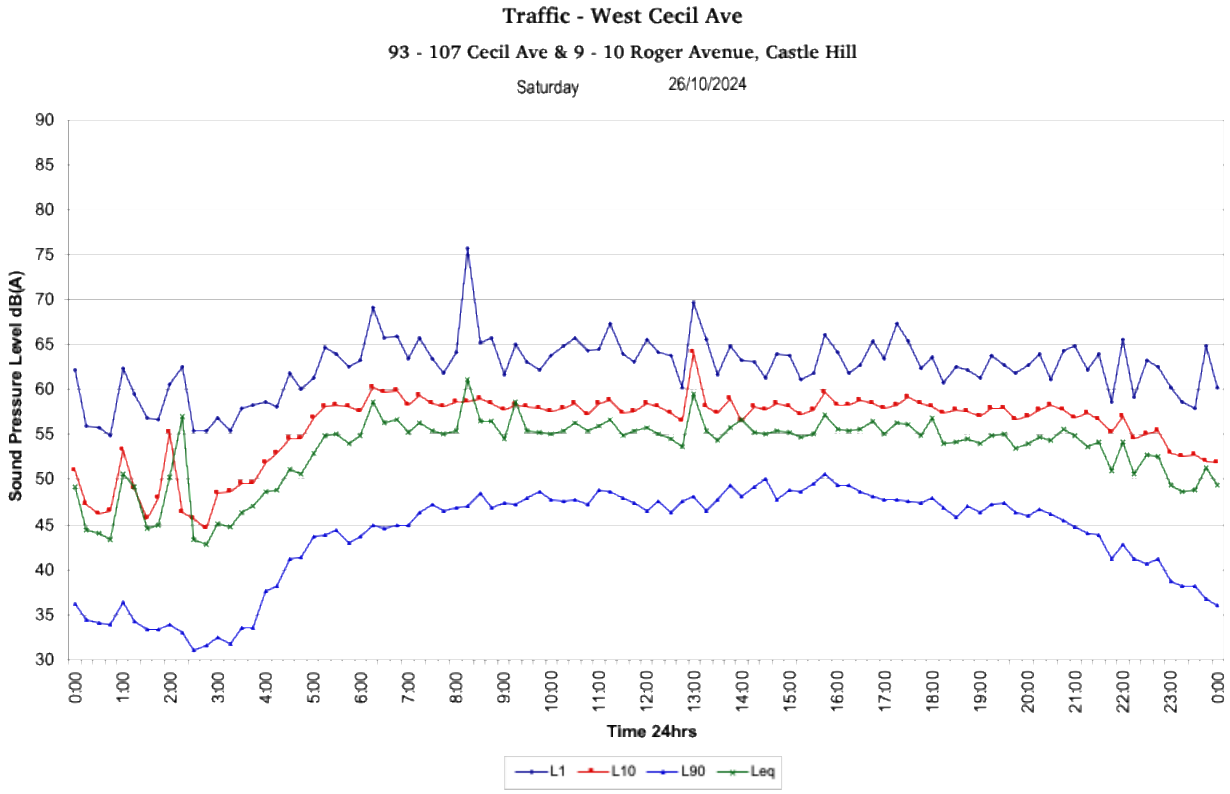
Time 24hrs
L1 L10 L90 Leq


Traffic - West Cecil Ave
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Saturday 26/10/2024
Sound Pressure Level dB(A)
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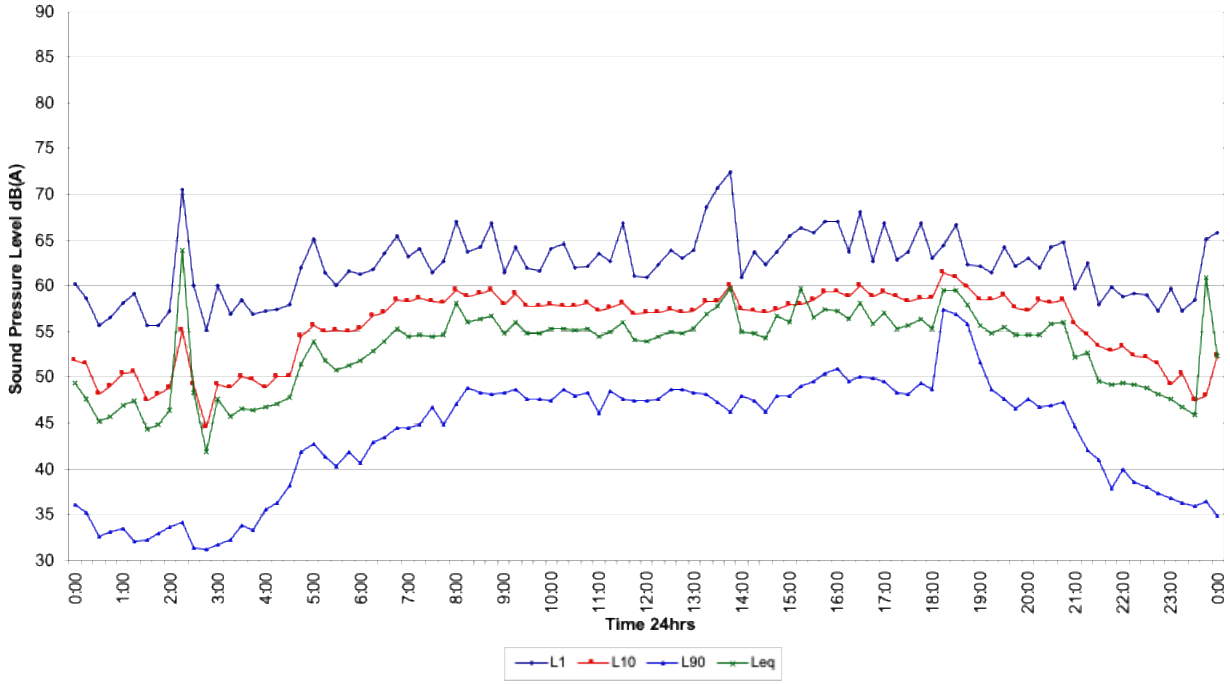
Time 24hrs
L1 L10 L90 Leq

Traffic - West Cecil Ave

93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill

Sunday 27/10/2024



Traffic - West Cecil Ave

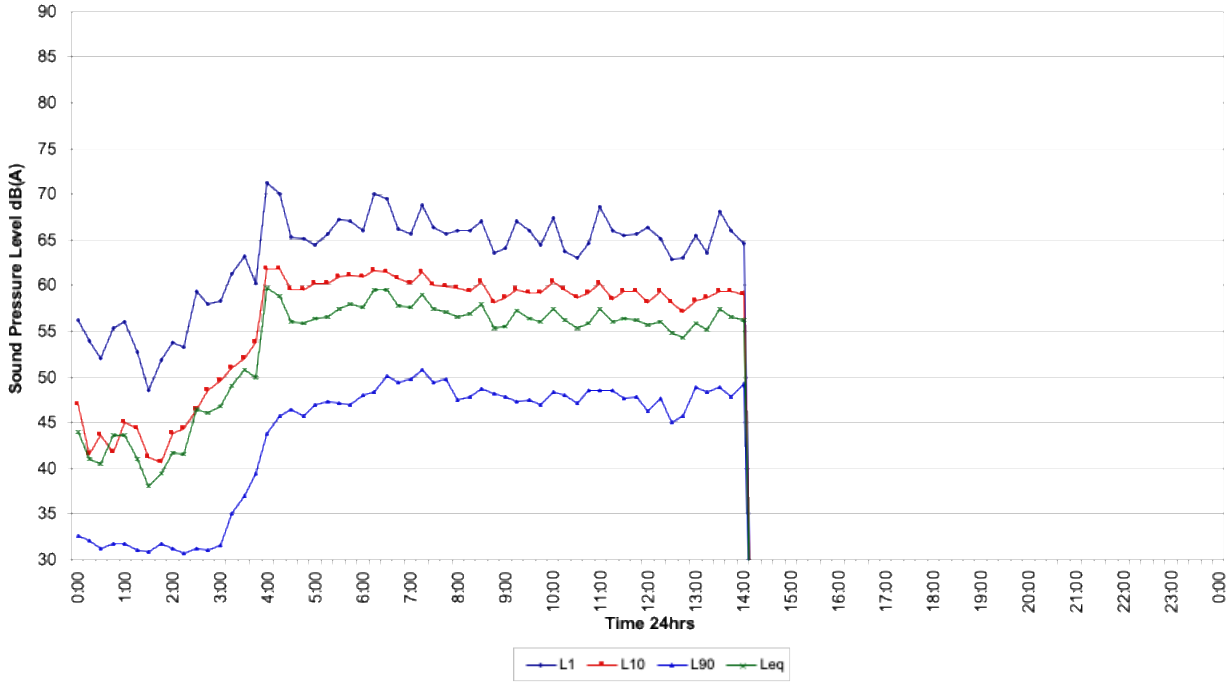
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill

Monday 28/10/2024

Traffic - West Cecil Ave

93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill

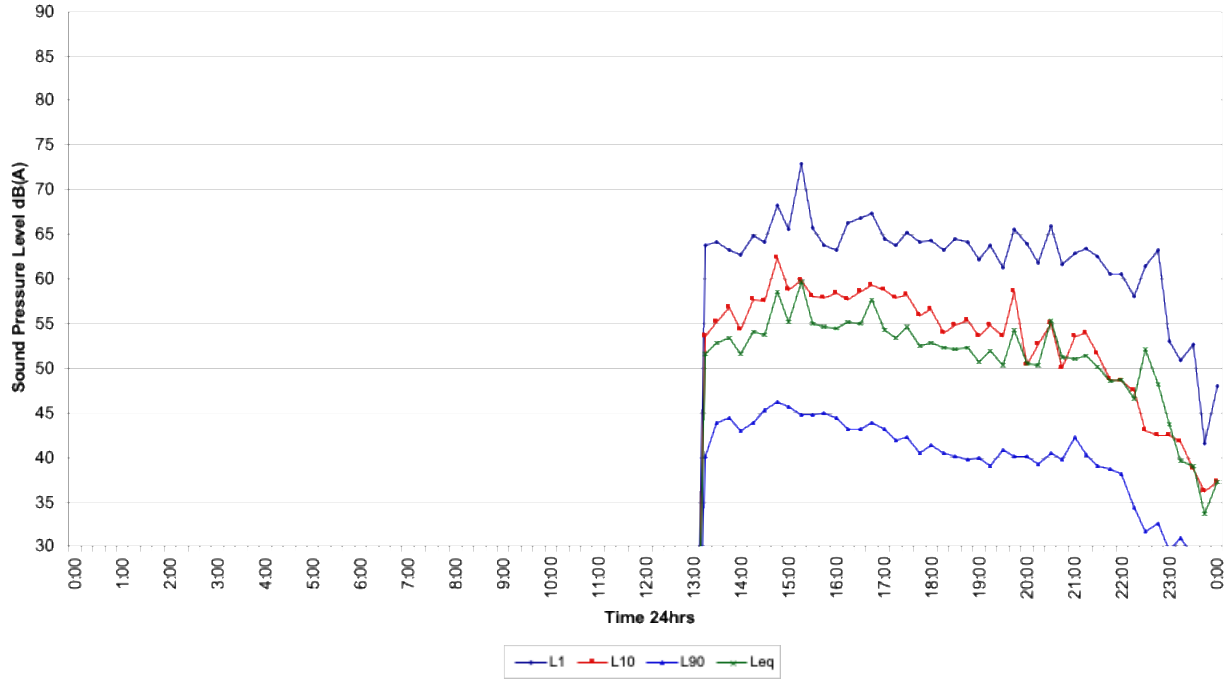
Tuesday 29/10/2024

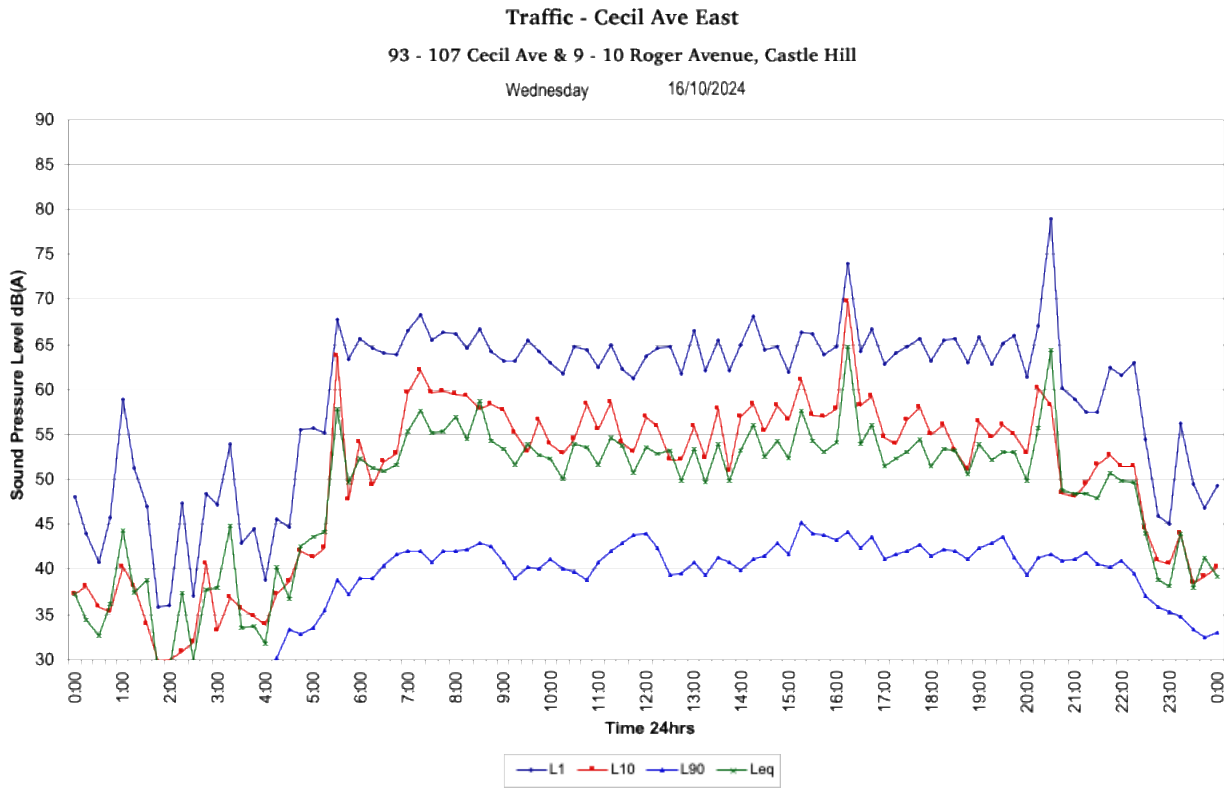


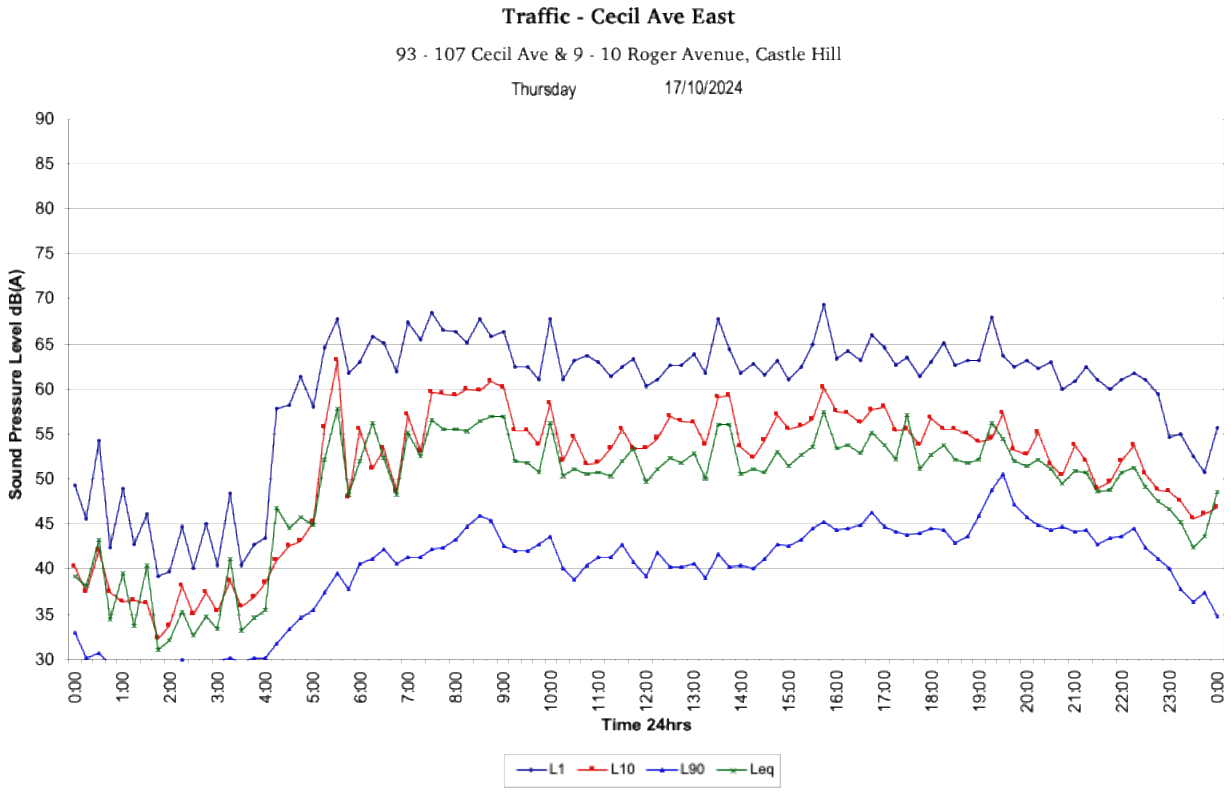
Traffic - Cecil Ave East

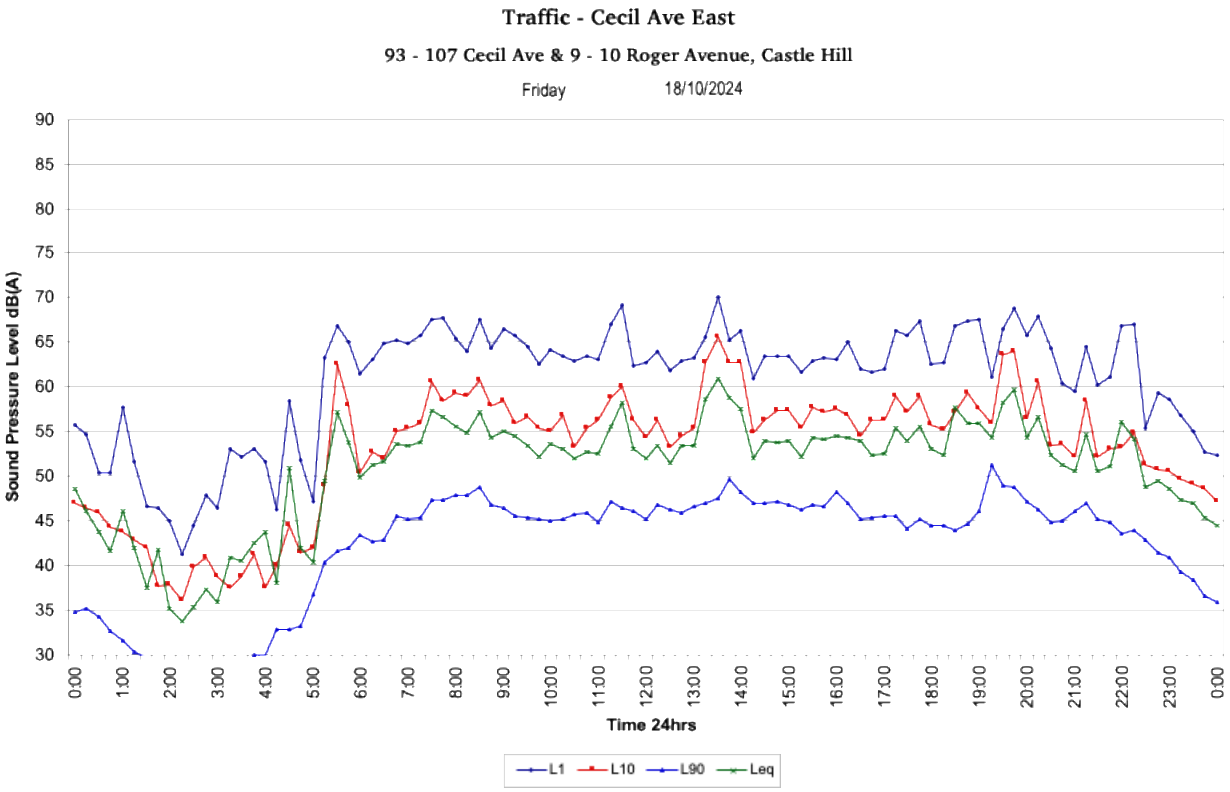
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill

Tuesday 15/10/2024




Traffic - Cecil Ave East
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Wednesday 16/10/2024
Sound Pressure Level dB(A)
Time 24hrs
L1 L10 L90 Leq


Traffic - Cecil Ave East
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Thursday 17/10/2024
Sound Pressure Level dB(A)
Time 24hrs
L1 L10 L90 Leq


Traffic - Cecil Ave East
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Friday 18/10/2024
Sound Pressure Level dB(A)
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Time 24hrs
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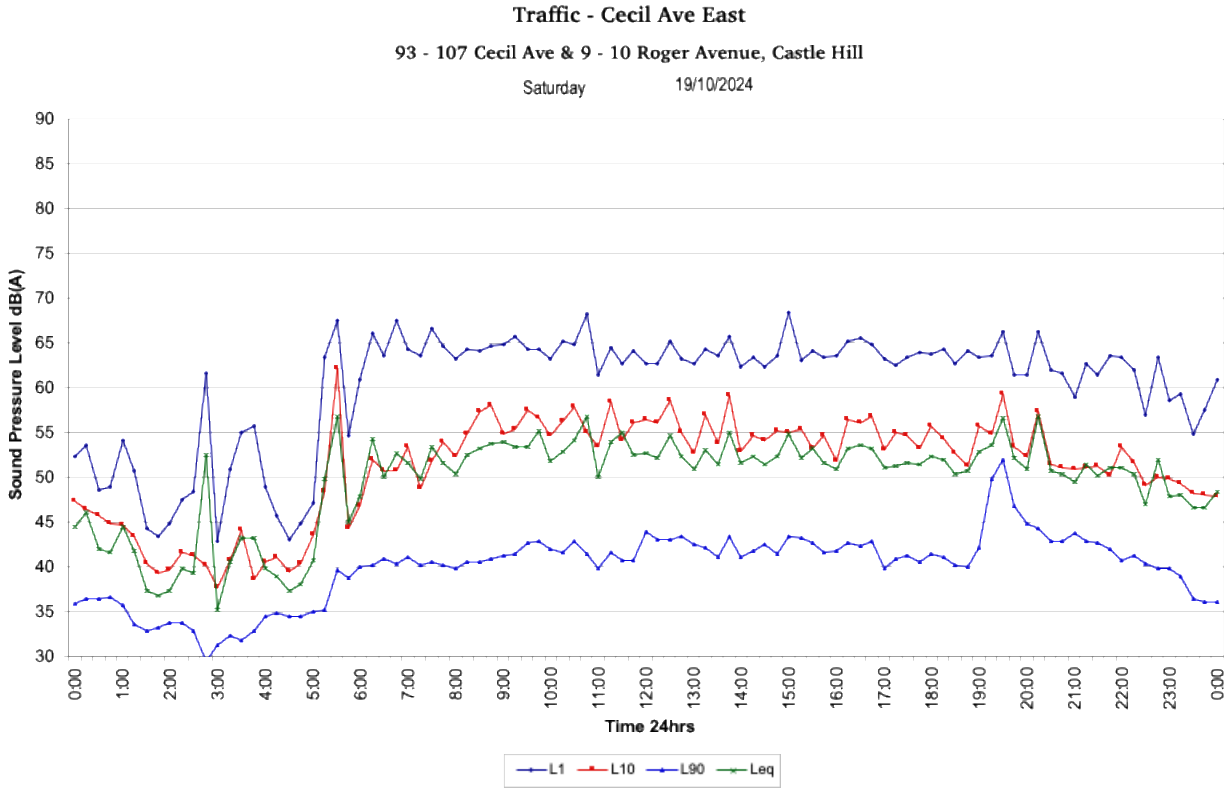
Traffic - Cecil Ave East
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Saturday 19/10/2024
Sound Pressure Level dB(A)
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Time 24hrs
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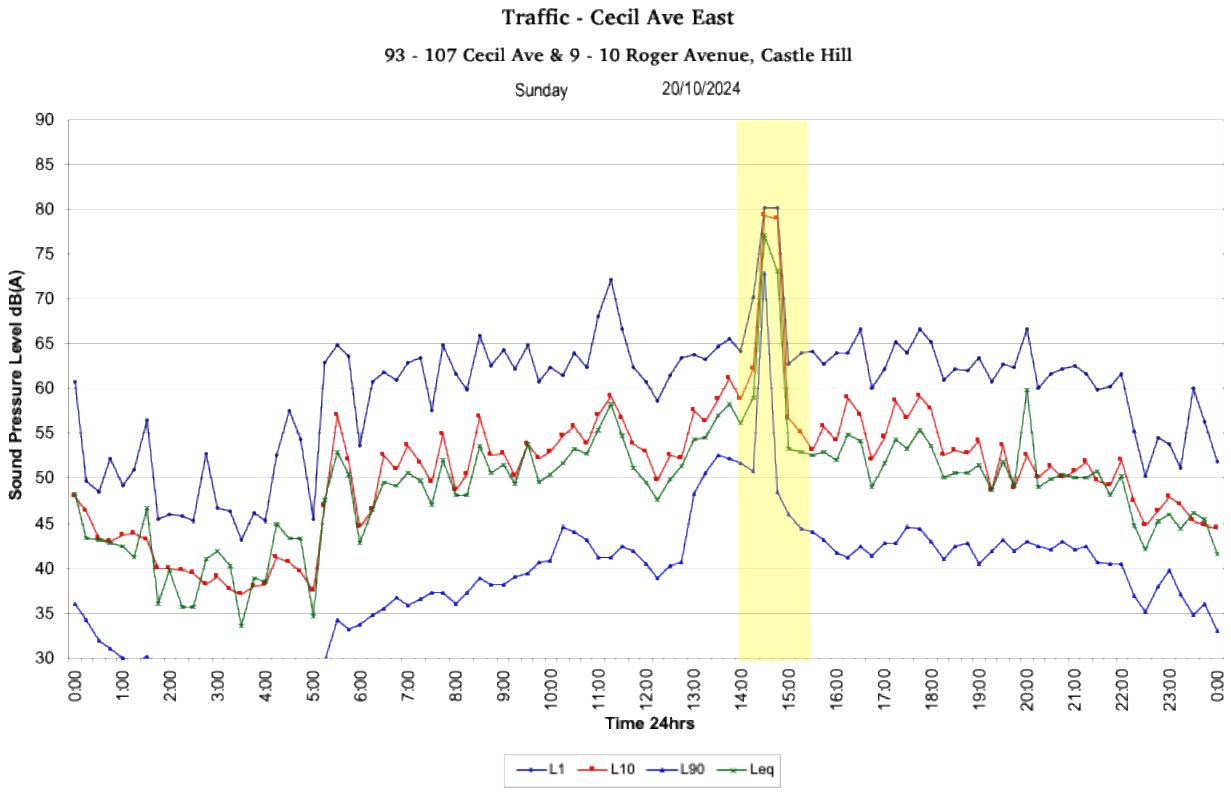
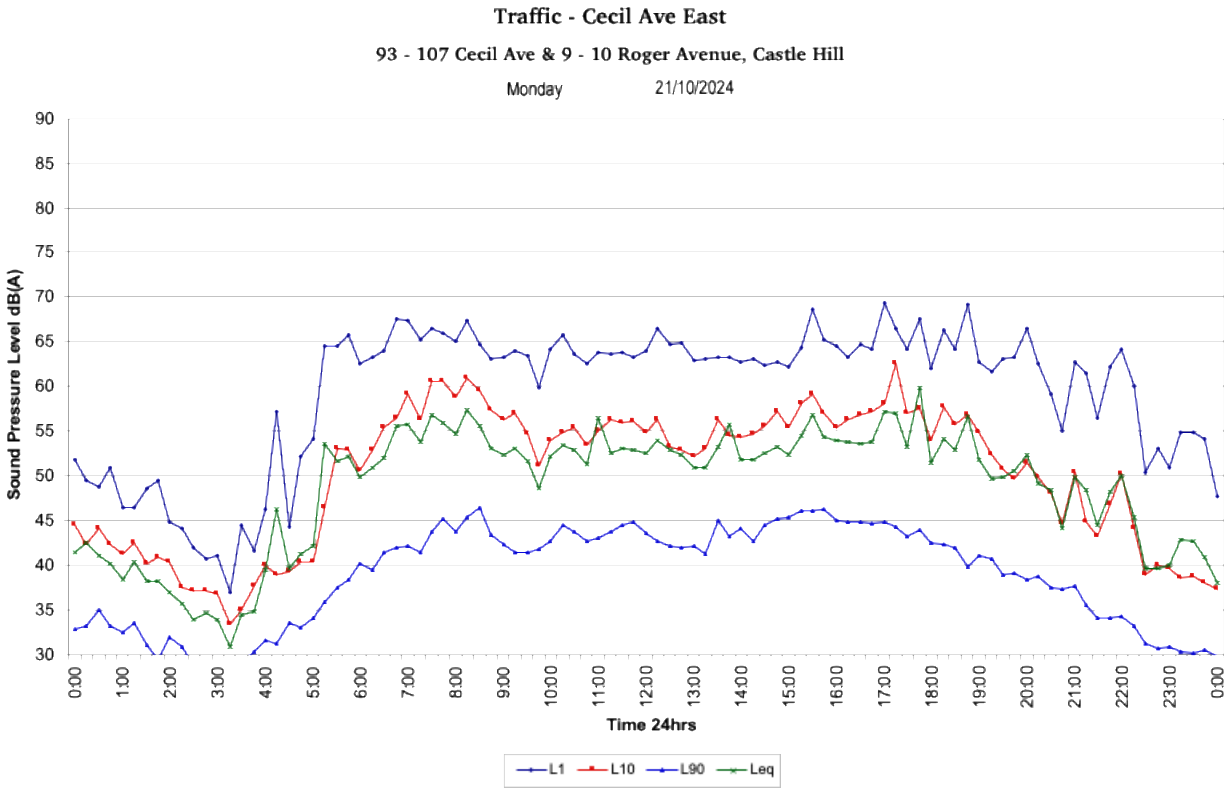
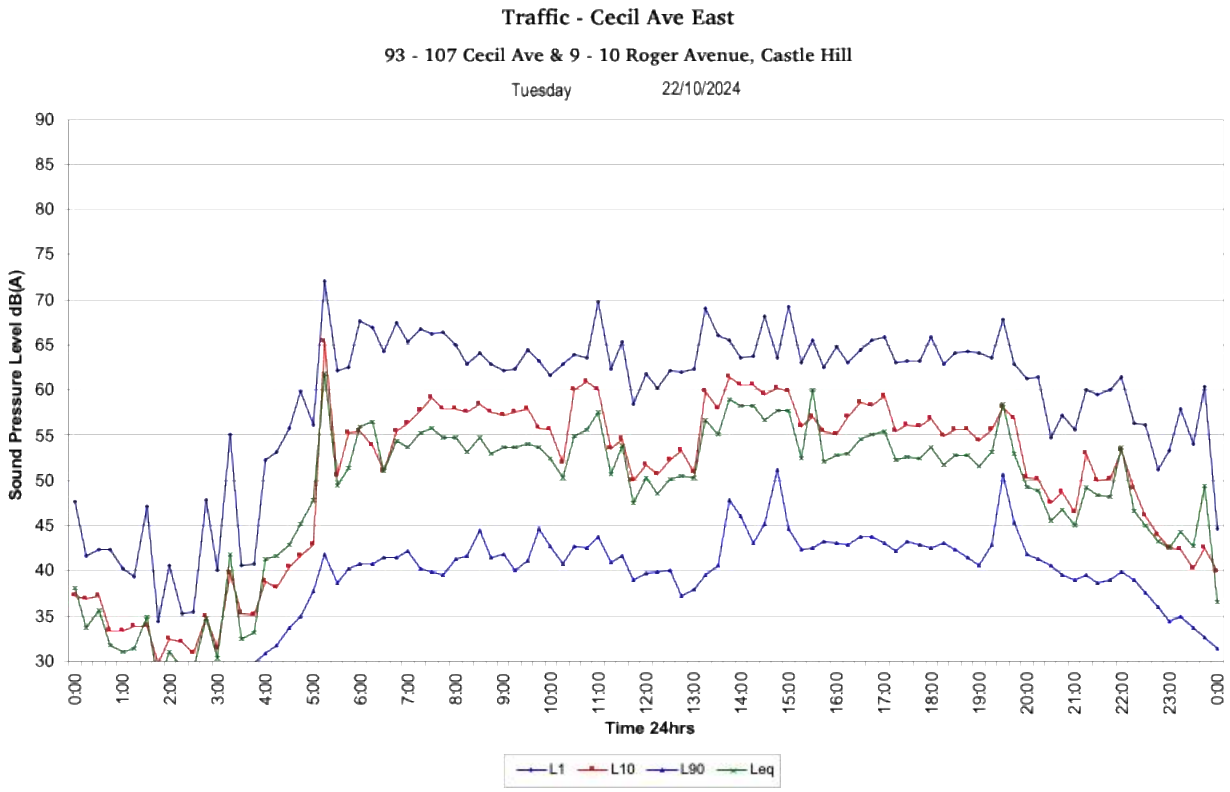

Traffic - Cecil Ave East
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Sunday 20/10/2024
Sound Pressure Level dB(A)
Time 24hrs
L1 L10 L90 Leq


Traffic - Cecil Ave East
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Monday 21/10/2024
Sound Pressure Level dB(A)
Time 24hrs
L1 L10 L90 Leq


Traffic - Cecil Ave East
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Tuesday 22/10/2024
Sound Pressure Level dB(A)
Time 24hrs
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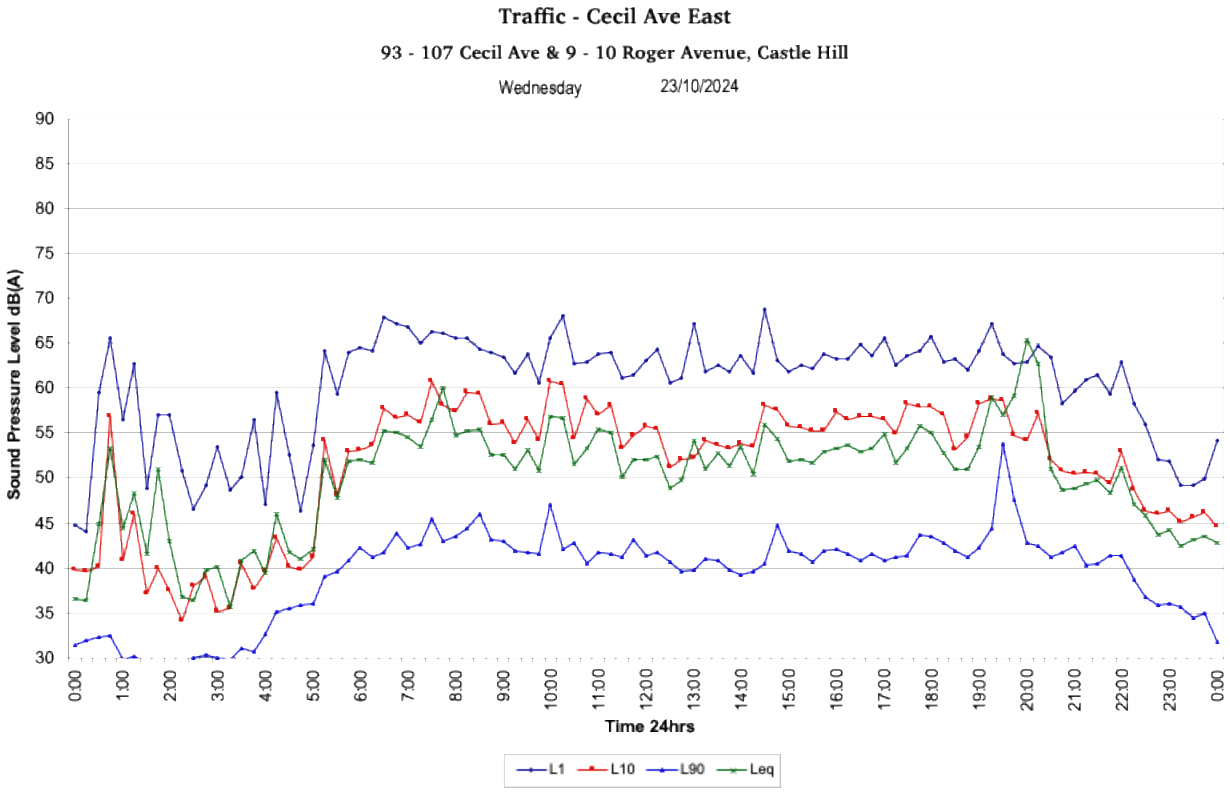
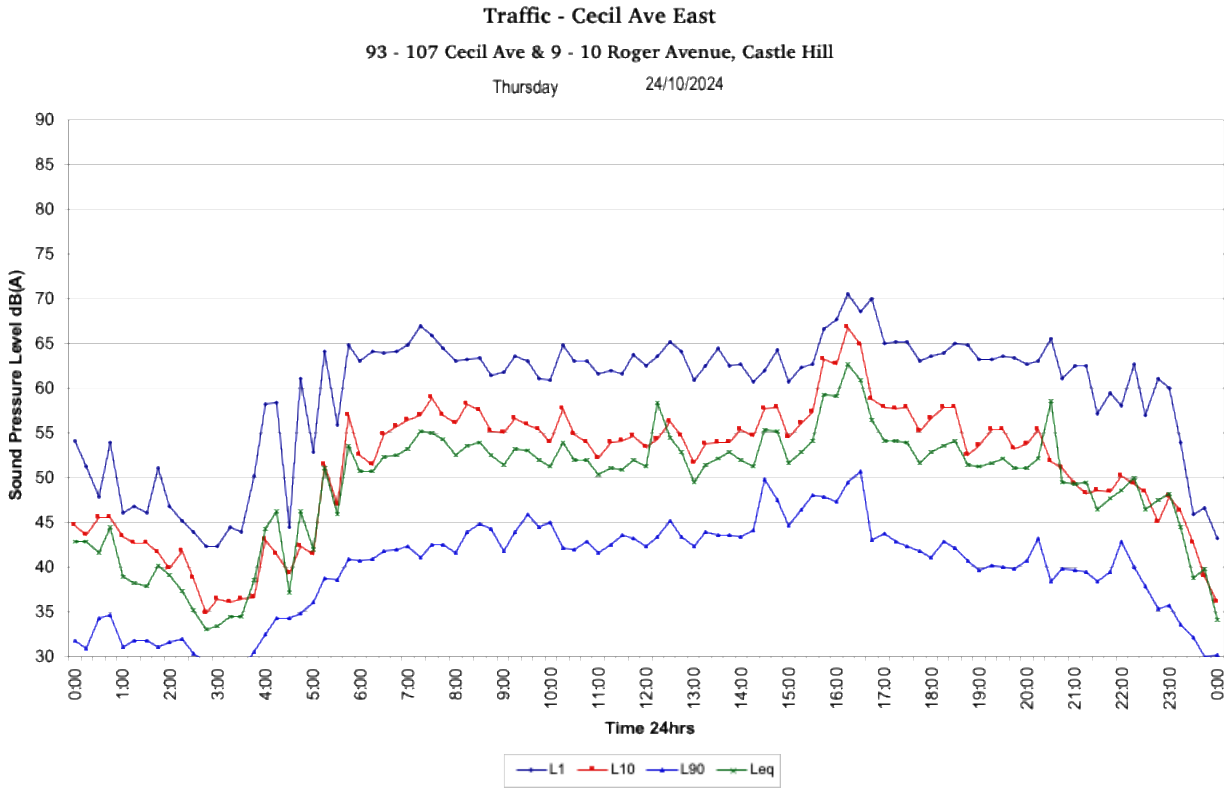

Traffic - Cecil Ave East
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Wednesday 23/10/2024
Sound Pressure Level dB(A)
Time 24hrs
L1 L10 L90 Leq


Traffic - Cecil Ave East
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Thursday 24/10/2024
Sound Pressure Level dB(A)
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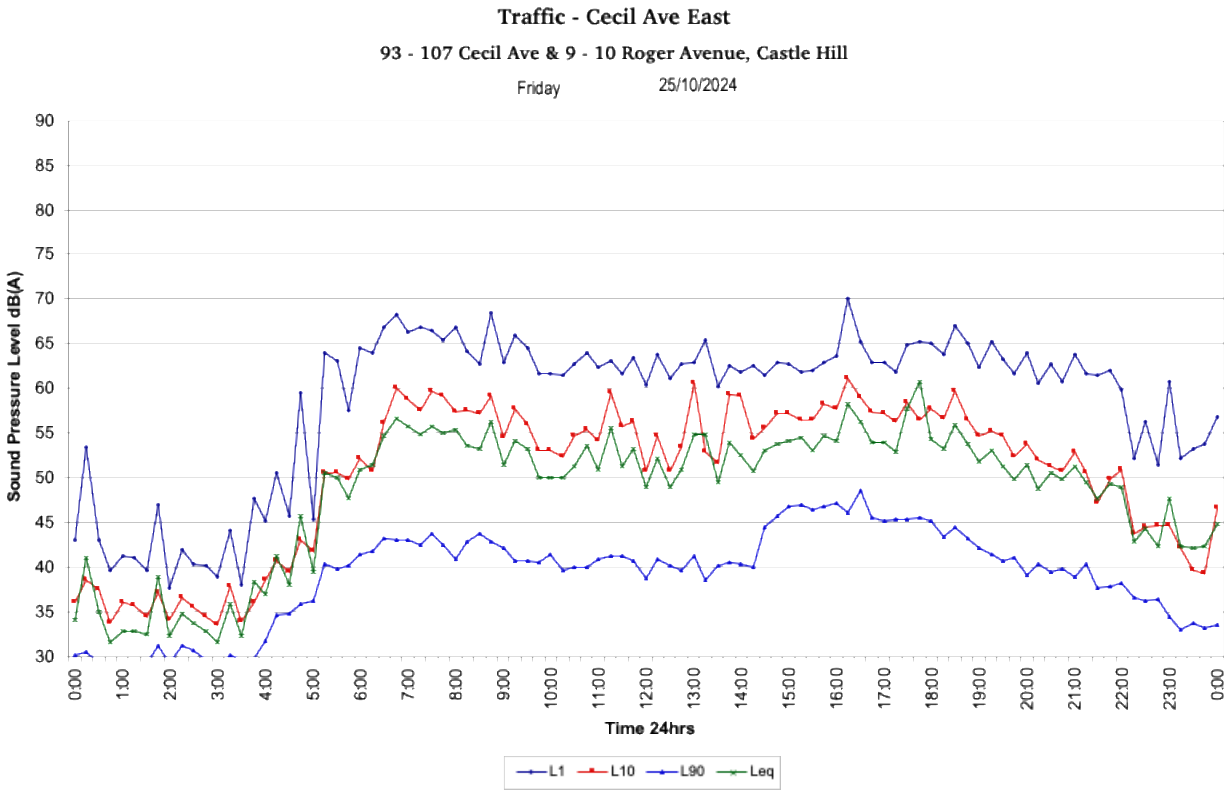
Traffic - Cecil Ave East
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Friday 25/10/2024
Sound Pressure Level dB(A)
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Time 24hrs
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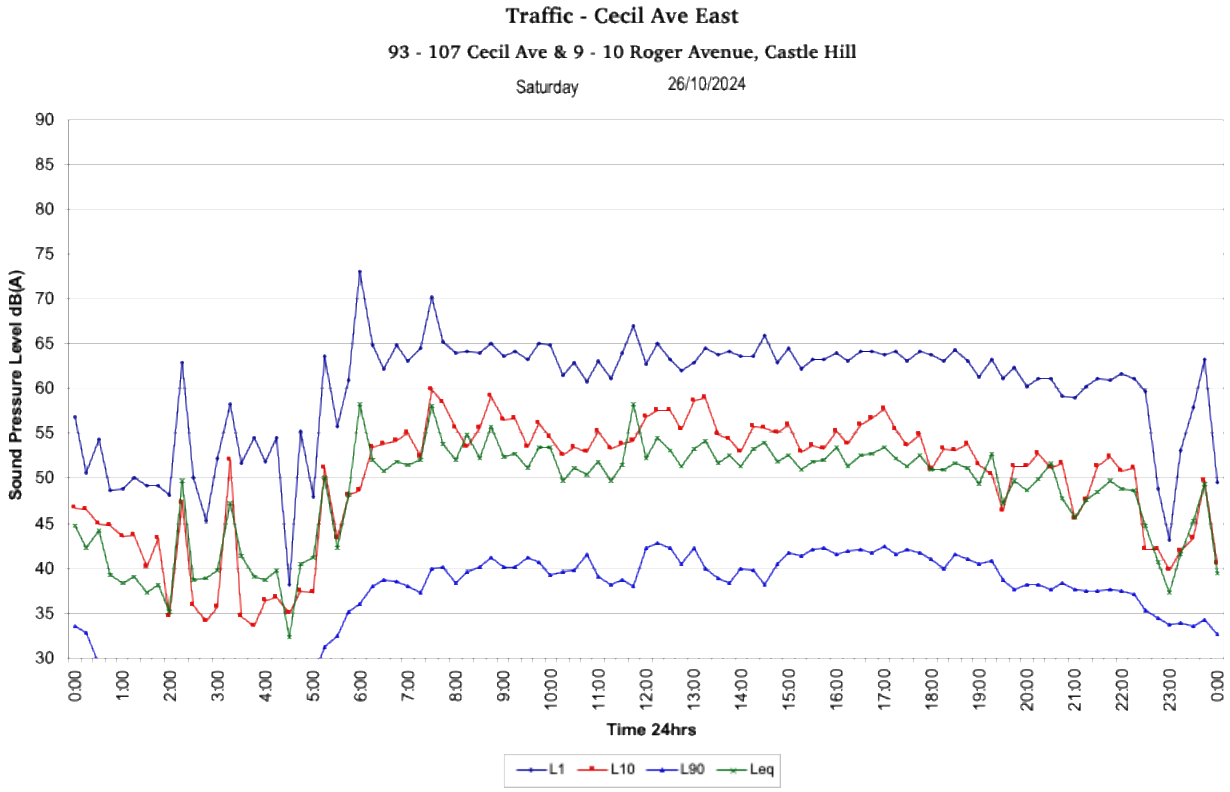
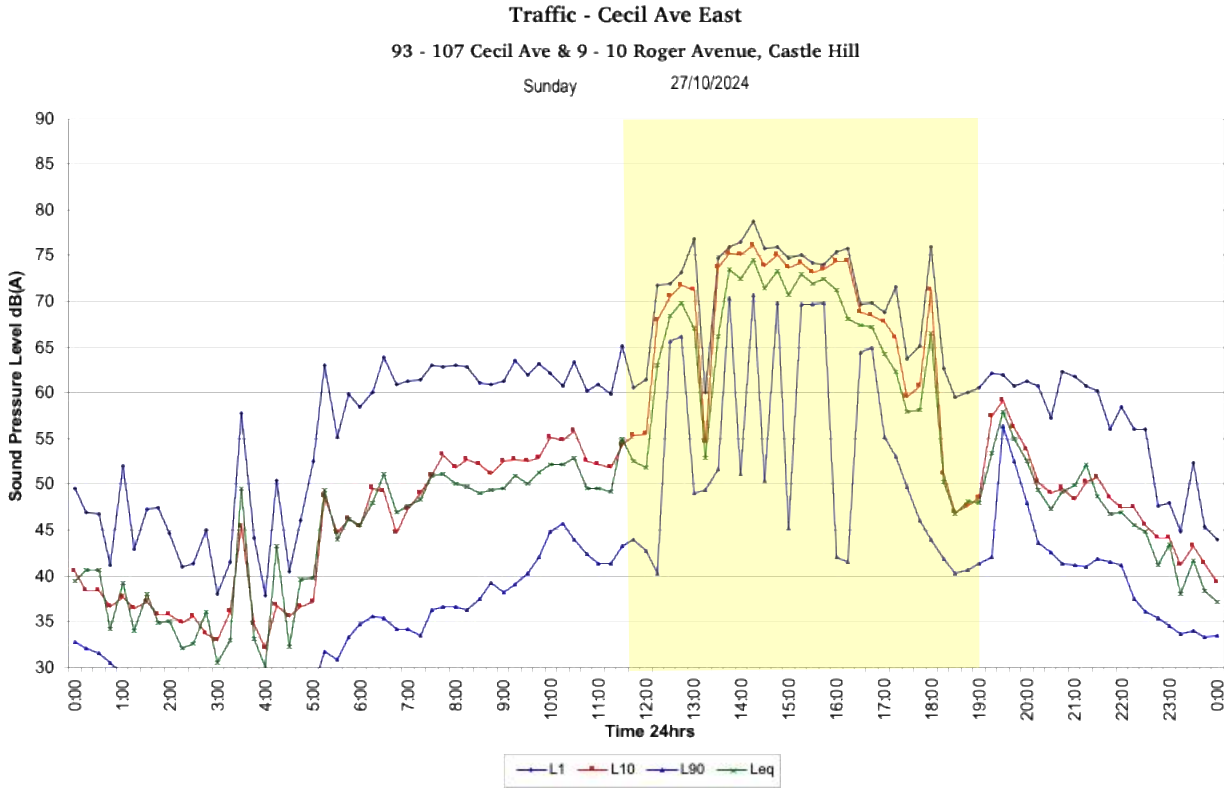
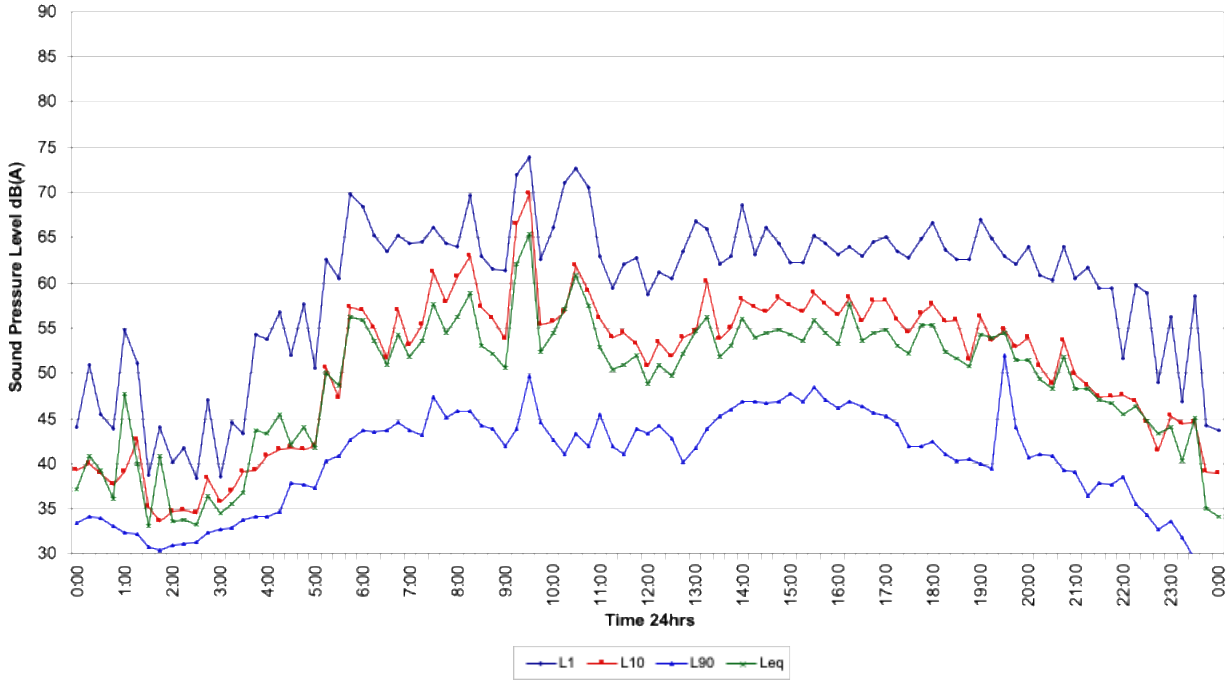

Traffic - Cecil Ave East
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Saturday 26/10/2024
Sound Pressure Level dB(A)
Time 24hrs
L1 L10 L90 Leq


Traffic - Cecil Ave East
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Sunday 27/10/2024
Sound Pressure Level dB(A)
Time 24hrs
L1 L10 L90 Leq

Traffic - Cecil Ave East

93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill

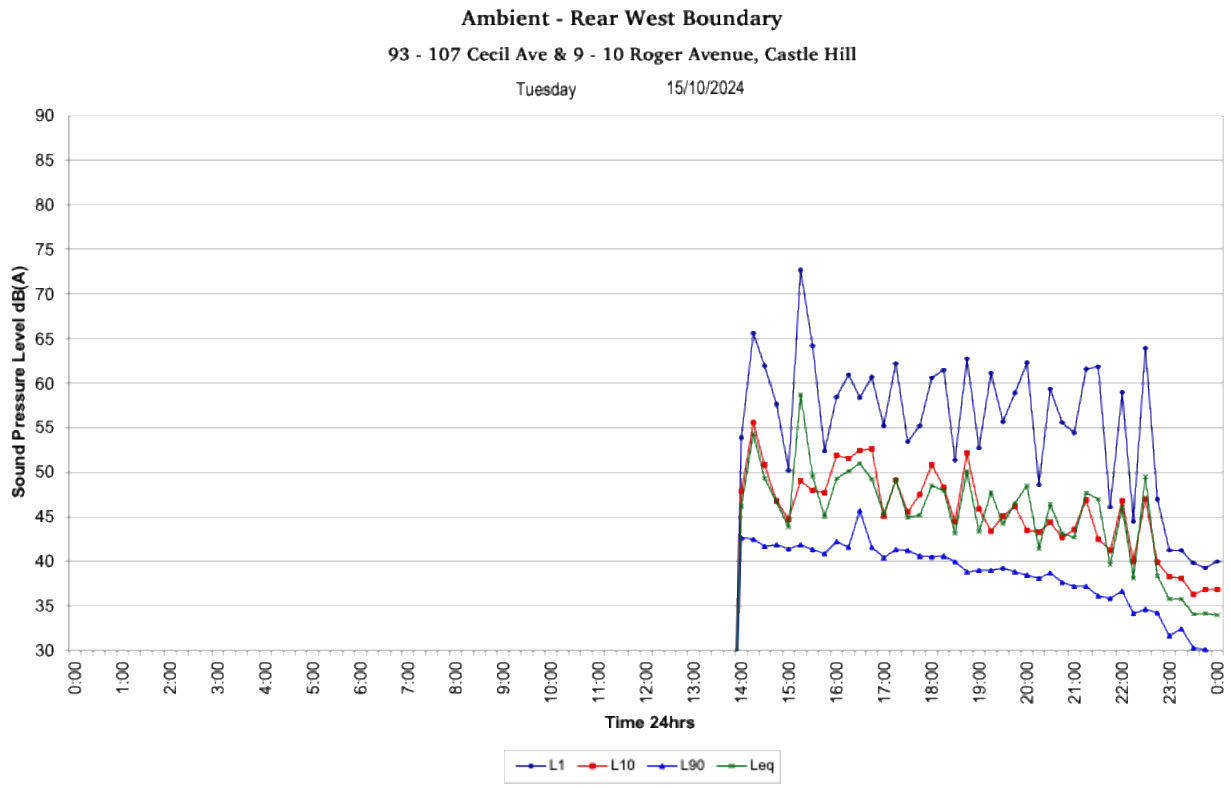
Monday 28/10/2024

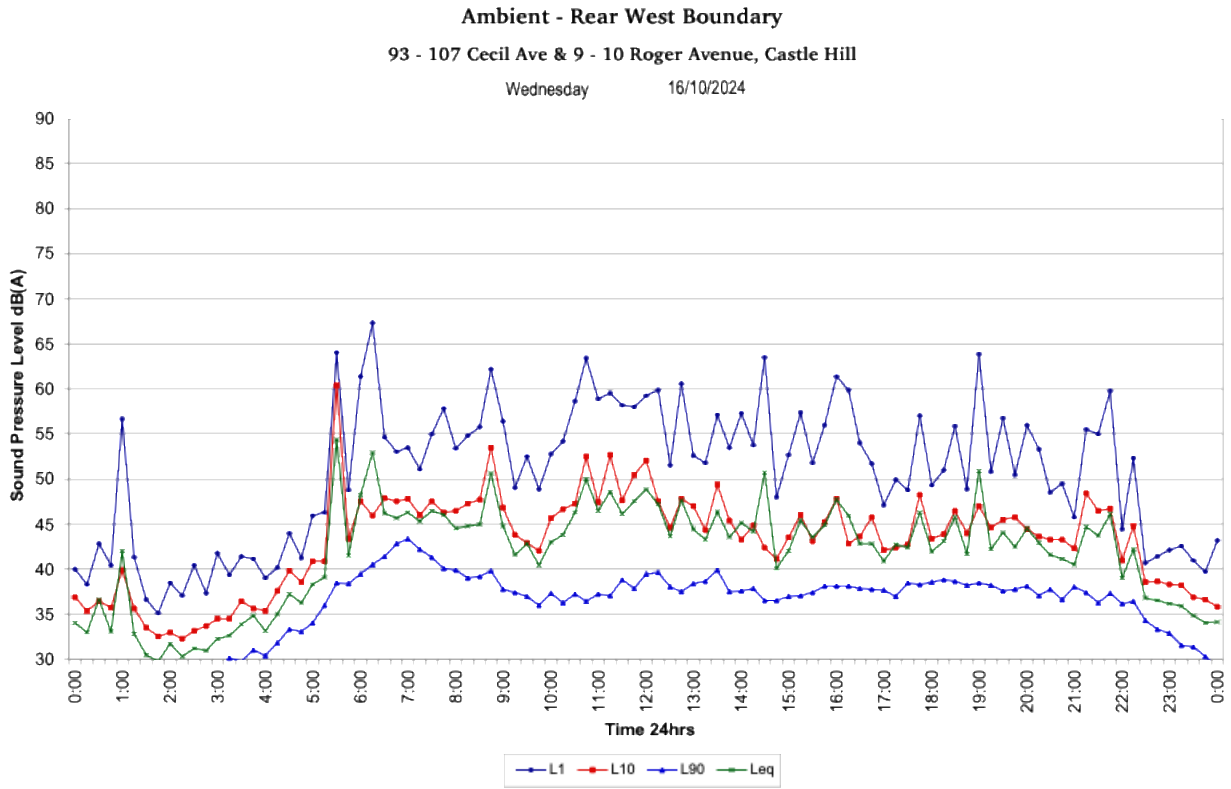


Traffic - Cecil Ave East

93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill

Tuesday 29/10/2024

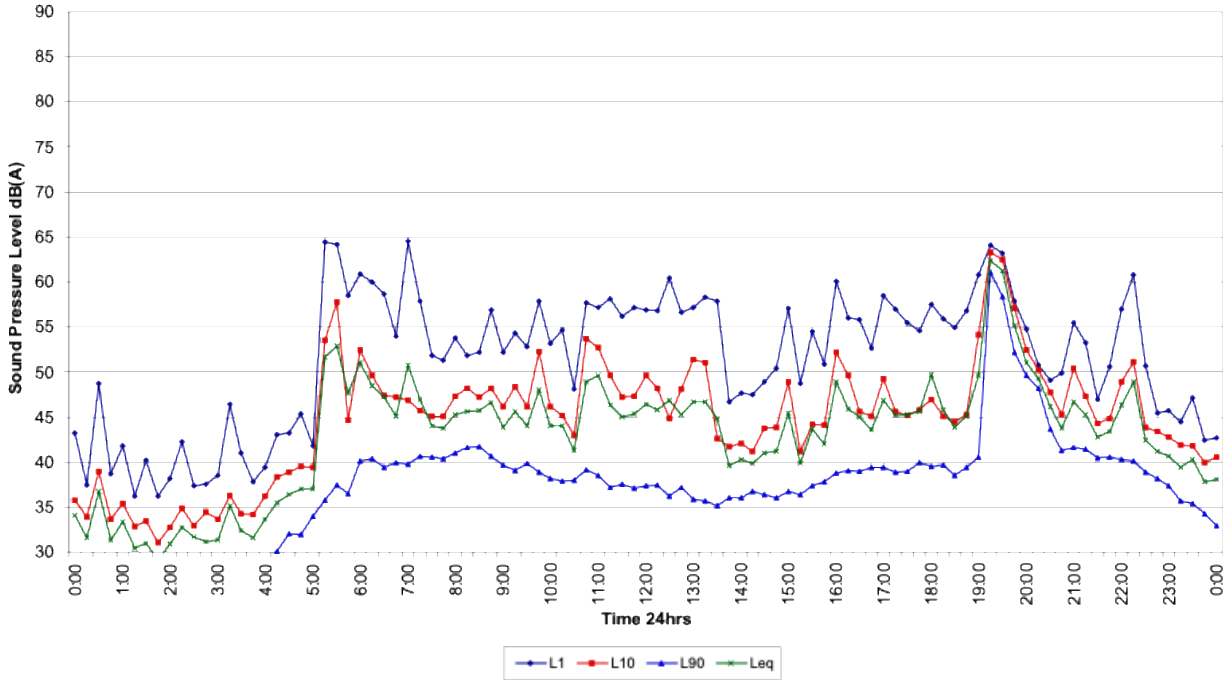

Ambient - Rear West Boundary
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Tuesday 15/10/2024
Sound Pressure Level dB(A)
Time 24hrs
L1 L10 L90 Leq


Ambient - Rear West Boundary
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Wednesday 16/10/2024
Sound Pressure Level dB(A)
Time 24hrs
L1 L10 L90 Leq

Ambient - Rear West Boundary

93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill

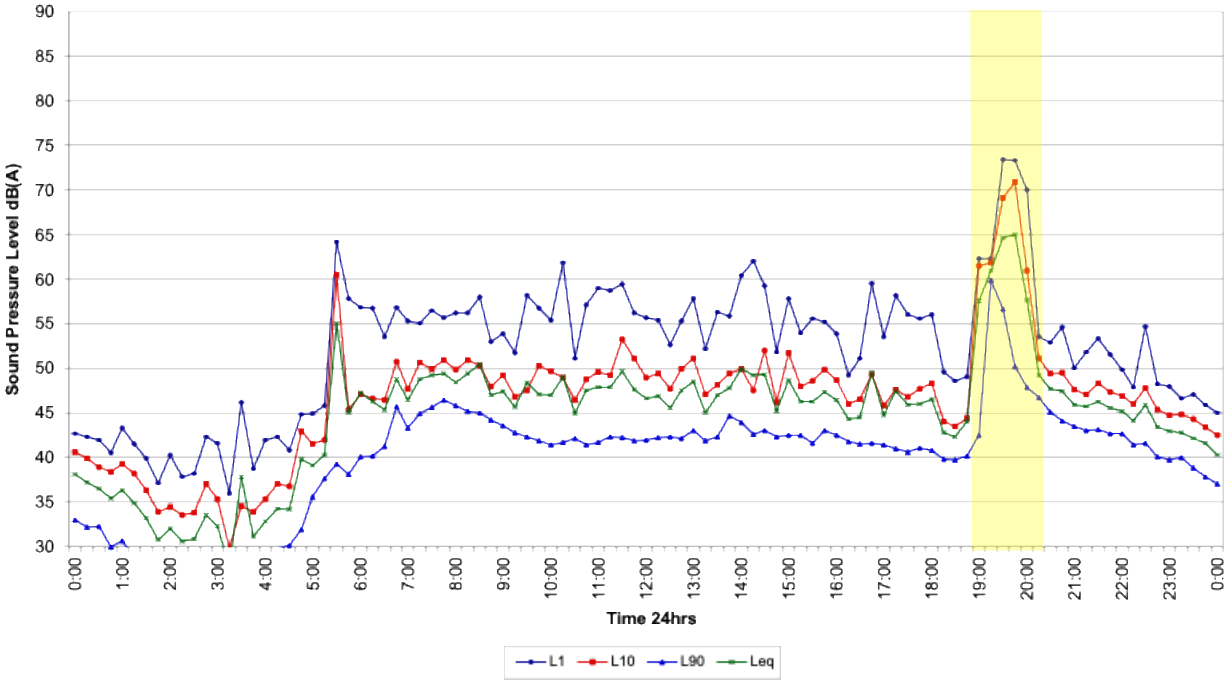
Thursday 17/10/2024

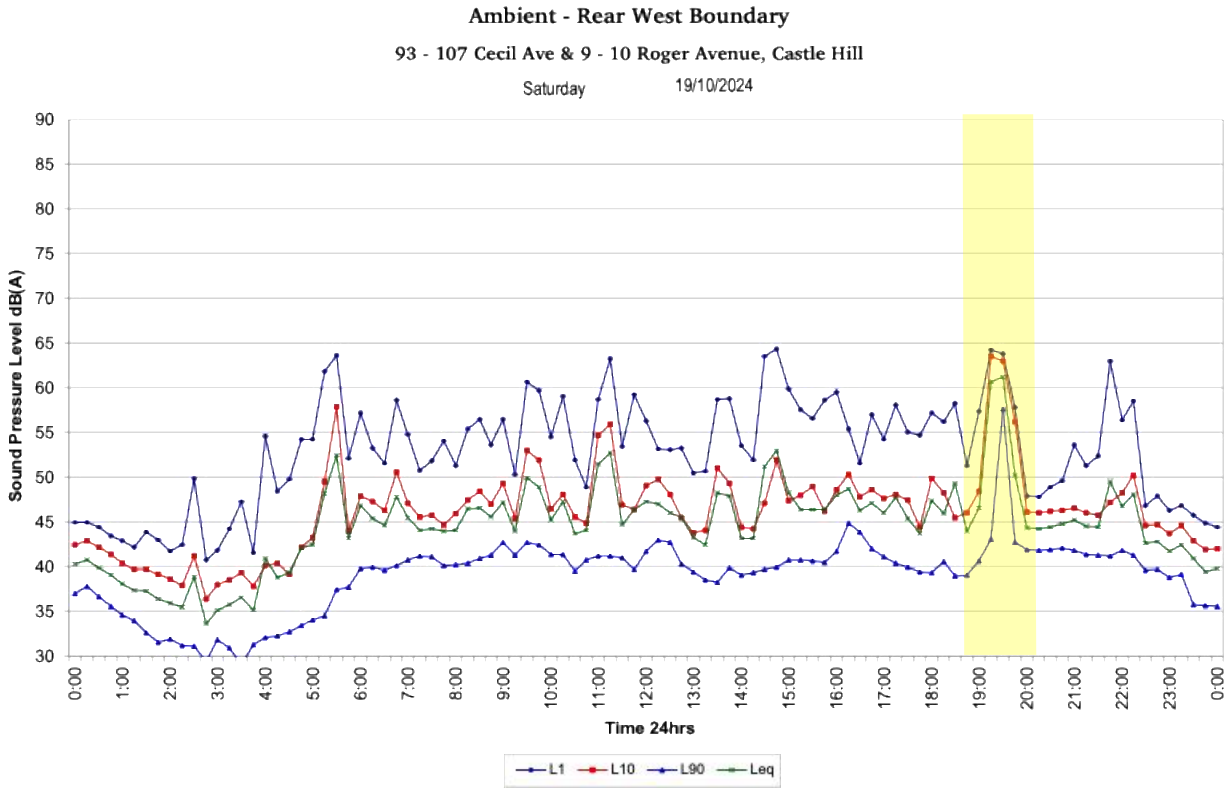


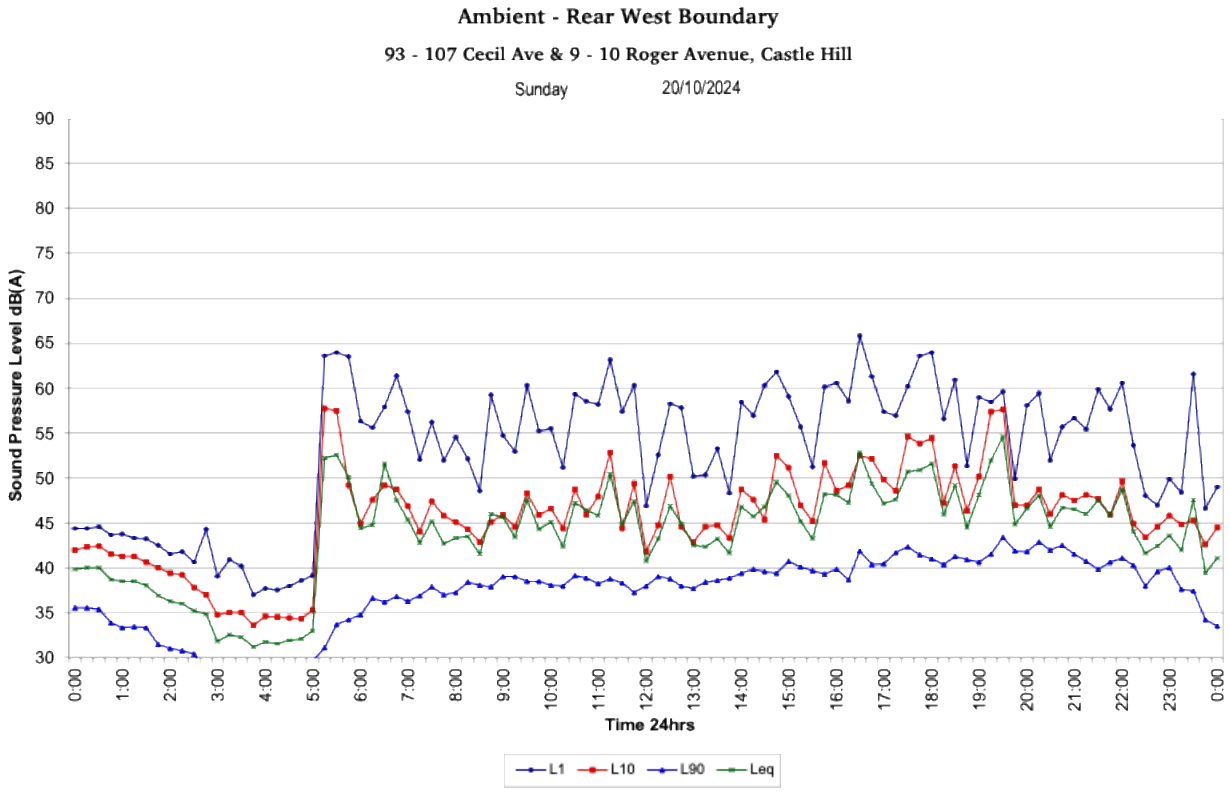
Ambient - Rear West Boundary

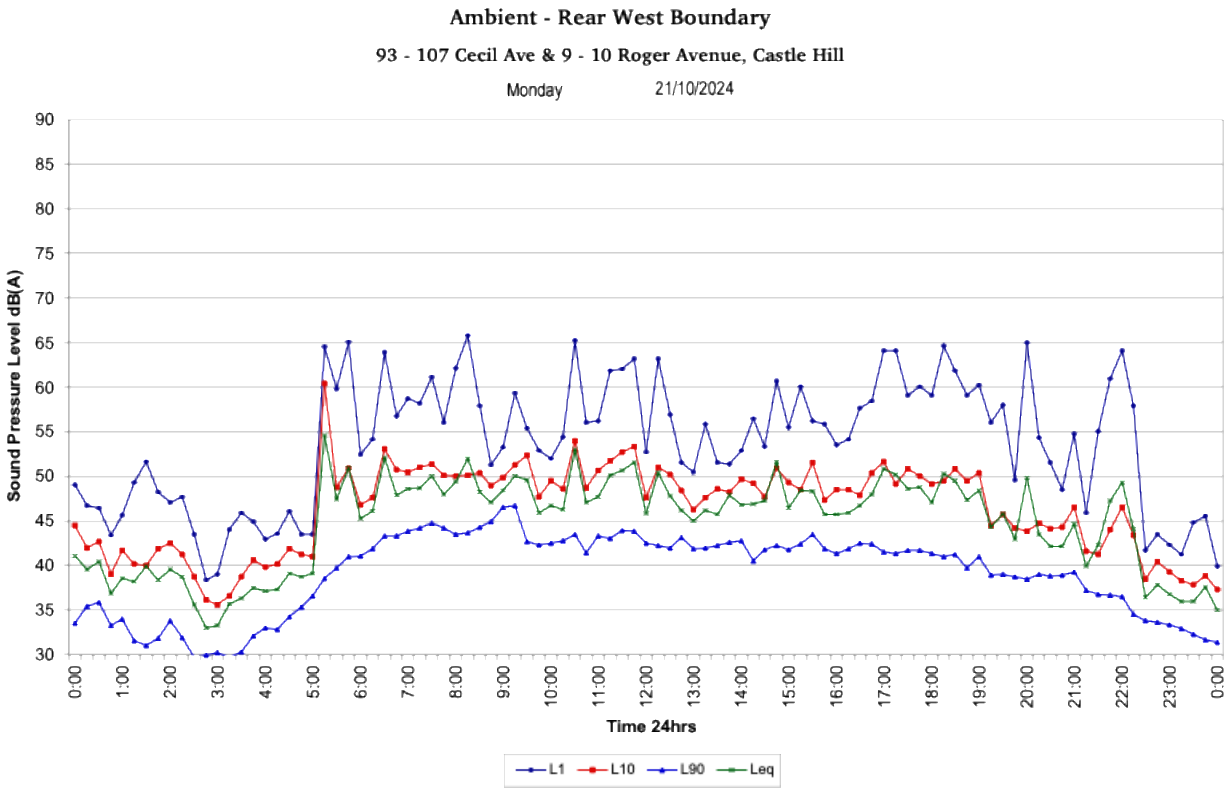
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill

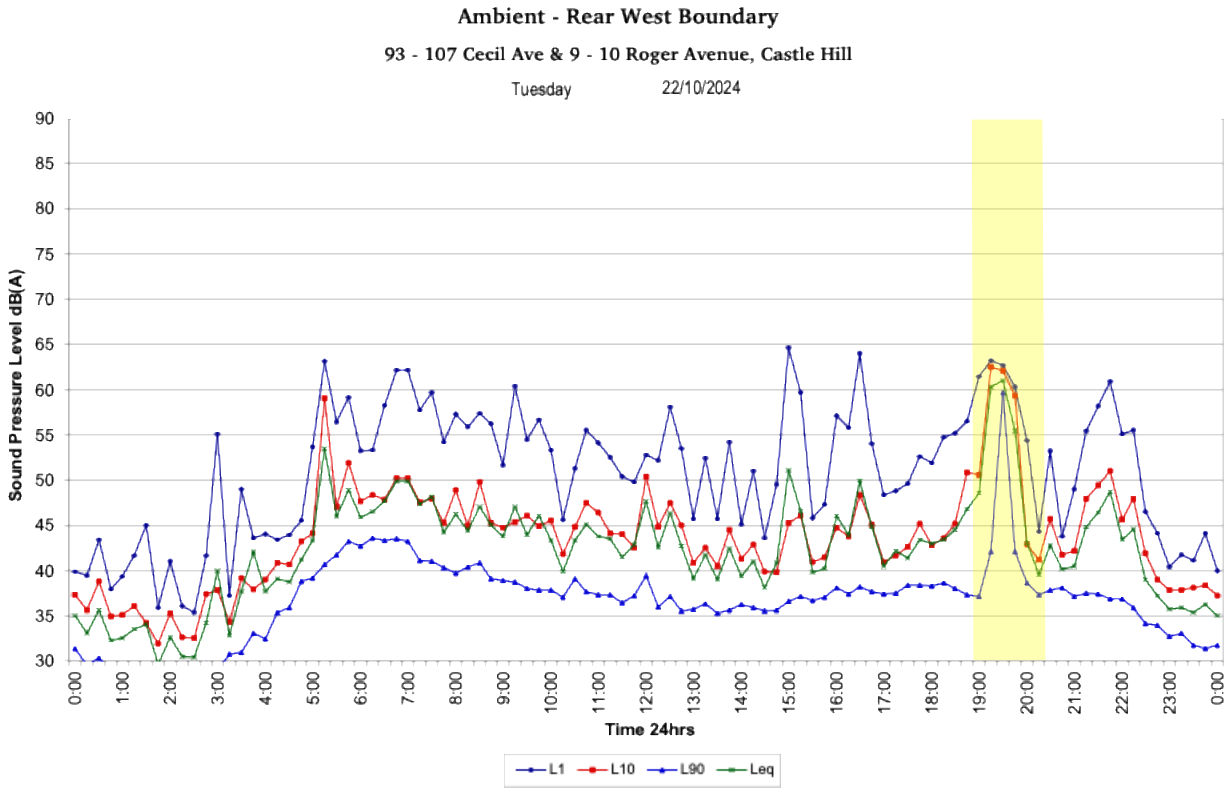
Friday 18/10/2024

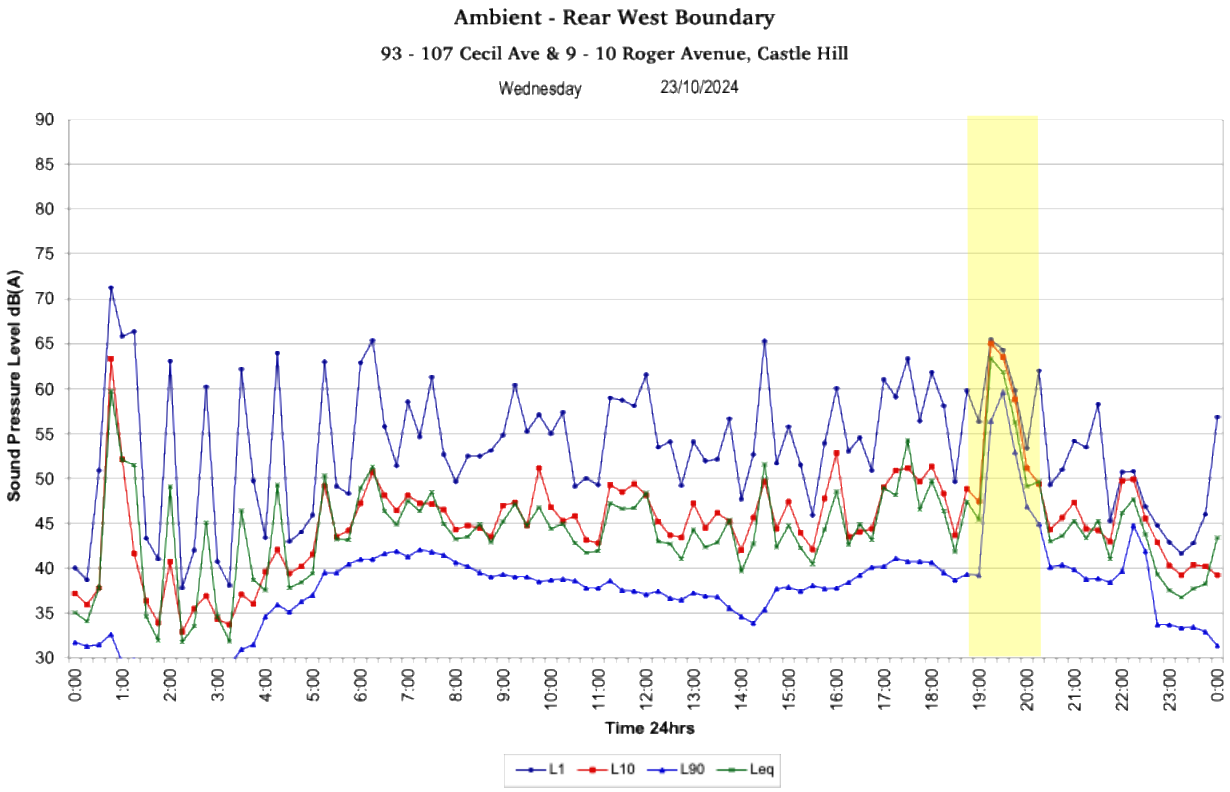


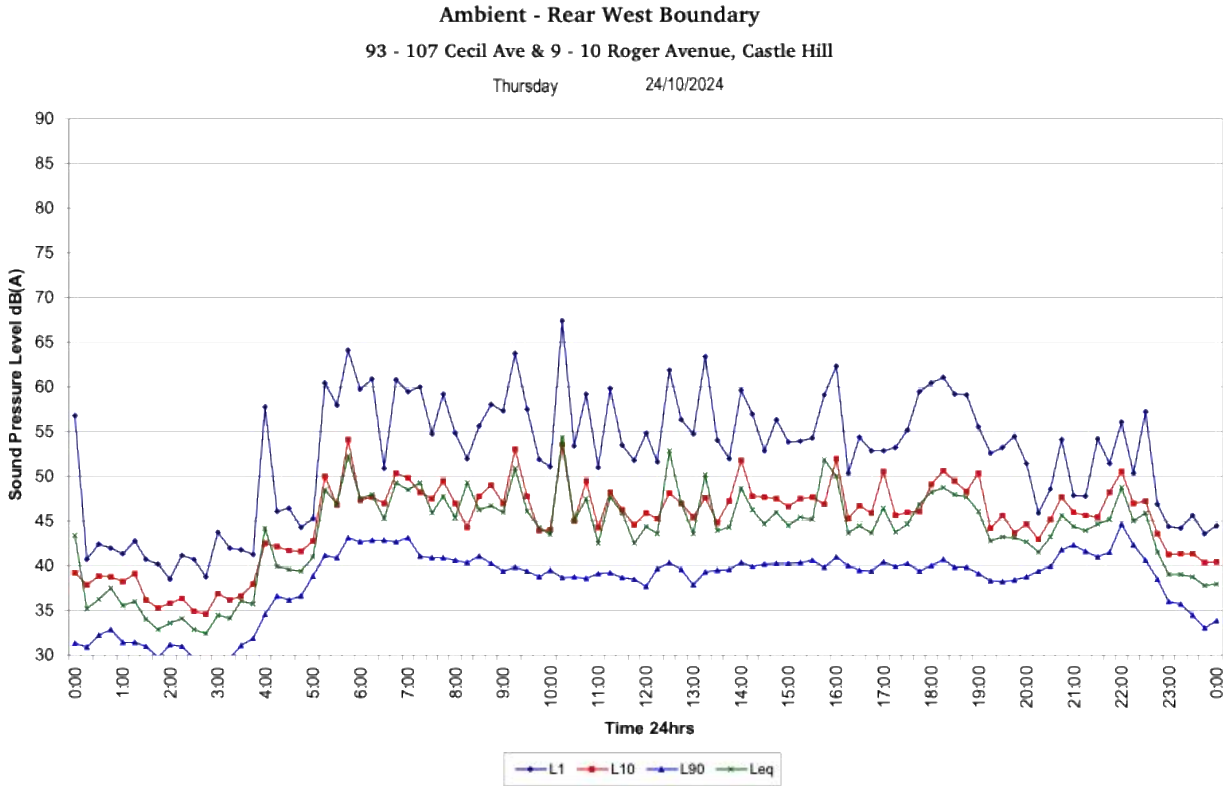

Ambient - Rear West Boundary
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Saturday 19/10/2024
Sound Pressure Level dB(A)
Time 24hrs
L1 L10 L90 Leq

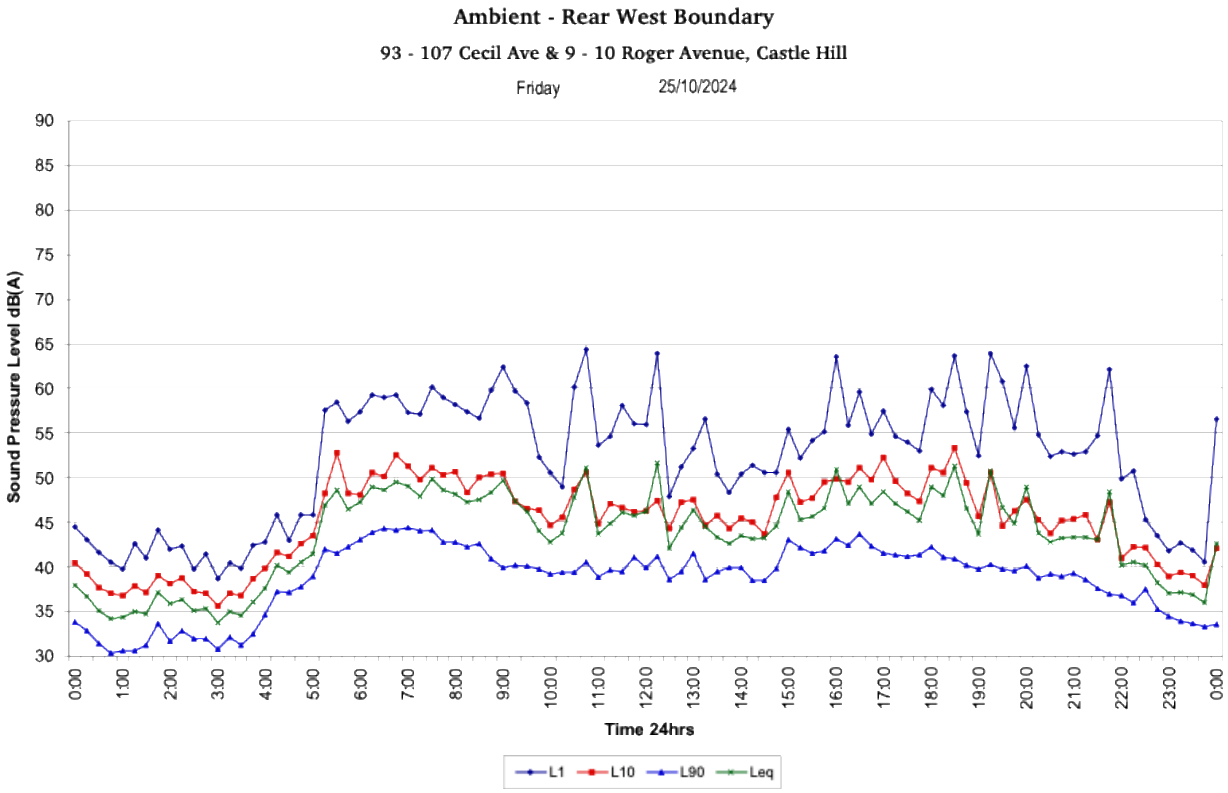

Ambient - Rear West Boundary
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Sunday 20/10/2024
Sound Pressure Level dB(A)
Time 24hrs
L1 L10 L90 Leq

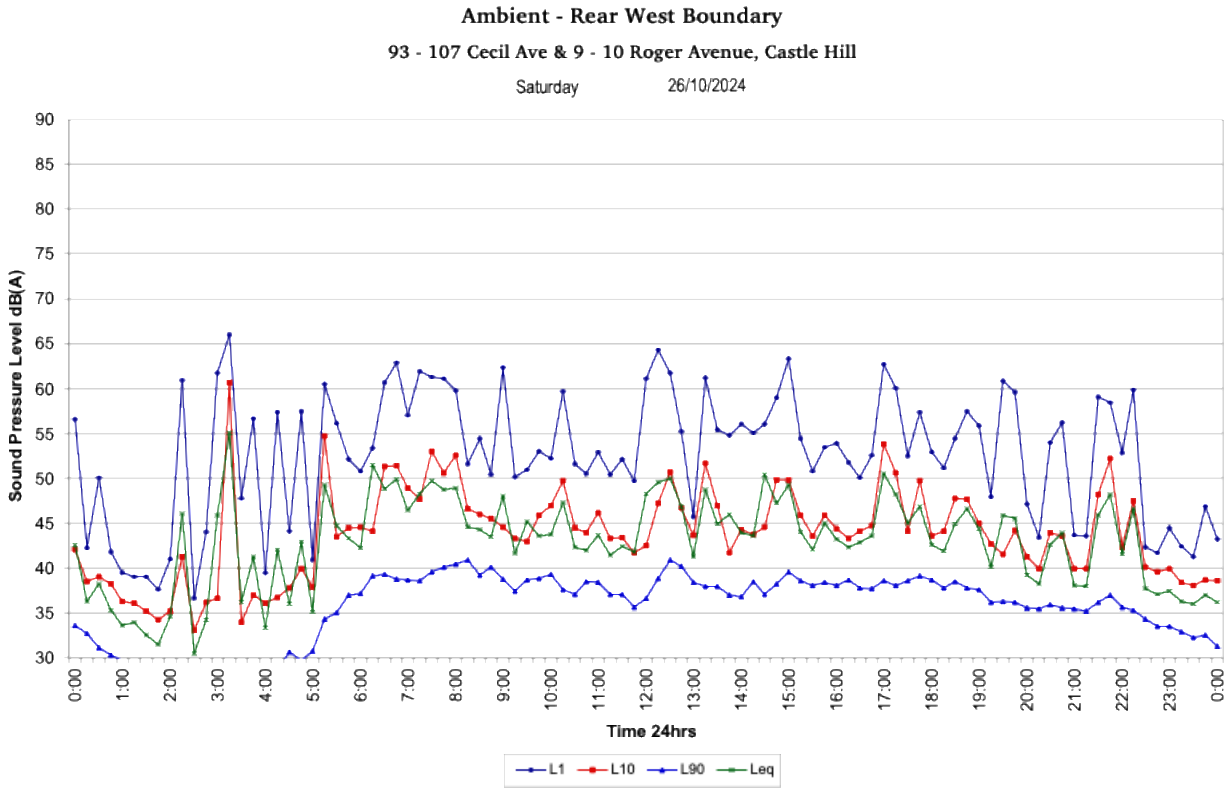

Ambient - Rear West Boundary
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Monday 21/10/2024
Sound Pressure Level dB(A)
Time 24hrs
L1 L10 L90 Leq

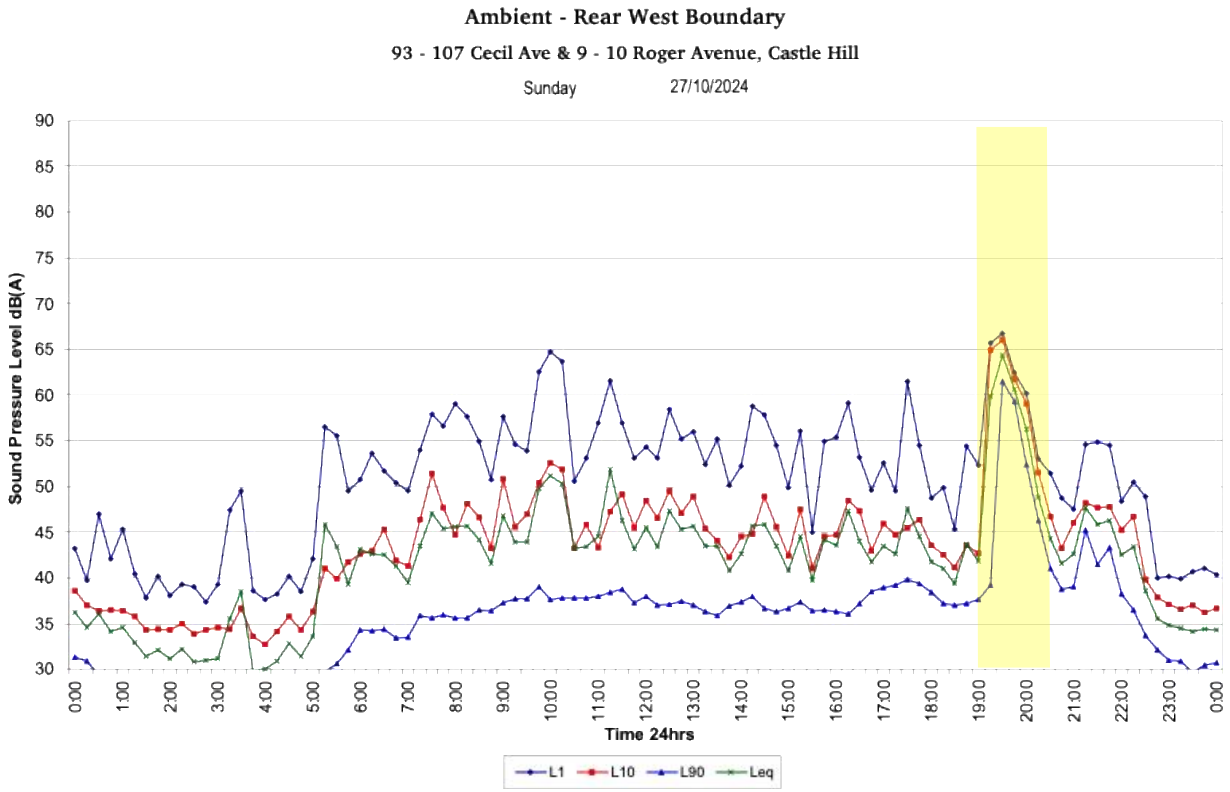

Ambient - Rear West Boundary
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Tuesday 22/10/2024
Sound Pressure Level dB(A)
Time 24hrs
L1 L10 L90 Leq

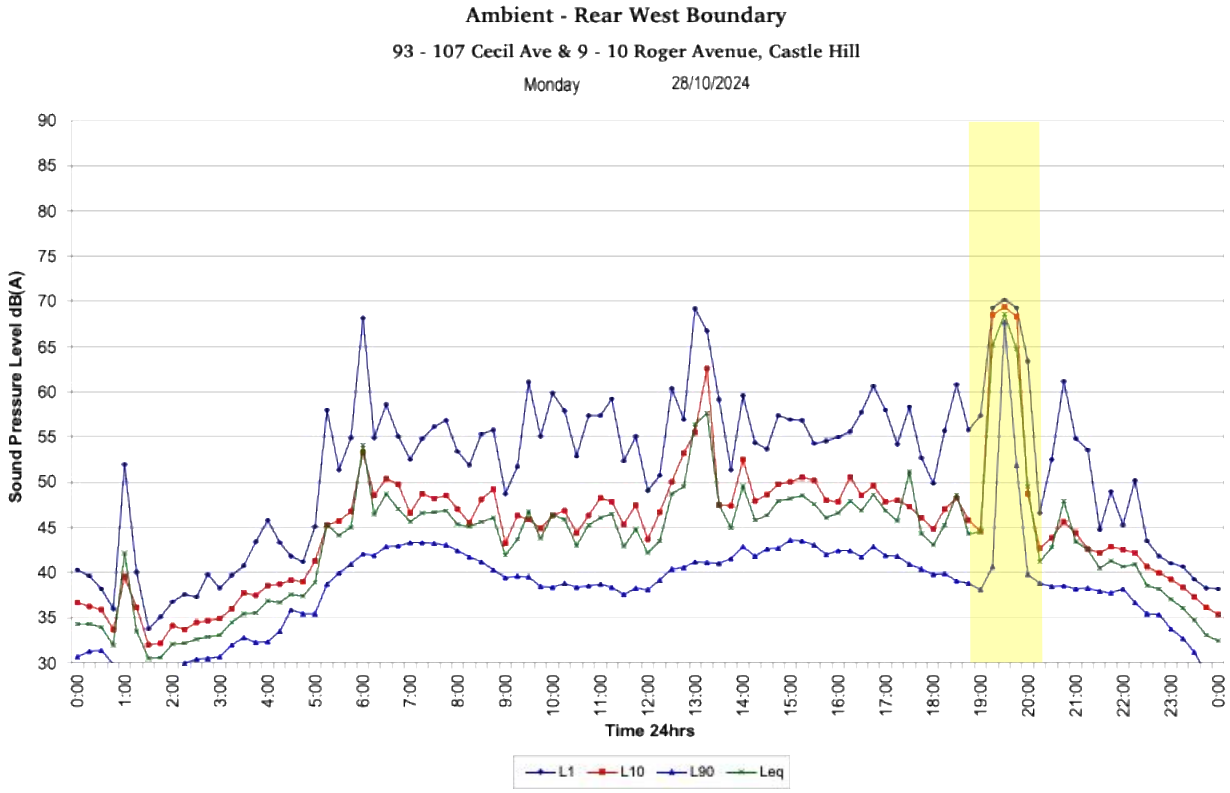

Ambient - Rear West Boundary
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Wednesday 23/10/2024
Sound Pressure Level dB(A)
Time 24hrs
L1 L10 L90 Leq

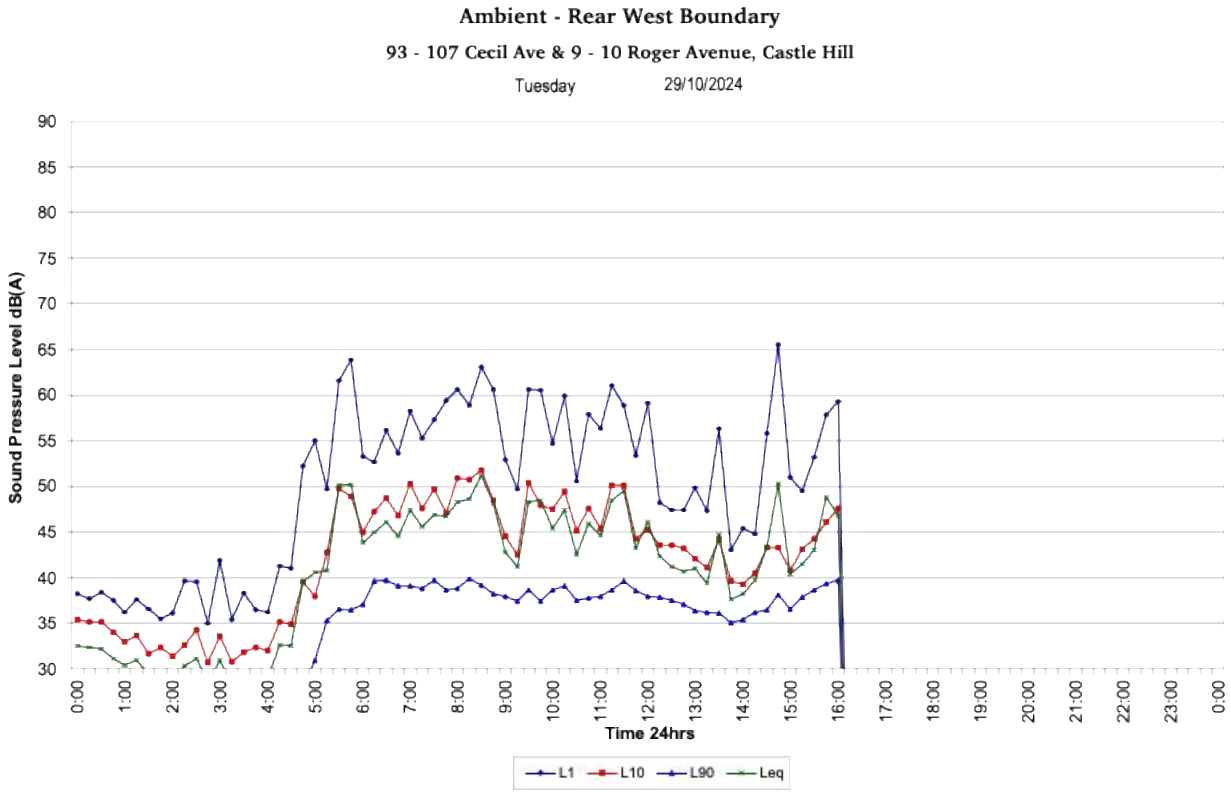

Ambient - Rear West Boundary
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Thursday 24/10/2024
Sound Pressure Level dB(A)
Time 24hrs
L1 L10 L90 Leq


Ambient - Rear West Boundary
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Friday 25/10/2024
Sound Pressure Level dB(A)
90
85
80
75
70
65
60
55
50
45
40
35
30
0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 11:00 12:00 13:00 14:00 15:00 16:00 17:00 18:00 19:00 20:00 21:00 22:00 23:00 0:00
Time 24hrs
L1 L10 L90 Leq


Ambient - Rear West Boundary
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Saturday 26/10/2024
Sound Pressure Level dB(A)
90
85
80
75
70
65
60
55
50
45
40
35
30
0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 11:00 12:00 13:00 14:00 15:00 16:00 17:00 18:00 19:00 20:00 21:00 22:00 23:00 0:00
Time 24hrs
L1 L10 L90 Leq


Ambient - Rear West Boundary
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Sunday 27/10/2024
Sound Pressure Level dB(A)
Time 24hrs
L1 L10 L90 Leq


Ambient - Rear West Boundary
93 - 107 Cecil Ave & 9 - 10 Roger Avenue, Castle Hill
Monday 28/10/2024
Sound Pressure Level dB(A)
Time 24hrs
L1 L10 L90 Leq



*Data highlighted has been removed.

Appendix C – Calibration Certificate

Acoustic Research Labs Pty Ltd
Unit 36/14 Loyalty Rd
North Rocks NSW AUSTRALIA 2151
Ph: +61 2 9484 0800 A.B.N. 65 160 399 119
www.acousticresearch.com.au

Sound Level Meter
IEC 61672-3:2013

Calibration Certificate
Calibration Number C23753

Client Details	Rodney Stevens Acoustics Pty Ltd PO Box 522 Wahroonga NSW 2076
Equipment Tested/ Model Number :	NL-42EX
Instrument Serial Number :	00810779
Microphone Serial Number :	170393
Pre-amplifier Serial Number :	72896
Firmware Version :	2.0

Pre-Test Atmospheric Conditions		**Post-Test Atmospheric Conditions**	
Ambient Temperature :	23 °C	**Ambient Temperature :**	23.5 °C
Relative Humidity :	41.6 %	**Relative Humidity :**	42 %
Barometric Pressure :	101.7 kPa	**Barometric Pressure :**	101.71 kPa

Calibration Technician :	Max Moore	**Secondary Check:**	Megan Williams
Calibration Date :	17 Oct 2023	**Report Issue Date :**	17 Oct 2023

Approved Signatory : Ken Williams

Clause and Characteristic Tested	Result	Clause and Characteristic Tested	Result
12: Acoustical Sig. tests of a frequency weighting	*Pass*	17: Level linearity incl. the level range control	*N/A*
13: Electrical Sig. tests of frequency weightings	*Pass*	18: Toneburst response	*Pass*
14: Frequency and time weightings at 1 kHz	*Pass*	19: C Weighted Peak Sound Level	*Pass*
15: Long Term Stability	*Pass*	20: Overload Indication	*Pass*
16: Level linearity on the reference level range	*Pass*	21: High Level Stability	*Pass*

The sound level meter submitted for testing has successfully completed the class 2 periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed.

However, no general statement or conclusion can be made about conformance of the sound level meter to the full requirements of IEC 61672-1:2013 because evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2013 and because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

Uncertainties of Measurement -

Acoustic Tests		Environmental Conditions	
125Hz	*±0.13 dB*	*Temperature*	*±0.1 °C*
1kHz	*±0.13 dB*	*Relative Humidity*	*±1.9 %*
8kHz	*±0.14 dB*	*Barometric Pressure*	*±0.014 kPa*
Electrical Tests	*±0.13 dB*		

All uncertainties are derived at the 95% confidence level with a coverage factor of 2.

This calibration certificate is to be read in conjunction with the calibration test report.

Accredited for compliance with ISO/IEC 17025 - Calibration.
Acoustic Research Labs Pty Ltd is NATA Accredited Laboratory Number 14172.

The results of the tests, calibrations and/or measurements included in this document are traceable to SI units.

NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration and inspection reports.

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Acoustic Research Labs Pty Ltd
Unit 36/14 Loyalty Rd
North Rocks NSW AUSTRALIA 2151
Ph: +61 2 9484 0800 A.B.N. 65 160 399 119
www.acousticresearch.com.au

Sound Level Meter
IEC 61672-3:2013
Calibration Certificate

Calibration Number C23249

Client Details	Rodney Stevens Acoustics Pty Ltd PO Box 522 Wahroonga NSW 2076
Equipment Tested/ Model Number :	Rion NL-42EX
Instrument Serial Number :	00546393
Microphone Serial Number :	152907
Pre-amplifier Serial Number :	46605
Firmware Version :	2.0

Pre-Test Atmospheric Conditions		**Post-Test Atmospheric Conditions**	
Ambient Temperature :	23°C	**Ambient Temperature :**	23.5°C
Relative Humidity :	53.2%	**Relative Humidity :**	51.6%
Barometric Pressure :	101.9kPa	**Barometric Pressure :**	101.87kPa

Calibration Technician :	Shaheen Boaz	**Secondary Check:**	Dhanush Bonu
Calibration Date :	6 Jun 2023	**Report Issue Date :**	7 Jun 2023

Approved Signatory : Ken Williams

Clause and Characteristic Tested	Result	Clause and Characteristic Tested	Result
12: Acoustical Sig. tests of a frequency weighting	*Pass*	17: Level linearity incl. the level range control	*N/A*
13: Electrical Sig. tests of frequency weightings	*Pass*	18: Toneburst response	*Pass*
14: Frequency and time weightings at 1 kHz	*Pass*	19: C Weighted Peak Sound Level	*Pass*
15: Long Term Stability	*Pass*	20: Overload Indication	*Pass*
16: Level linearity on the reference level range	*Pass*	21: High Level Stability	*Pass*

The sound level meter submitted for testing has successfully completed the class 2 periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed.

However, no general statement or conclusion can be made about conformance of the sound level meter to the full requirements of IEC 61672-1:2013 because evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2013 and because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

Uncertainties of Measurement -

Acoustic Tests		Environmental Conditions	
125Hz	*±0.13dB*	*Temperature*	*±0.1°C*
1kHz	*±0.13dB*	*Relative Humidity*	*±1.9%*
8kHz	*±0.14dB*	*Barometric Pressure*	*±0.014kPa*
Electrical Tests	*±0.13dB*		

All uncertainties are derived at the 95% confidence level with a coverage factor of 2.

This calibration certificate is to be read in conjunction with the calibration test report.

Accoustic Research Labs Pty Ltd is NATA Accredited Laboratory Number 14172.
Accredited for compliance with ISO/IEC 17025 - Calibration.

The results of the tests, calibrations and/or measurements included in this document are traceable to SI units.

NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration and inspection reports.

Acoustic Research Labs Pty Ltd
Unit 36/14 Loyalty Rd
North Rocks NSW AUSTRALIA 2151
Ph: +61 2 9484 0800 A.B.N. 65 160 399 119
www.acousticresearch.com.au

Sound Level Meter
IEC 61672-3:2013
Calibration Certificate

Calibration Number C24524

Client Details	Rodney Stevens Acoustics Pty Ltd PO Box 522 Wahroonga NSW, 2076
Equipment Tested/ Model Number :	NL-42EX
Instrument Serial Number :	00184112
Microphone Serial Number :	192152
Pre-amplifier Serial Number :	72897
Firmware Version :	v2.0

Pre-Test Atmospheric Conditions		**Post-Test Atmospheric Conditions**	
Ambient Temperature :	20 °C	**Ambient Temperature :**	22.5 °C
Relative Humidity :	53.7 %	**Relative Humidity :**	49.6 %
Barometric Pressure :	101.64 kPa	**Barometric Pressure :**	101.61 kPa

Calibration Technician : Peter Elters
Secondary Check: Cooper Sallway
Calibration Date : 8 Jul 2024
Report Issue Date : 8 Jul 2024

Approved Signatory : Ken Williams

Clause and Characteristic Tested	Result	Clause and Characteristic Tested	Result
12: Acoustical Sig. tests of a frequency weighting	*Pass*	17: Level linearity incl. the level range control	*N/A*
13: Electrical Sig. tests of frequency weightings	*Pass*	18: Toneburst response	*Pass*
14: Frequency and time weightings at 1 kHz	*Pass*	19: C Weighted Peak Sound Level	*Pass*
15: Long Term Stability	*Pass*	20: Overload Indication	*Pass*
16: Level linearity on the reference level range	*Pass*	21: High Level Stability	*Pass*

The sound level meter submitted for testing has successfully completed the class 2 periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed.

However, no general statement or conclusion can be made about conformance of the sound level meter to the full requirements of IEC 61672-1:2013 because evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2013 and because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

Uncertainties of Measurement -

Acoustic Tests		Environmental Conditions	
125Hz	*±0.13 dB*	*Temperature*	*±0.1 °C*
1kHz	*±0.13 dB*	*Relative Humidity*	*±1.9 %*
8kHz	*±0.14 dB*	*Barometric Pressure*	*±0.11 kPa*
Electrical Tests	*±0.13 dB*		

All uncertainties are derived at the 95% confidence level with a coverage factor of 2.

This calibration certificate is to be read in conjunction with the calibration test report.

Accoustic Research Labs Pty Ltd is NATA Accredited Laboratory Number 14172.
Accredited for compliance with ISO/IEC 17025 - Calibration.

The results of the tests, calibrations and/or measurements included in this document are traceable to SI units.

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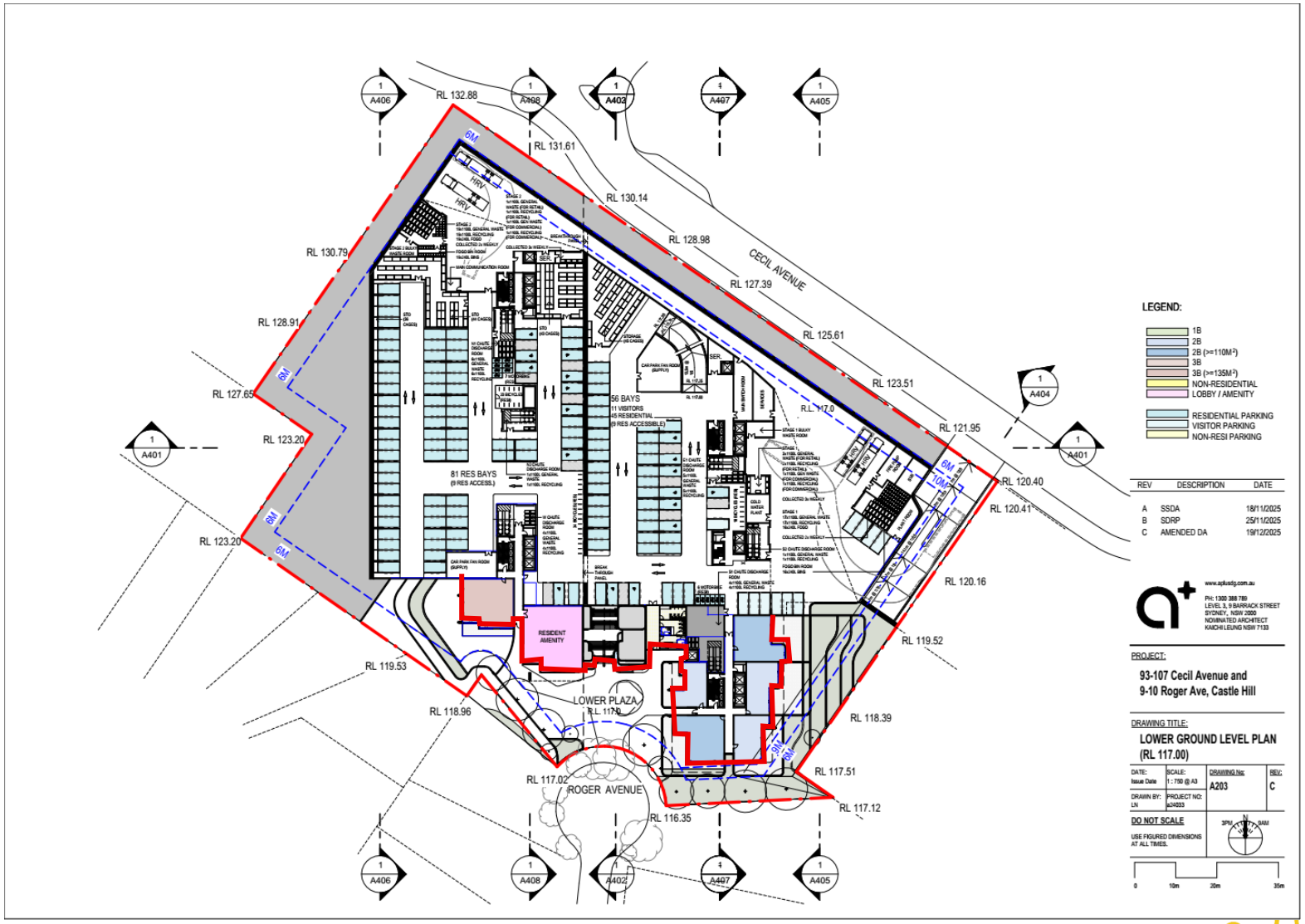
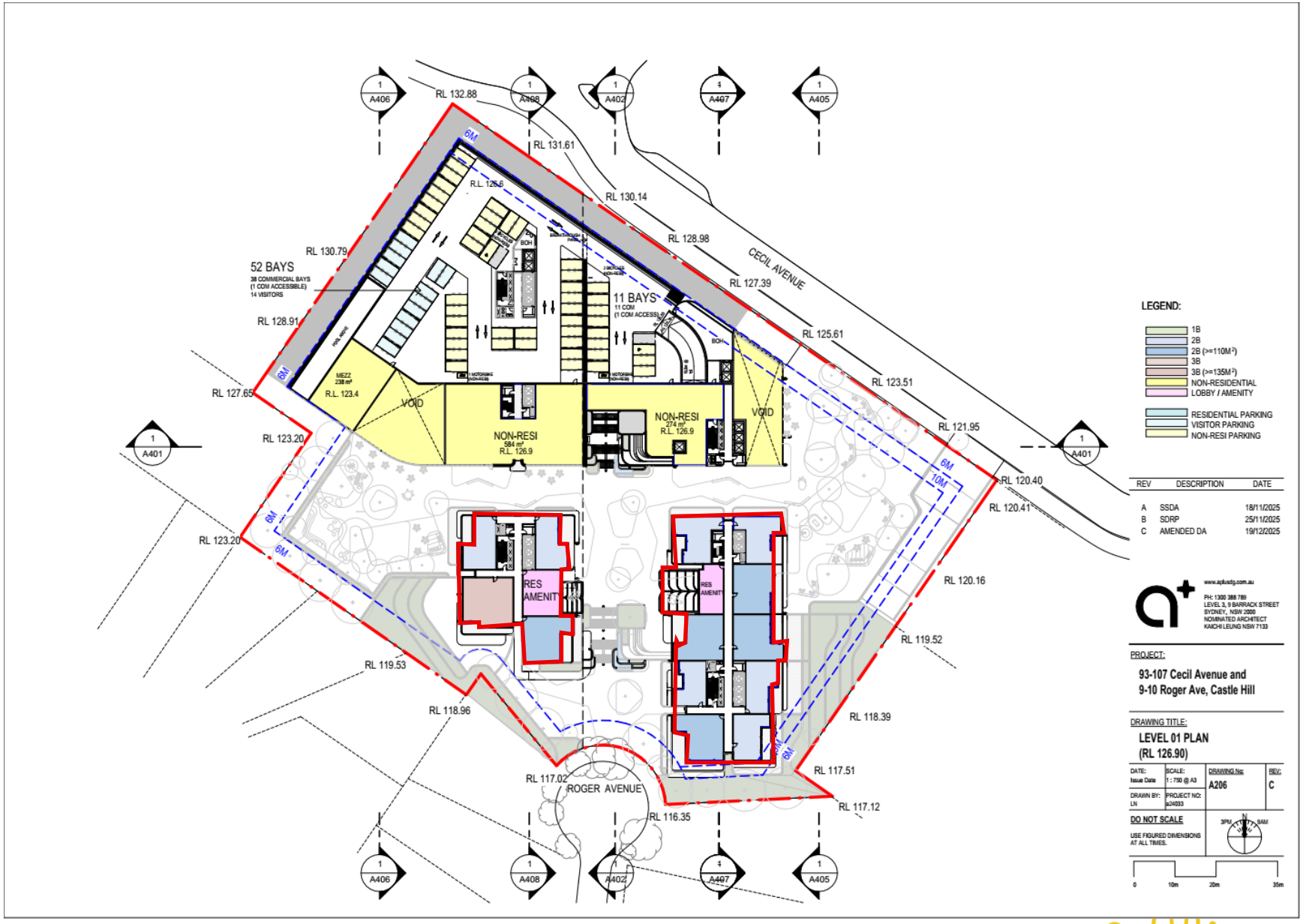
Appendix D – Architectural Drawings & Glazing Layout




RL 132.88
RL 131.61
RL 130.14
RL 128.98
RL 127.39
RL 125.61
RL 123.51
RL 121.95
RL 120.40
RL 120.41
RL 120.16
RL 119.52
RL 118.39
RL 117.51
RL 117.12
RL 116.35
RL 117.02
RL 118.96
RL 119.53
RL 123.20
RL 127.65
RL 128.91
RL 130.79
RL 123.20
CECIL AVENUE
ROGER AVENUE
VOID
56 BAYS
34 VISITORS
(1 VIS ACCESSIBLE)
22 RESIDENTIAL
(7 RES ACCESSIBLE)
109 RES BAYS
(11 RES ACCESSIBLE)
STORAGE
CAR PARK FAN ROOM (EXHAUST)
RESIDENT AMENITY
6M
10M
A406
A408
A402
A407
A405
A401
A404
LEGEND:
1B
2B
2B (>=110M²)
3B
3B (>=135M²)
NON-RESIDENTIAL
LOBBY / AMENITY
RESIDENTIAL PARKING
VISITOR PARKING
NON-RESI PARKING
REV DESCRIPTION DATE
A SSDA 18/11/2025
B SDRP 25/11/2025
C AMENDED DA 19/12/2025
PROJECT:
93-107 Cecil Avenue and
9-10 Roger Ave, Castle Hill
DRAWING TITLE:
GROUND LEVEL PLAN
(RL 120.20)
DRAWING No: A204
REV: C
SCALE: 1 : 750 @ A3
DO NOT SCALE
USE FIGURED DIMENSIONS AT ALL TIMES.

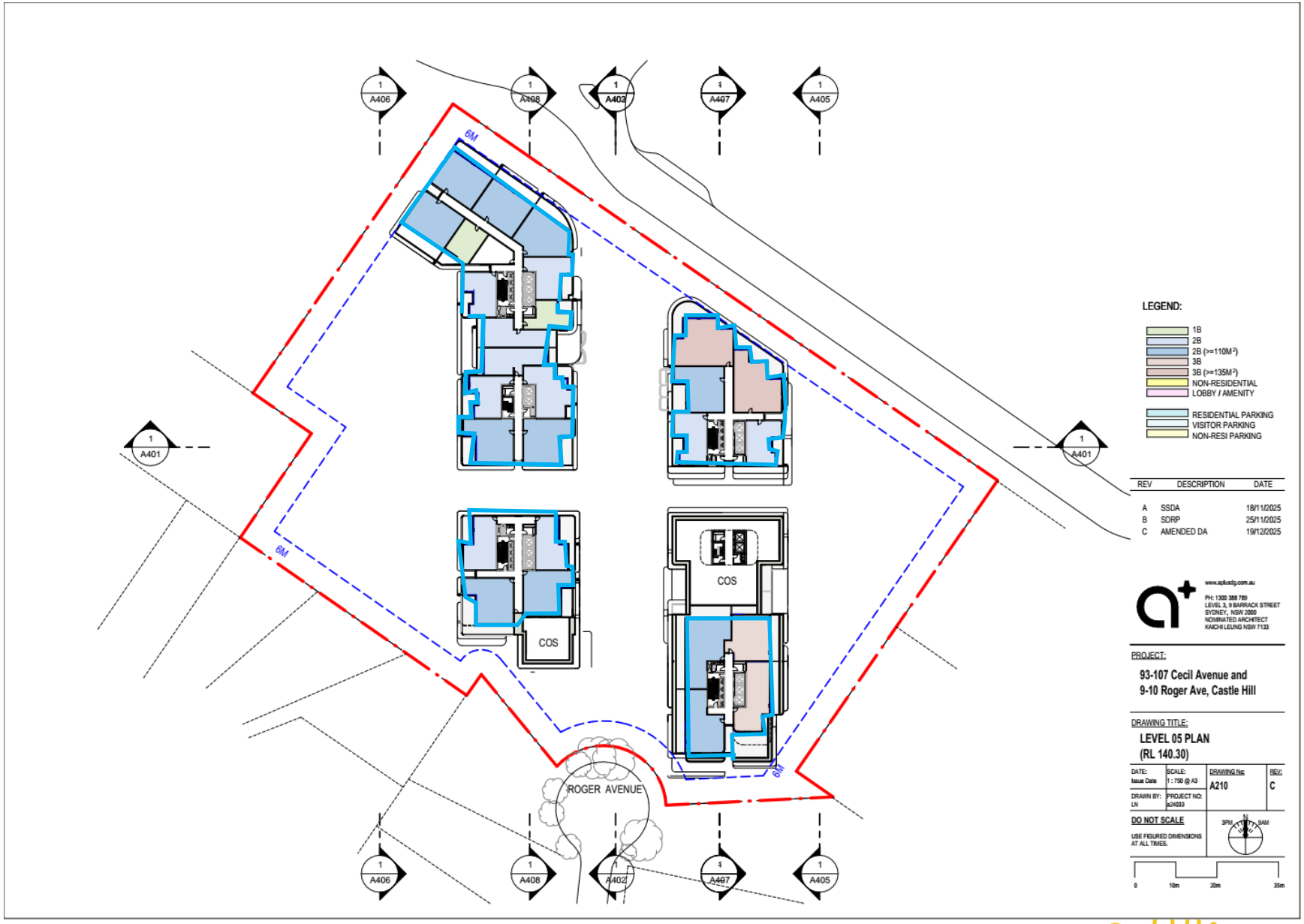

64 BAYS
57 VISITORS
(1 VIS ACCES.)
7 RESIDENTIAL
18 BAYS
10 COM
8 VISITORS
CECIL AVENUE
ROGER AVENUE
MID PLAZA
POS
(REFER TO LANDSCAPE)
LOBBY
RESIDENT AMENITY
NON-RESI 701 m²
NON-RESI 258 m²
NON-RESI 57 m²
NON-RESI 305 m²
NON-RESI 138 m²
RL 132.88
RL 131.61
RL 130.14
RL 128.98
RL 127.39
RL 125.61
RL 123.51
RL 121.95
RL 120.40
RL 120.41
RL 120.16
RL 119.52
RL 118.39
RL 117.51
RL 117.12
RL 116.35
RL 117.02
RL 118.96
RL 119.53
RL 123.20
RL 127.65
RL 128.91
RL 130.79
LEGEND:
1B
2B
2B (>=110M²)
3B
3B (>=135M²)
NON-RESIDENTIAL
LOBBY / AMENITY
RESIDENTIAL PARKING
VISITOR PARKING
NON-RESI PARKING
REV DESCRIPTION DATE
A SSDA 18/11/2025
B SDRP 25/11/2025
C AMENDED DA 19/12/2025
PROJECT:
93-107 Cecil Avenue and
9-10 Roger Ave, Castle Hill
DRAWING TITLE:
UPPER GROUND LEVEL PLAN
(RL 123.40)
DRAWING No: A205
REV: C
DO NOT SCALE
USE FIGURED DIMENSIONS AT ALL TIMES.


RL 132.88
RL 131.61
RL 130.14
RL 128.98
RL 127.39
RL 125.61
RL 123.51
RL 121.95
RL 120.40
RL 120.41
RL 120.16
RL 119.52
RL 118.39
RL 117.51
RL 117.12
RL 116.35
RL 117.02
RL 118.96
RL 119.53
RL 123.20
RL 127.65
RL 123.20
RL 130.79
RL 128.91
CECIL AVENUE
ROGER AVENUE
52 BAYS
38 COMMERCIAL BAYS (1 COM ACCESSIBLE)
14 VISITORS
11 BAYS
11 COM (1 COM ACCESSIBLE)
NON-RESI
584 m²
R.L. 126.9
NON-RESI
274 m²
R.L. 126.9
MEZZ
238 m²
R.L. 123.4
VOID
VOID
RES AMENITY
RES AMENITY
6M
10M
A406
A408
A402
A407
A405
A401
LEGEND:
1B
2B
2B (>=110M²)
3B
3B (>=135M²)
NON-RESIDENTIAL
LOBBY / AMENITY
RESIDENTIAL PARKING
VISITOR PARKING
NON-RESI PARKING
REV DESCRIPTION DATE
A SSDA 18/11/2025
B SDRP 25/11/2025
C AMENDED DA 19/12/2025
www.aplusdg.com.au
PH: 1300 388 789
LEVEL 3, 9 BARRACK STREET
SYDNEY, NSW 2000
NOMINATED ARCHITECT
KAICHI LEUNG NSW 7133
PROJECT:
93-107 Cecil Avenue and
9-10 Roger Ave, Castle Hill
DRAWING TITLE:
LEVEL 01 PLAN
(RL 126.90)
DATE: Issue Date
SCALE: 1 : 750 @ A3
DRAWING No: A206
REV: C
DRAWN BY: LN
PROJECT NO: a24033
DO NOT SCALE
USE FIGURED DIMENSIONS AT ALL TIMES.
3PM
9AM
0
10m
20m
35m


RL 132.88
RL 131.61
RL 130.14
RL 128.98
RL 127.39
RL 125.61
RL 123.51
RL 121.95
RL 120.40
RL 120.41
RL 120.16
RL 119.52
RL 118.39
RL 117.51
RL 117.12
RL 116.35
RL 117.02
RL 118.96
RL 119.53
RL 123.20
RL 123.20
RL 127.65
RL 128.91
RL 130.79
CECIL AVENUE
ROGER AVENUE
RESIDENT AMENITY
NON-RESI 278 m²
R.L. 131.8
NON-RESI 285 m²
LOBBY
UPPER PLAZA
R.L. 129.7
NON-RESI 246 m²
LOBBY
RESIDENT AMENITY
COS
6M
10M
A406
A408
A402
A407
A405
A401
LEGEND:
1B
2B
2B (>=110M²)
3B
3B (>=135M²)
NON-RESIDENTIAL
LOBBY / AMENITY
RESIDENTIAL PARKING
VISITOR PARKING
NON-RESI PARKING
REV DESCRIPTION DATE
A SSDA 18/11/2025
B SDRP 25/11/2025
C AMENDED DA 19/12/2025
www.aplusdg.com.au
PH: 1300 388 789
LEVEL 3, 9 BARRACK STREET
SYDNEY, NSW 2000
NOMINATED ARCHITECT
KAICHI LEUNG NSW 7133
PROJECT:
93-107 Cecil Avenue and
9-10 Roger Ave, Castle Hill
DRAWING TITLE:
LEVEL 02 PLAN
(RL 129.70)
DATE: Issue Date
SCALE: 1 : 750 @ A3
DRAWING No: A207
REV: C
DRAWN BY: LN
PROJECT NO: a24033
DO NOT SCALE
USE FIGURED DIMENSIONS AT ALL TIMES.
3PM
9AM
0
10m
20m
35m


CECIL AVENUE
ROGER AVENUE
VOID
VOID
RESIDENT AMENITY
VOID
RESIDENTIAL AMENITY
6M
6M
6M
A406
A408
A403
A407
A405
A401
A401
A406
A408
A402
A407
A405
LEGEND:
1B
2B
2B (>=110M²)
3B
3B (>=135M²)
NON-RESIDENTIAL
LOBBY / AMENITY
RESIDENTIAL PARKING
VISITOR PARKING
NON-RESI PARKING
REV DESCRIPTION DATE
A SSDA 18/11/2025
B SDRP 25/11/2025
C AMENDED DA 19/12/2025
www.aplusdg.com.au
PH: 1300 388 789
LEVEL 3, 9 BARRACK STREET
SYDNEY, NSW 2000
NOMINATED ARCHITECT
KAICHI LEUNG NSW 7133
PROJECT:
93-107 Cecil Avenue and
9-10 Roger Ave, Castle Hill
DRAWING TITLE:
LEVEL 03 PLAN
(RL 133.90)
DATE: Issue Date
SCALE: 1 : 750 @ A3
DRAWING No: A208
REV: C
DRAWN BY: LN
PROJECT NO: a24033
DO NOT SCALE
USE FIGURED DIMENSIONS AT ALL TIMES.
3PM
9AM
0
10m
20m
35m


CECIL AVENUE
ROGER AVENUE
6M
A406
A408
A403
A407
A405
A401
LEGEND:
1B
2B
2B (>=110M²)
3B
3B (>=135M²)
NON-RESIDENTIAL
LOBBY / AMENITY
RESIDENTIAL PARKING
VISITOR PARKING
NON-RESI PARKING
REV DESCRIPTION DATE
A SSDA 18/11/2025
B SDRP 25/11/2025
C AMENDED DA 19/12/2025
PROJECT:
93-107 Cecil Avenue and
9-10 Roger Ave, Castle Hill
DRAWING TITLE:
LEVEL 04 PLAN
(RL 137.10)
DRAWING No: A209
REV: C
DO NOT SCALE
USE FIGURED DIMENSIONS AT ALL TIMES.


A406
A408
A403
A407
A405
A401
6M
COS
COS
ROGER AVENUE
LEGEND:
1B
2B
2B (>=110M²)
3B
3B (>=135M²)
NON-RESIDENTIAL
LOBBY / AMENITY
RESIDENTIAL PARKING
VISITOR PARKING
NON-RESI PARKING
REV DESCRIPTION DATE
A SSDA 18/11/2025
B SDRP 25/11/2025
C AMENDED DA 19/12/2025
PROJECT:
93-107 Cecil Avenue and
9-10 Roger Ave, Castle Hill
DRAWING TITLE:
LEVEL 05 PLAN
(RL 140.30)
A210
C
DO NOT SCALE
USE FIGURED DIMENSIONS AT ALL TIMES.


CECIL AVENUE
ROGER AVENUE
6M
LEGEND:
1B
2B
2B (>=110M²)
3B
3B (>=135M²)
NON-RESIDENTIAL
LOBBY / AMENITY
RESIDENTIAL PARKING
VISITOR PARKING
NON-RESI PARKING
REV DESCRIPTION DATE
A SSDA 18/11/2025
B SDRP 25/11/2025
C AMENDED DA 19/12/2025
PROJECT:
93-107 Cecil Avenue and
9-10 Roger Ave, Castle Hill
DRAWING TITLE:
LEVEL 06 PLAN
(RL 143.50)
A211
C
DO NOT SCALE
USE FIGURED DIMENSIONS AT ALL TIMES.