

Appendix F – Noise Impact Assessment, prepared by CRG Acoustics

Proposed Commercial Development,
3733 – 3735 Pacific Highway, Slacks Creek
(Lot 6 on RP 839894)

ENVIRONMENTAL NOISE IMPACT ASSESSMENT

Prepared For:

H&G JV Pty Ltd

13 November 2025

crgref: 22072 report Rev 6

1.0 INTRODUCTION

This report is in response to a request by H&G JV Pty Ltd for an environmental noise impact assessment of a proposed commercial development along the Pacific Highway in Slacks Creek. In undertaking the assessment, measurements were conducted near the site, and through modelling, predictions of onsite activity noise impacts were produced. Based upon the predicted noise levels, recommendations regarding acoustic treatment at the site have been provided.

2.0 SITE & DEVELOPMENT DESCRIPTION

The subject site is described as Lot 6 on RP839894, 3733 – 3735 Pacific Highway Slacks Creek. The site is bounded by Nujooloo Road and the Pacific Motorway to the northeast, commercial to the northwest, a council controlled water pump station to the southeast, with residential lots to the south and west. For site location refer to Appendix A.

The site is zoned Specialised Centre, with the residential premises within the Low Density Zone to the southeast, and west. More than half of the residential properties to the west are also zoned Environmental Management and Conservation, and therefore cannot be developed for residential uses. See the attached zoning map Figure 3 in Appendix A.

The proposal is to construct a commercial building, elevated above natural ground, which will comprise nine tenancies, with hardstand areas around the perimeter. There will be two floor levels, being the main floor level comprising the front (northern) five tenancies (Tenancies 1, 3, 5, 15, and 17) and a lower floor level which will comprise the rear (southern) tenancies (Tenancies 7, 9, 11, and 13) and additional carparking. For development plans, refer to Appendix C.

Proposed hours of operation are 6am to 6pm, Monday to Saturday for the front Tenancy and 24 hours seven days per week for the remaining tenancies. The front tenancy (Tenancy 1) is intended for a car dealer use, with the remaining tenancies expected to be self-storage uses. Based on the above, articulated trucks will use the front (northern) hard stand area for car deliveries, while an MRV truck will be the largest truck size for loading / unloading at the other tenancies along the side and rear perimeter hard stand areas.

Onsite activities have been assessed to determine acoustic treatments to ensure an acceptable level of acoustical amenity can be achieved at nearest offsite noise sensitive receivers which are as follows:

- R1:** Detached dwellings to the south zoned “*Low Density Residential*” at 3 Leslie Parade (Lot 3 on RP 114906), 5 Leslie Parade (Lot 2 on RP 114906), a vacant lot at 7 Leslie Parade (Lot 4 on RP 114906), and 11 Alfred Street (Lot 1 on RP 114906).
- R2:** Detached dwellings to the west zoned “*Low Density Residential*” and “*Environmental Management and Conservation*” at 10 Springlands Drive (Lot 16 on RP 89076), 12 Springlands Drive (Lot 17 on RP 89076), 14 Springlands Drive (Lot 18 on RP 89076) and 16 Springlands Drive (Lot 19 on RP 89076).
- R3:** Vacant land to the northwest zoned “*Special Centre*”.
- R4:** Land (pump station) to the southeast zoned “*Community Facilities - Infrastructure*”. It is noted that Council have specifically required assessment of noise impacting this pump station for a previous noise assessment of the subject site, regardless of the fact that the current use is not noise sensitive.

3.0 AMBIENT NOISE SURVEY

3.1 Instrumentation

The following equipment was used to record ambient noise levels at the subject site locale.

- Rion NC 73 Calibrator; and
- BSWA Sound Level Meter.

All instrumentation used in this assessment hold current calibration certificate from a certified NATA calibration laboratory.

3.2 Attended and Unattended Ambient Noise Measurement Methodology

Background noise measurements were undertaken in the backyard of 11 Alfred Street between Monday 12/12/2022 and Monday 19/12/2022. The logger was in a free-field position with the microphone approximately 1.5m above ground. The logger location was chosen to reflect the nearest affected noise sensitive receivers, at distance from the Pacific Highway corridor. Refer to Figure 2 for logger location.

The logger was set to record noise statistics in 15 minute blocks with noise measurements conducted generally in accordance with Australian Standard AS 1055 *“Acoustics-Description and measurement of environmental noise”*. The operation of the sound level logging equipment was field calibrated before and after the measurement session with no significant drift from the reference signal recorded.

Table 1 below presents the determined RBLs calculated from the logger data in accordance with the QLD EPA *“Ecoaccess Planning for Noise Control”* document. Graphical presentation of the measured levels is presented in Appendix C.

From an attended measurement on the subject site on Monday 12/12/22, the acoustical environment is dominated by continuous road traffic on the Pacific Motorway, which carries approximately 110,000 vehicles per day, and over 10% heavy vehicle component.

Note that data from Tuesday 13/12/2022 was excluded from the calculations due to rain events.

Noise Level Descriptor	Time Period	Measured Level dB(A)
RBL Daytime	7am to 6pm	50
RBL Evening	6pm to 10pm	51
RBL Night-time	10pm to 7am	41

Table 1: Rating Background Levels calculated from measured background noise data.

4.0 NOISE CRITERIA

As the residential areas to the south and west are zoned Low Density Zone, Table 3.2.1.1 of the Logan Planning Schemes Planning Scheme Policy 3 “*Environmental management*” applies as follows:

Table 3.2.1.1 - Noise emission standards for the protection of residential amenity

Noise level at the boundary of premises			
Noise type	Time period	Monday to Saturday	Sunday and public holidays
Non-steady sound*	Day 7:00am - 6:00pm	$L_{Aeq,adj,T} \leq L_{A90} \text{ plus } 5 \text{ dB(A)}$	$L_{Aeq,adj,T} \leq L_{A90} \text{ plus } 5 \text{ dB(A)}$
	Evening 6:00pm to 10:00pm	$L_{Aeq,adj,T} \leq L_{A90} \text{ plus } 5 \text{ dB(A)}$	$L_{Aeq,adj,T} \leq L_{A90} \text{ plus } 5 \text{ dB(A)}$
	Night 10:00 - 7:00am	$L_{Aeq,adj,T} \leq L_{A90} \text{ plus } 0 \text{ dB(A)}$ and $L_{Amax} \leq 60 \text{ dB(A)}$	$L_{Aeq,adj,T} \leq L_{A90} \text{ plus } 0 \text{ dB(A)}$ and $L_{Amax} \leq 60 \text{ dB(A)}$
Continuous noise*	Anytime	$L_{A90,T} \text{ plus } 0 \text{ dB(A)}$	$L_{A90,T} \text{ plus } 0 \text{ dB(A)}$

Editor's note - * as defined in AS1055.1-1997 Acoustics - Description and measurement of environmental noise

Note - Adjustments for tonality and impulsiveness to be included in accordance with AS1055.1-1997 Acoustics - Description and measurement of environmental noise.

Based upon the measured background levels presented in Table 1, the following noise limits apply to the proposed development:

Non-steady Noise	Seven days Per Week: Noise Limit, SPL dB(A) L_{eq}
Daytime 7am to 6pm	55 (Measured RBL level 50 + 5 dB)
Evening 6pm to 10pm	56 (Measured RBL level 51 + 5 dB)
Night-time 10pm to 7am	41 (Measured RBL level 41 + 0 dB)
Continuous Noise	Seven days Per Week: Noise Limit, SPL dB(A) L_{eq}
Daytime 7am to 6pm	50 (Measured RBL level 50 + 0 dB)
Evening 6pm to 10pm	51 (Measured RBL level 51 + 0 dB)
Night-time 10pm to 7am	41 (Measured RBL level 41 + 0 dB)

Table 2: Noise limit criterion from the Planning Scheme Policy 3.

As the site is within the Specialised Centre Zone, Table 3.2.1.1 of SC6.2.3 applies, as follows:

Table 3.2.1.2 - Noise emission standards for the protection of general amenity

Noise level at the boundary of premises			
Noise type	Time period	Monday to Saturday	Sunday and public holidays
Non-steady sound *	Day 7:00am - 6:00pm	$L_{Aeq,adj,T} \leq L_{A90} \text{ plus } 10 \text{ dB(A)}$	$L_{Aeq,adj,T} \leq L_{A90} \text{ plus } 5 \text{ dB(A)}$
	Evening 6:00pm to 10:00pm	$L_{Aeq,adj,T} \leq L_{A90} \text{ plus } 10 \text{ dB(A)}$	$L_{Aeq,adj,T} \leq L_{A90} \text{ plus } 5 \text{ dB(A)}$
	Night 10:00pm - 7:00am	$L_{Aeq,adj,T} \leq L_{A90} \text{ plus } 5 \text{ dB(A)}$ and $L_{Amax} \leq 80 \text{ dB(A)}$	$L_{Aeq,adj,T} \leq L_{A90} \text{ plus } 5 \text{ dB(A)}$ and $L_{Amax} \leq 80 \text{ dB(A)}$
Continuous noise*	Anytime	$L_{A90,T} \text{ plus } 5 \text{ dB(A)}$	$L_{A90,T} \text{ plus } 5 \text{ dB(A)}$

Based upon the measured background levels presented in Table 1, the following noise limits apply to the proposed development:

Non-steady Noise	Seven days Per Week: Noise Limit, SPL dB(A) L_{eq}
Daytime 7am to 6pm	55 (Measured RBL level 50 + 5 dB)
Evening 6pm to 10pm	56 (Measured RBL level 51 + 5 dB)
Night-time 10pm to 7am	46 (Measured RBL level 41 + 5 dB)
Continuous Noise	Seven days Per Week: Noise Limit, SPL dB(A) L_{eq}
Daytime 7am to 6pm	55 (Measured RBL level 50 + 5 dB)
Evening 6pm to 10pm	56 (Measured RBL level 51 + 5 dB)
Night-time 10pm to 7am	46 (Measured RBL level 41 + 5 dB)

Table 3: Noise limit criterion from the Planning Scheme Policy 3.

5.0 PREDICTED NOISE IMPACTS

Onsite activity noise source levels have been compiled from similar previous investigations. All noise levels have been corrected for impulsiveness or tonality as per Australian Standard AS 1055 “Acoustics-Description and measurement of environmental noise”. The following noise sources are typically associated with the proposed development and have been assessed:

Activity / Noise Source	Event Noise Level, SPL L_{eq} dB(A)
Car door closures	80* at 1m
Car bypass	70 at 1m
People / staff talking outside	58 at 1m
MRV truck bypass	80 at 1m
Articulated truck bypass (including truck airbrake)	87 at 1m
Goods unloading with forklift	76 at 1m
Waste collection	97* at 1m
Air-conditioning plant	67 at 3m

Night-time Activity / Noise Source	Event Noise Level, SPL L_{max} dB(A)
Car door closure	85 at 1m
Car bypass	78 at 1m
People / staff talking outside	65 at 1m
MRV truck bypass	86 at 1m
Goods unloading with forklift	82 at 1m

* Denotes + 5 dB correction for impulsiveness in accordance with AS1055. ** Denotes + 5 dB correction for tonality in accordance with AS1055.

Table 4: Typical noise source levels associated with the proposed development.

Car movement traffic generation rates have been obtained from the project Traffic Engineer (Modus Transportation and Traffic Engineering) and are as follows:

Peak Hour Volumes: 34 vehicles per hour, and

For car door closures we have assumed two events per car movement per hour. For truck movements, we have assumed a worst-case of two MRV movements per hour per tenancy for Tenancies 3, 5, 7, 9, 11, 13, 15 and 17, and two articulated truck movements for Tenancy 1 per hour. Waste collection is assumed to occur for five minutes, with all other events are assumed to occur for the full assessment period duration (i.e. people talking, goods loading / unloading and mechanical plant).

The impacts are assessed at the highest impact within each of the receivers inclusive the boundary of the Low Density Residential Zone to the south, the zone boundary of the Low Density Residential and the Environmental Management and Conservation Zone to the west, at the property boundary of the subject site (being in the Specialised Centre Zone) to the northwest, and at the Pump Station site zoned Community Facilities (Infrastructure) to the southeast. As the subject site activities are elevated above natural ground, the highest noise impact at the offsite receivers is not necessarily at the boundary (refer to the noise contours in Appendix C). We must note that a Pump Station is not deemed as a noise sensitive use in any way, but we are required to assess this to the requirements of the Planning Scheme Policy.

Due to the complexity of the development, noise modelling has been conducted using the PEN3D environmental noise model. The PEN3D General Prediction Model (GPM) is based on the method contained in the book “Engineering Noise Control - Theory and Practice” by David Bies & Colin H Hansen of the Department of Mechanical Engineering, University Of Adelaide, Publisher Unwin Hyman 1988. Chapter 5.9 Pages 117 to 127 describes the model.

The PEN3D software was originally developed in 1993 and has been in constant development and review.

The basic equation adopted by the GPM is:

$$L_p = L_w - 20 \log_{10}(r) - 10 \log_{10}(4\pi) + AE$$

Where

L_p is the sound pressure level at an observer

L_w is the sound power level of the source

$20 \log_{10}r - 10 \log_{10}(4\pi)$ is the Distance attenuation

AE is the excess attenuation factors and is determined as the sum of the contributions

The excess attenuation factors AE comprise

$$AE = A_a + A_g + A_m + A_b + A_f$$

Where

A_a = Excess attenuation due to air absorption

A_g = Excess attenuation due to ground reflection

A_m = Excess attenuation due to meteorological effects

A_b = Excess attenuation due to barriers; and

A_f = Excess attenuation due to forests

The following sections describe the excess attenuation factors and the implementation within PEN3D.

Air Absorption Excess Attenuation

A_a , the attenuation due to air absorption is dependent upon temperature and relative humidity. The values used in the PEN noise model are based on Sutherland, LC JF Piercy, H.E. Bass & L.B. Evans 1974. Method for calculating the absorption of sound by the atmosphere. Journal of the Acoustical Society of America 56, Supplement 1 (abstract).

$$A_a = m r$$

where

m is the absorption per m; and

r is the actual distance from source to receiver

Ground Reflection Excess Attenuation

Ag, The excess attenuation due to ground reflection is obtained by combining the direct wave and the reflected wave incoherently, that is the energy from the ground wave is added to the direct wave.

$$R = \frac{Z \sin(\beta) - \rho c}{Z \sin(\beta) + \rho c}$$

where

- β is the angle the reflected wave makes with the ground
- Z is the complex ground impedance (a function of the flow resistivity);
- ρ is the density of air; and
- c the speed of sound.

The reflection loss AR is given by $-20 \log_{10}(R)$

$$A_g = -10 \log_{10}(1 + 10^{-AR/10})$$

Ground levels were obtained from ELVIS website (Elevation and Depth – Foundation Spatial Data) as a LiDAR file and converted to a 3D dxf file with contours at 0.2m intervals.

Meteorological Excess Attenuation

Am, the excess attenuation due to meteorology is obtained by firstly calculating the vertical sonic gradient due to wind and temperature effects. The theoretical approach to application of meteorological effects implies that PEN3D is likely to provide more significant corrections than other models. Thus, at night or during downwind predictions, the PEN3D calculations are likely to result in conservatively high results, i.e. the modelled noise levels are likely to be higher than the measured levels.

Given that the proximity of the subject site to the offsite receiver (i.e. directly adjacent the subject site) meteorological and atmospheric factors are expected not to have any significant impact on the predicted noise impact levels and have therefore not been assessed.

Barrier Excess Attenuation

Ab, the excess attenuation due to barriers is obtained by firstly calculating the curved noise path due to wind and temperature effects. It is calculated by reference to the method outlined in “A Method to Incorporate Meteorological Effects into A Road Traffic Model” by MA Simpson, Proceedings of Acoustics 2004.

If a barrier exists the effective location of the source and receiver is modified according to the method outlined in Tonin, R, “Estimating Noise Levels from Petrochemical Plants, Mines and Industrial Complexes”, Acoustics Australia, 13(2):59-67, 1985.

Forest Excess Attenuation

Af, the excess attenuation due to forest is obtained by the following:

$$A_f = 0.01 r f^{(1/3)}$$

where

r = distance through the forest in (m), and

f = frequency in (Hz)

For truck and car movements, the PEN3D Model is an implementation of the environmental noise model. The model calculates the Leq and Lmax from rail object and is applicable to modelling vehicles in car parks, trucks moving on haul roads and numerous other similar sources. Simply set the length of the "line" to be equal to the dimensions of the moving source.

The contribution Leq(1 hour) from each segment is determined by:

$$Leq = L_w - 10 \log_{10}(4\pi d^2 + 2\pi d L) + AE + 10 \log(T/3600)$$

where:

Leq = the Leq sound pressure level at an observer

Lw = the sound power level of the source

$10 \log_{10}(4\pi d^2 + 2\pi d L)$ is the Distance attenuation A

E is the excess attenuation factors and is determined as the sum of the contributions

T = Time to traverse the segment (s)

L = length of vehicle in (m)

d = distance in (m)

The Lmax from each segment is determined by:

$$L_{max} = L_w - 10 \log_{10}(4\pi d^2 + 2\pi d L) + AE$$

Based upon the location of the onsite activities (refer to Modelling Position Plans 5.1 and 5.2 over page) in relation to the nearest noise sensitive receivers (assessed at 1.8m aboveground given the requirement to assess at the nearest receiver boundary), we predict the following noise impact levels as presented in Table 5 (non-steady State) and Table 6 (continuous).

The predicted levels assume that the recommended treatments detailed in Section 6 are incorporated into the development. For noise contours refer to Appendix C.

Combined / cumulative Leq impacts exclude waste collection activities as these activities are typically infrequent and of short duration and are therefore deemed atypical events that do not typically occur during a normal 15 minute and one hour assessment periods. Given that these activities occur at the front of the subject site, adjacent to the Pacific Highway, they are expected to be masked by the high road traffic noise from the Highway, which as noted earlier carries approximately 110,000 vehicles per day with 10% heavy vehicle component.

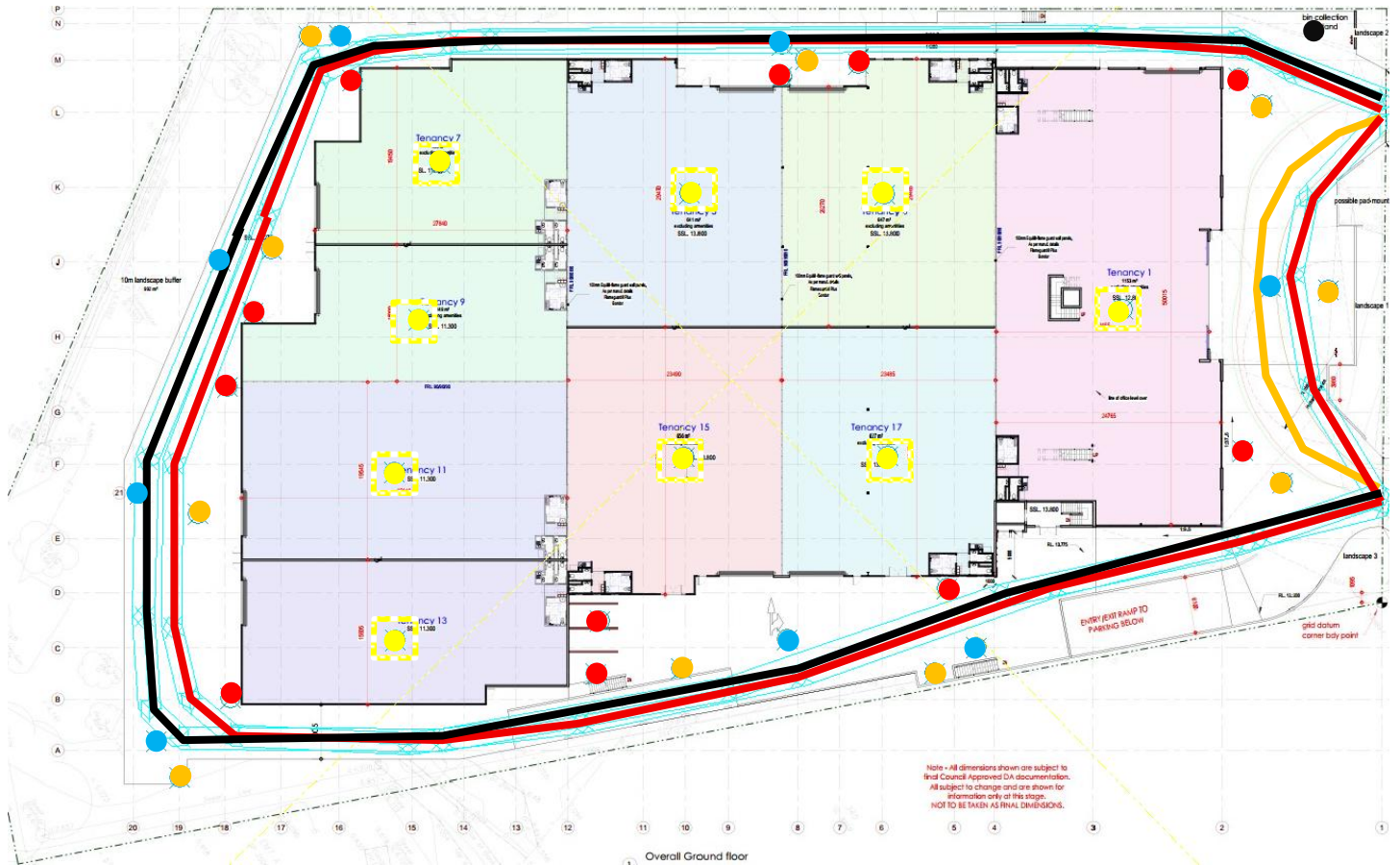
Modelling Position Plan 5.1: Lower Floor assessed noise source locations (Not to Scale).



● Car door closures located – Two events per location.

— Car Bypasses

Modelling Position Plan 5.2: Main Floor assessed noise source locations (Not to Scale).



- Car door closures located – Two events per location.
- People Talking ● Loading / Unloading ● Waste Collection
- Mechanical Plant and □ Acoustic Screen for Plant
- Car Bypasses — MRV Truck Movements — Articulated Truck Movements

Non-steady State Noise Source	Predicted Noise Impact, SPL dB(A)	
	L_{eq} 1 hour	L_{max}
R1: Low Density Residential Zone Boundary to South		
Car door closure (Main Floor)	14	46
Car door closure (Lower Ground Floor parking)	15	49
Car bypass (Main Floor)	16	46
Car bypass (Lower Ground Floor parking)	22	47
People / staff talking outside	22	25
MRV truck bypass	33	54
Articulated truck bypass (including truck airbrake)	< 15	N/A
Goods unloading with forklift	34	36
Air-conditioning plant	33	N/A
Combined L_{eq} impact excludes waste collection	38	N/A
Waste collection	26	N/A
R2: Low Density Residential / Environmental Management Zone Boundary to West		
Car door closure (Main Floor)	< 15	44
Car door closure (Lower Ground Floor parking)	22	46
Car bypass (Main Floor)	< 15	37
Car bypass (Lower Ground Floor parking)	26	42
People / staff talking outside	21	29
MRV truck bypass	36	50
Articulated truck bypass (including truck airbrake)	< 15	N/A
Goods unloading with forklift	34	35
Air-conditioning plant	36	N/A
Combined L_{eq} impact excludes waste collection	40	N/A
Waste collection	34	N/A
Applicable Criterion	L_{eq}	L_{max}
Daytime 7am to 6pm Seven Days per Week	55	N/A
Evening 6pm to 10pm Seven Days per Week	56	N/A
Night-time 10pm to 7am Seven Days per Week	41	60

Non-steady State Noise Source	Predicted Noise Impact, SPL dB(A)	
	L_{eq} 1 hour	L_{max}
R3: Specialised Centre Zone Property Boundary to Northwest		
Car door closure (Main Floor)	< 15	53
Car door closure (Lower Ground Floor parking)	31	61
Car bypass (Main Floor)	23	53
Car bypass (Lower Ground Floor parking)	37	59
People / staff talking outside	27	32
MRV truck bypass	42	58
Articulated truck bypass (including truck airbrake)	26	N/A
Goods unloading with forklift	35	32
Air-conditioning plant	37	N/A
Combined L_{eq} impact excludes waste collection and goods delivery	45	N/A
Waste collection	57	N/A
R4: Specialised Centre Zone Property Boundary to Southeast		
Car door closure (Main Floor)	< 15	50
Car door closure (Lower Ground Floor parking)	28	54
Car bypass (Main Floor)	21	50
Car bypass (Lower Ground Floor parking)	34	56
People / staff talking outside	27	33
MRV truck bypass	36	61
Articulated truck bypass (including truck airbrake)	15	N/A
Goods unloading with forklift	39	37
Air-conditioning plant	37	N/A
Combined L_{eq} impact excludes waste collection and goods delivery	43	N/A
Waste collection	32	N/A
Applicable Criterion	L_{eq}	L_{max}
Daytime 7am to 6pm Seven Days per Week	55	N/A
Evening 6pm to 10pm Seven Days per Week	56	N/A
Night-time 10pm to 7am Seven Days per Week	46	80

Table 5: Predicted short duration noise impact levels at noise sensitive receivers.

Steady State Noise Source	Predicted Noise Impact, SPL dB(A)
	L_{eq} 1 hour
R1: Low Density Residential Zone Boundary to South	
Nine A/C condensers assumed at rooftop with acoustical screens to a height of 0.2m above the top of plant (Plant positioned at centre of roof for each tenancy)	33
R2: Low Density Residential / Environmental Management Zone Boundary to West	
Nine A/C condensers assumed at rooftop with acoustical screens to a height of 0.2m above the top of plant (Plant positioned at centre of roof for each tenancy)	36
Applicable Criterion	L_{eq}
Daytime 7am to 6pm Seven Days per Week	50
Evening 6pm to 10pm Seven Days per Week	51
Night-time 10pm to 7am Seven Days per Week	41

Steady State Noise Source	Predicted Noise Impact, SPL dB(A)
	L_{eq} 1 hour
R3: Specialised Centre Zone Property Boundary to Northwest	
Nine A/C condensers assumed at rooftop with acoustical screens to a height of 0.2m above the top of plant (Plant positioned at centre of roof for each tenancy)	37
R4: Specialised Centre Zone Property Boundary to Southeast	
Nine A/C condensers assumed at rooftop with acoustical screens to a height of 0.2m above the top of plant (Plant positioned at centre of roof for each tenancy)	37
Applicable Criterion	L_{eq}
Daytime 7am to 6pm Seven Days per Week	55
Evening 6pm to 10pm Seven Days per Week	56
Night-time 10pm to 7am Seven Days per Week	46

Table 6: Predicted onsite continuous noise impact levels at noise sensitive receivers.

6.0 RECOMMENDED ACOUSTIC TREATMENTS

We recommend that the following acoustic treatments and management controls be incorporated into the development to mitigate onsite activity noise:

- The proposed tenancies can operate 24 hours, seven days per week.
- Articulated truck deliveries be limited to 7am to 10pm.
- Waste collection be limited to 7am to 6pm, Monday to Saturday.
- Construction of the acoustic barriers as detailed in Sketches 1 and 2 in Appendix A. Barriers are to be free of holes or gaps, including the ground level junction. Barriers are to be free of holes or gaps, including the ground junction. Typical materials include Bondor DesignerWall Acoustic Barrier, 19mm lapped timber fence (40% overlap), 9mm FC sheet, toughened glass, Perspex, masonry, or a combination of the above (a minimum surface mass of 11kg/m² is required).
- Driveway and car parking areas be finished with surface coatings which prevent tyre squeal (an uncoated unpolished concrete or bitumen surface is acceptable).
- Drainage grating over trafficable areas be well secured to prevent rattling.
- Mechanical plant be designed and installed to comply with the noise criterion presented in Section 4. **As final plant selection and plant locations has not been completed, additional acoustic assessment/s should be undertaken once plant selections and locations are finalised.** Such assessments should be undertaken prior to Building Approval. Based upon the assumed mechanical plant and source levels, no treatment should be required. **This is an indication of potential treatments only and should be reviewed at detailed design stage.**

7.0 DISCUSSION and CONCLUSIONS

This report is in response to a request by H&G JV Pty Ltd for an environmental noise impact assessment of a proposed commercial development along the Pacific Highway in Slacks Creek.

The acoustical environment is dominated by road traffic on the Pacific Motorway, which carries approximately 110,000 vehicles per day, and over 10% heavy vehicle component. This noise is expected to mask a significant portion of the noise emitted by the proposed use, particularly those occurring at the front (northern) end of the site adjacent to the Pacific Highway.

Based upon the assumed source levels and acoustic treatments, L_{eq} and L_{max} impacts from onsite activity noise from the proposed facility are predicted to impact at the nearest offsite receivers within the relevant external criterion except waste collection, which is predicted within 2 dB of the daytime criterion. As the smallest detectable change in sound pressure to the human ear is 3 dB a 2 dB rise of the criterion will not be distinguishable and is therefore deemed an acceptable outcome.

In relation to waste collection, given that the truck will empty the bins from above its tray, the noise source will be at least 4m in the air; therefore, there are no reasonable acoustical treatments to mitigate such noise impacts. As waste collection activities are a normal event within both residential and commercial areas, and are typically infrequent and of short duration, waste collection is unlikely to cause annoyance. To minimise the potential for noise annoyance we have recommended that waste collection be limited to the daytime period between 7am and 6pm.

Further, given that waste collection activities will occur at the front of the subject site, adjacent to the Pacific Highway, such activities are expected to be masked by the high road traffic noise from the Highway. Ambient and background noise levels would therefore be higher (and resultant noise criteria) at the adjoining commercial lots, which are also adjacent the Pacific Motorway.

We have provided an indication of potential noise impact levels of likely onsite mechanical plant, although the levels are merely a guide as no plant selections have yet been completed. For this reason, additional more detailed assessment/s should be conducted upon determination of plant. Such assessments should be undertaken prior to Building Approval; and be conditioned within the Development Approval.

Overall, the proposed facility is a logical and suitable use, given the location between a busy Highway and a residential area.

Report Reviewed By:



JAY CARTER BSc
Director

Report Compiled by:



Matthew Lopez BEng
Consultant

APPENDIX A

Subject Site, Measurement Location, Surrounding Assessed Receivers, Zoning Map and Acoustic Treatment Sketch

Figure No. 1: Subject Site Location (Google Maps).

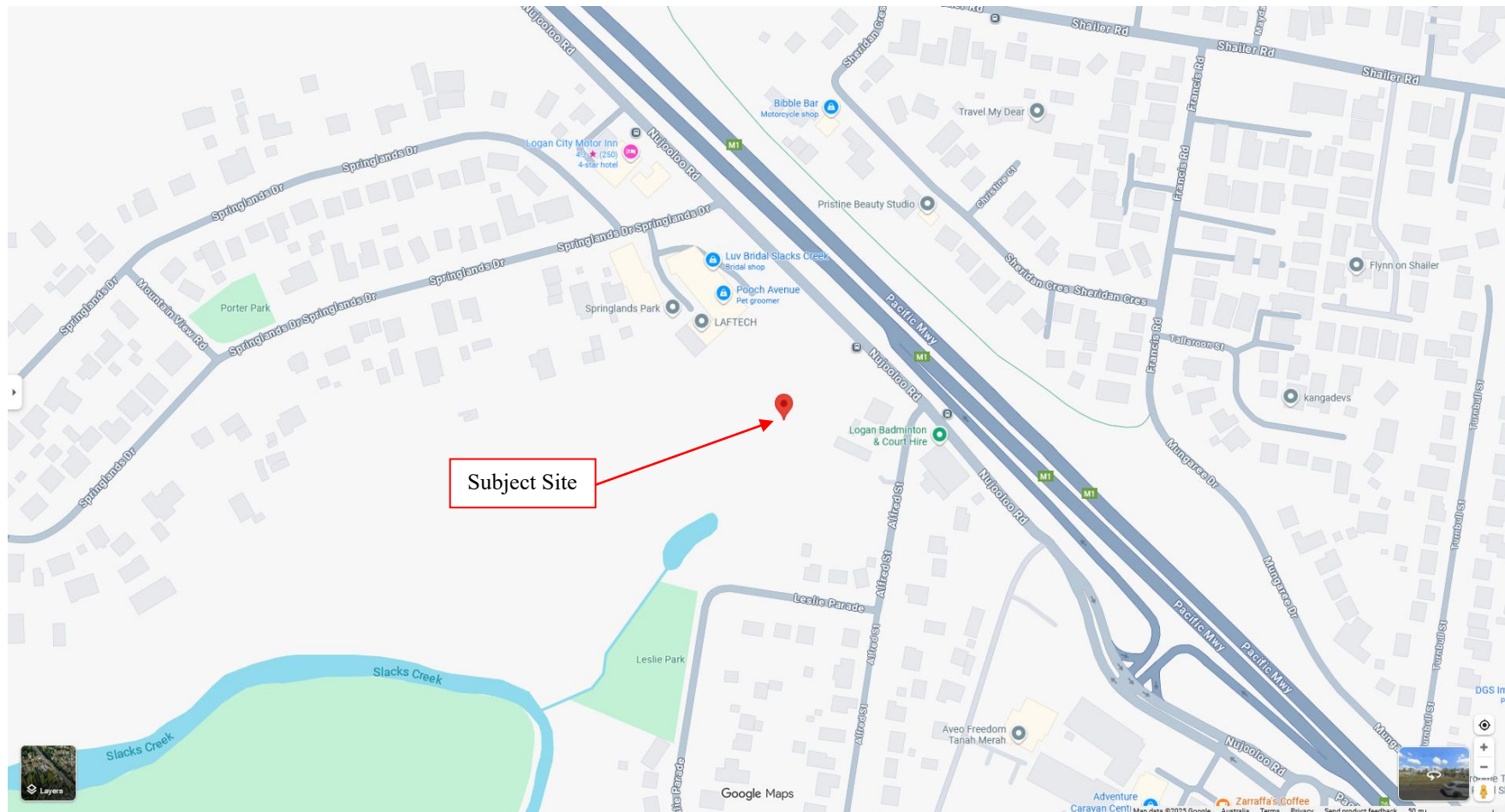
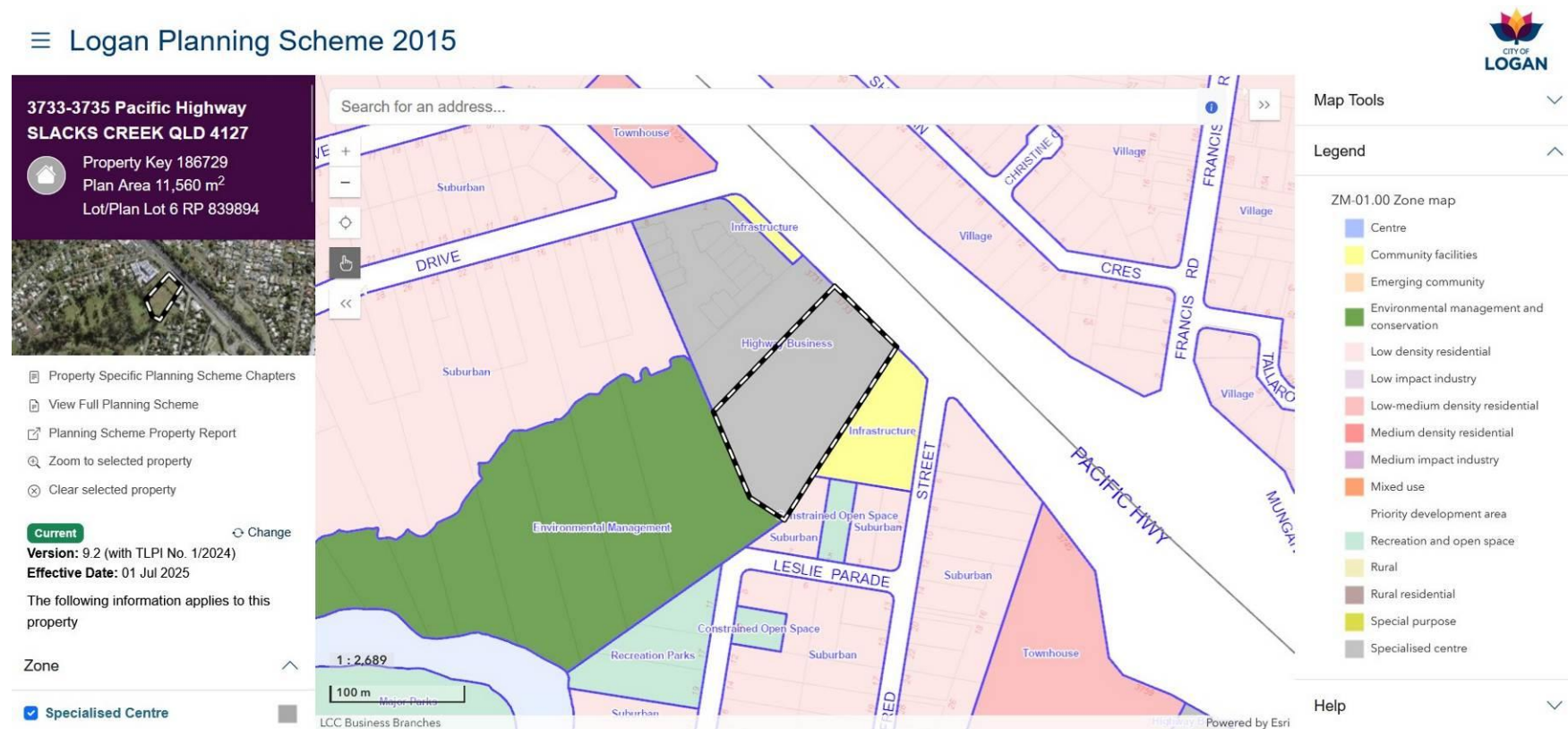


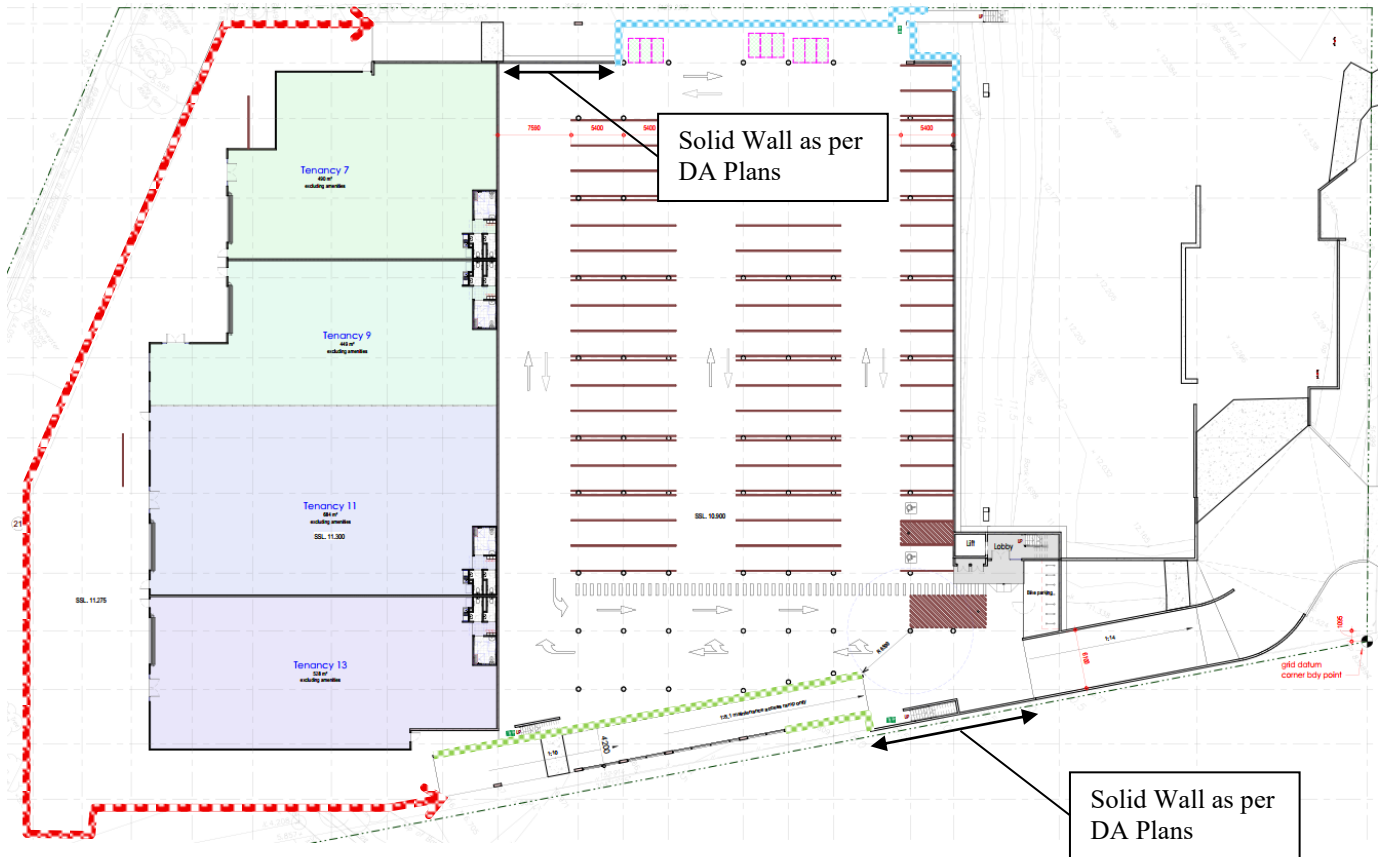
Figure No. 2: Subject Site, Logger Location and Surrounding Assessed Offsite Receivers (Qld Globe).



Figure No. 3: Subject Site and Zoning Map (Logan Planning Scheme 2015)



Sketch No.1: Lower Floor Layout and Recommended Acoustic Treatments (Not to Scale).

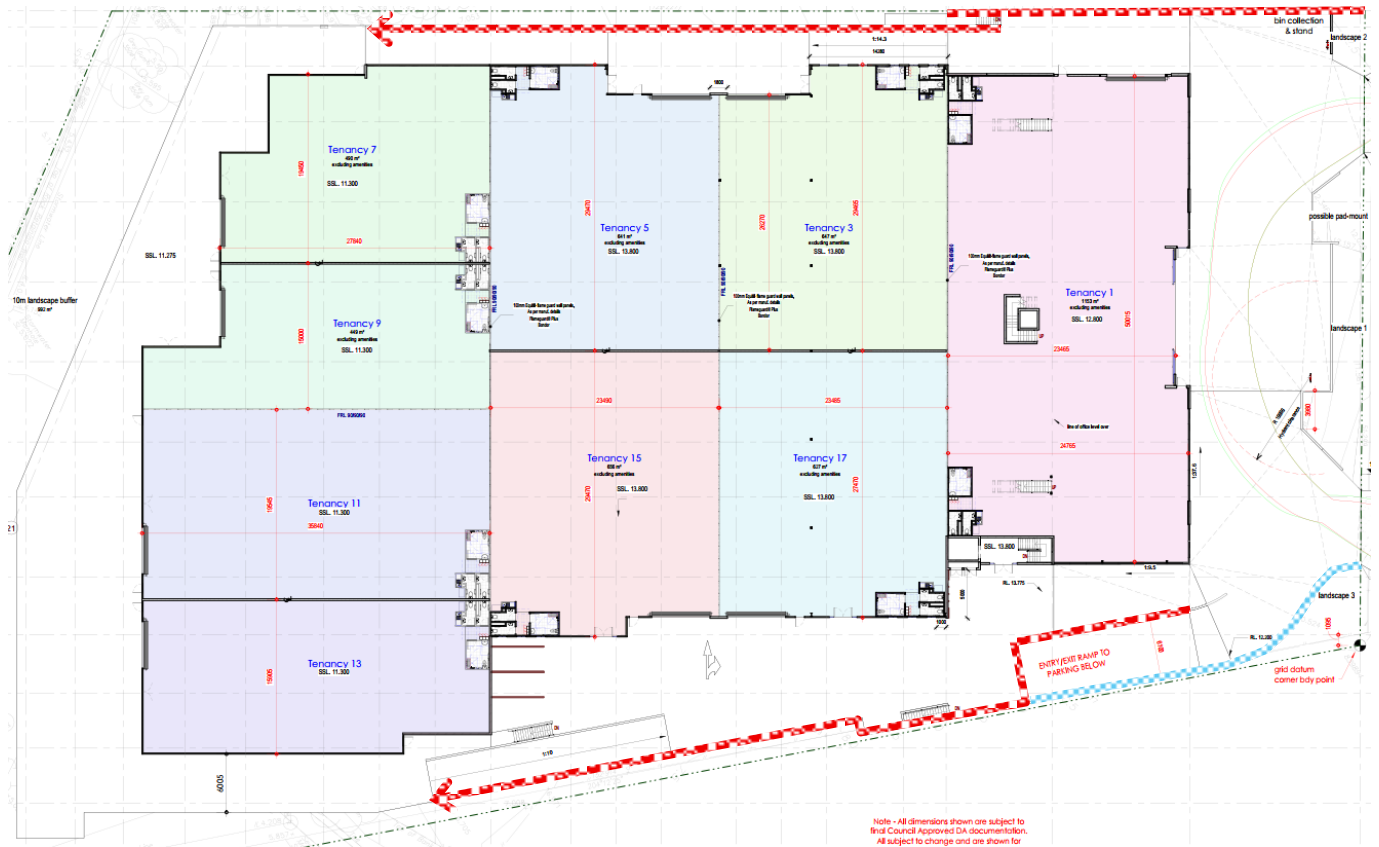


ACOUSTIC TREATMENT LEGEND

-  Recommended 1.2m high acoustic barrier constructed above the finished floor level (Finished Floor Level at R.L. 10.900m).
-  Recommended 1.5m high acoustic barrier constructed above the finished floor level (Finished Floor Level at R.L. 10.900m).
-  Recommended 2.0m high acoustic barrier constructed above the finished floor level (Finished Floor Level at R.L. 11.275m).

Barriers are to be free of holes or gaps, including the ground junction. Typical materials include Bondor DesignerWall Acoustic Barrier, 19mm lapped timber fence (40% overlap), 9mm FC sheet, toughened glass, Perspex, masonry, or a combination of the above (a minimum surface mass of 11kg/m² is required).

Sketch No.2: Main Floor Layout and Recommended Acoustic Treatments (Not to Scale).



ACOUSTIC TREATMENT LEGEND

 Recommended 2.0m high acoustic barrier constructed above the hardstand / car ramp grade height where car movements are proposed (finished level varies).

 Recommended 2.0m high acoustic barrier constructed above the finished floor level / ramps where MRV truck movements are proposed (finished level varies).

Barriers are to be free of holes or gaps, including the ground junction. Typical materials include Bondor DesignerWall Acoustic Barrier, 19mm lapped timber fence (40% overlap), 9mm FC sheet, toughened glass, Perspex, masonry, or a combination of the above (a minimum surface mass of 11kg/m² is required).

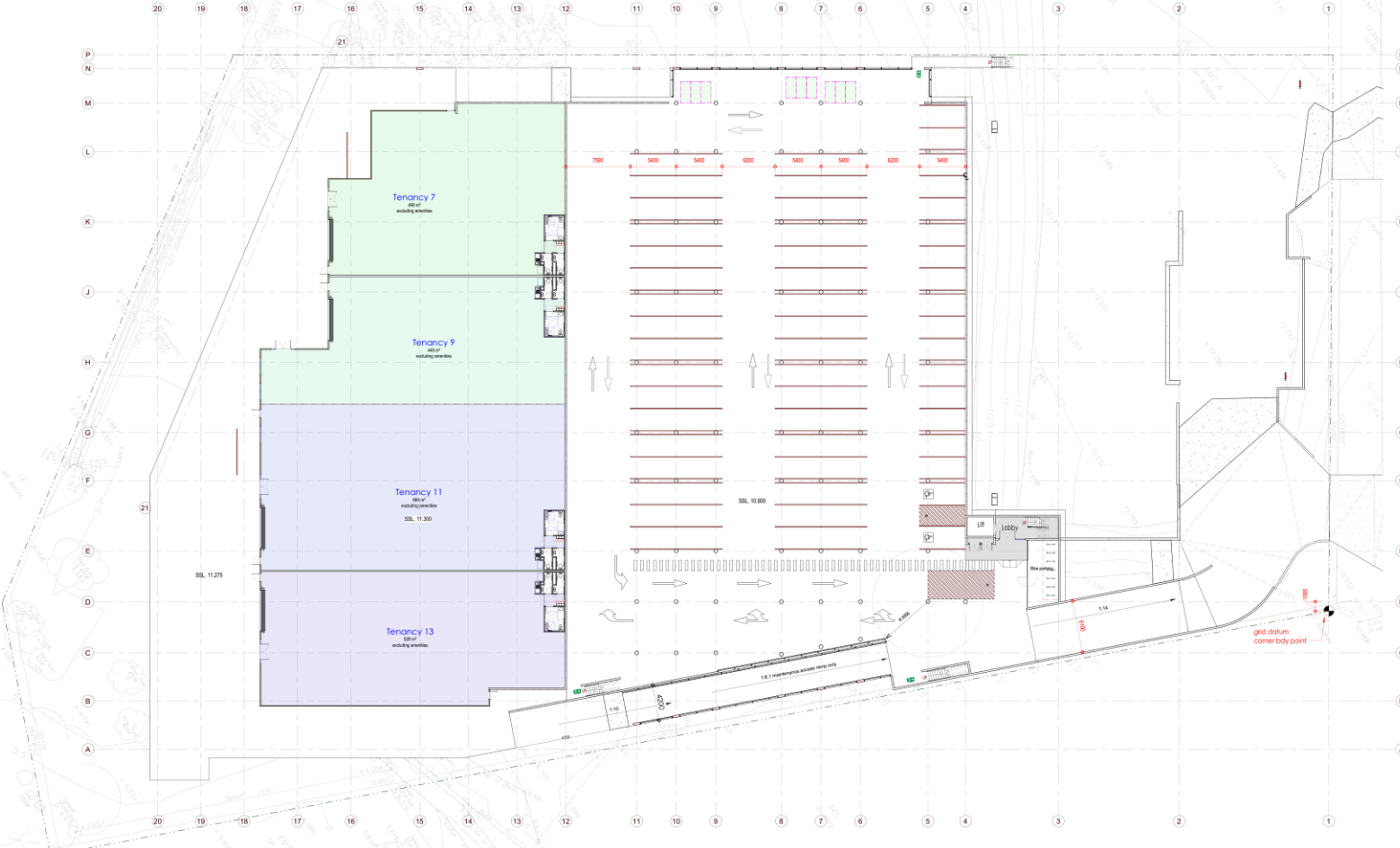
APPENDIX B

Development Plans

[illegible]

1 Site Plan
1 : 250

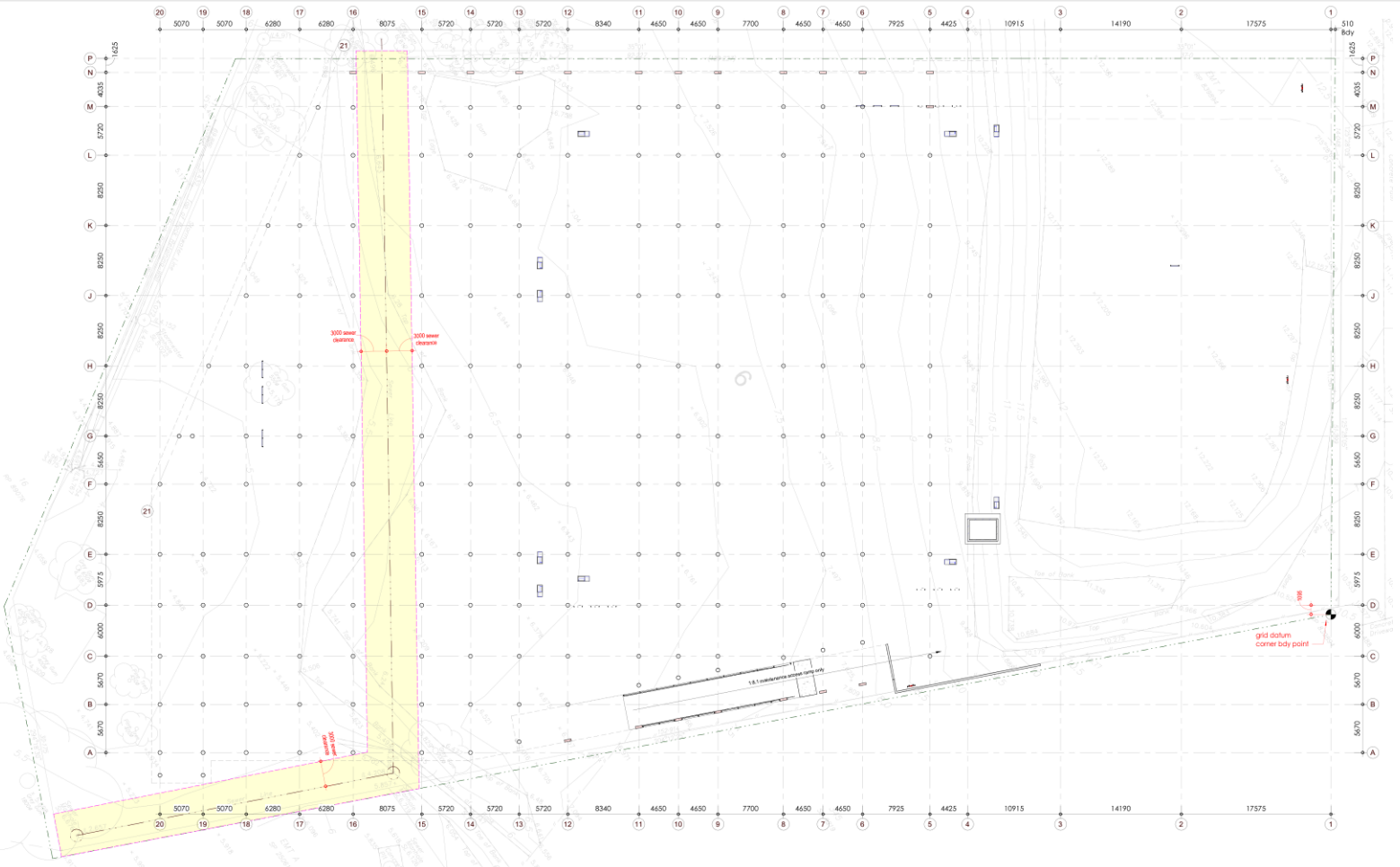




1 Lower warehouse / parking level
1:200

GARY GRIEVE DESIGN BUILDING DESIGN & DRAFTING 3753-3755 Pacific Highway, Sackville NSW 2355 Phone: 08 9371 1111 Email: gary@garygrieve.com.au Website: www.garygrieve.com.au		CLIENT HKG JV Pty Ltd.	PROJECT Proposed Warehouse Development 3753-3755 Pacific Highway, Sackville NSW 2355	DRAWING TITLE Lower warehouse & parking level plan	DATE April 2025 SCALE 1:200 PROJECT NO. 477 DRAWN BY Author CHECKED BY DA-012 REV. D
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PRELIMINARY ISSUE



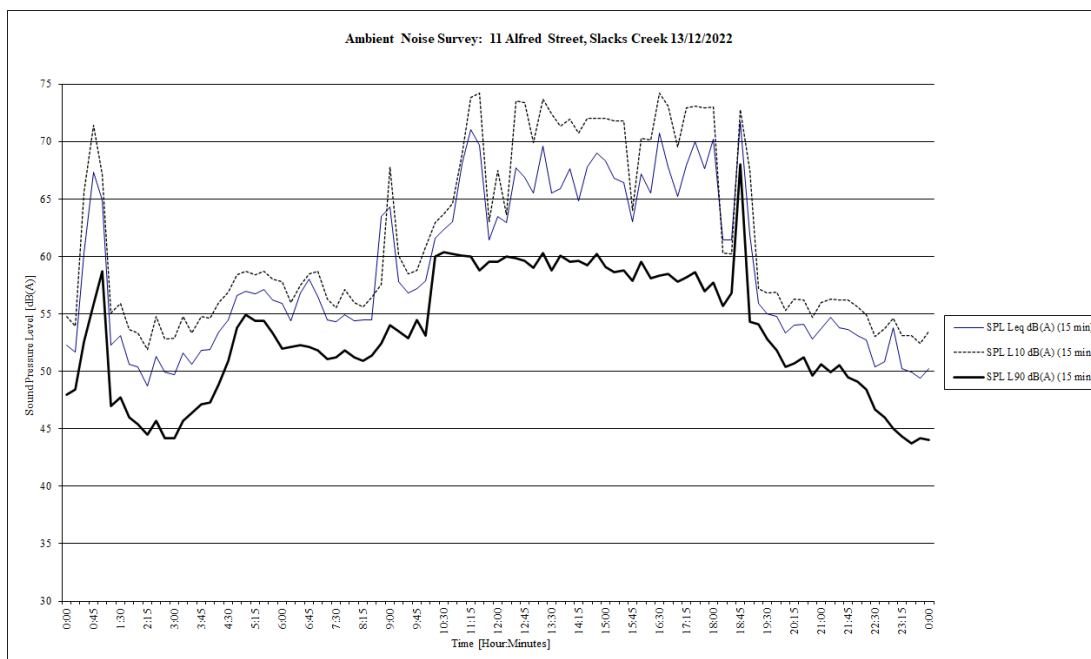
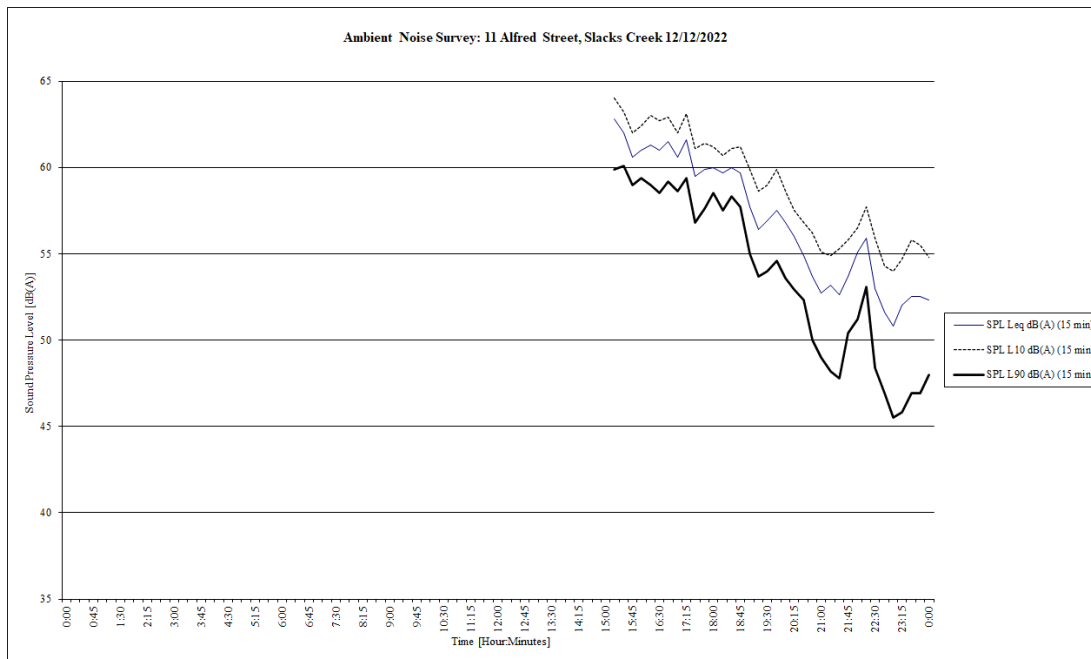
1 Undercroft plan
1:200

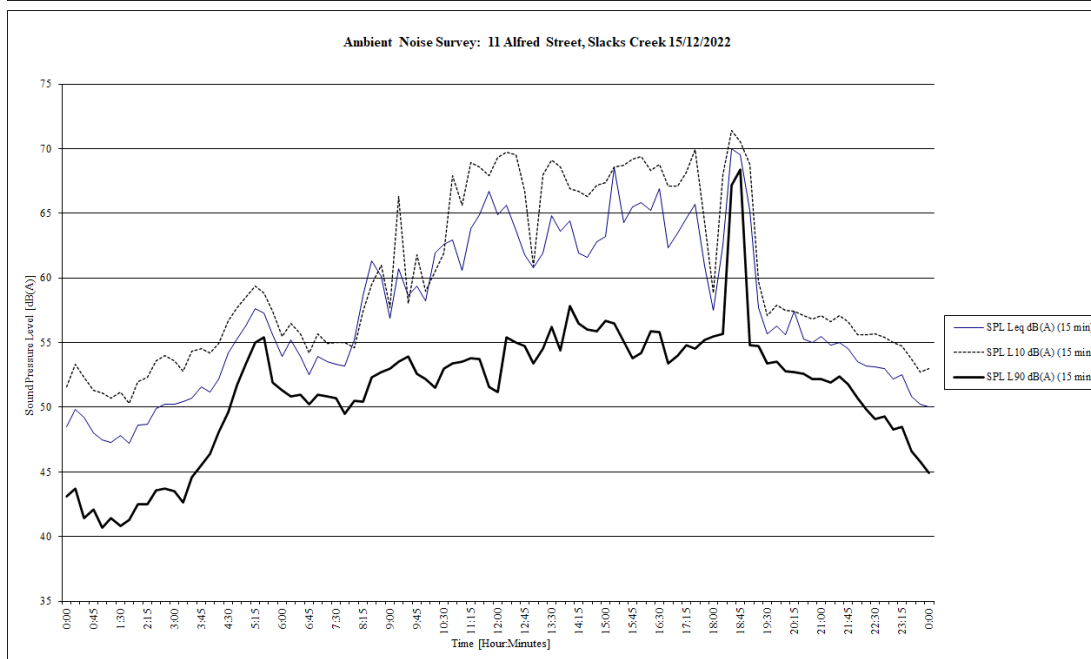
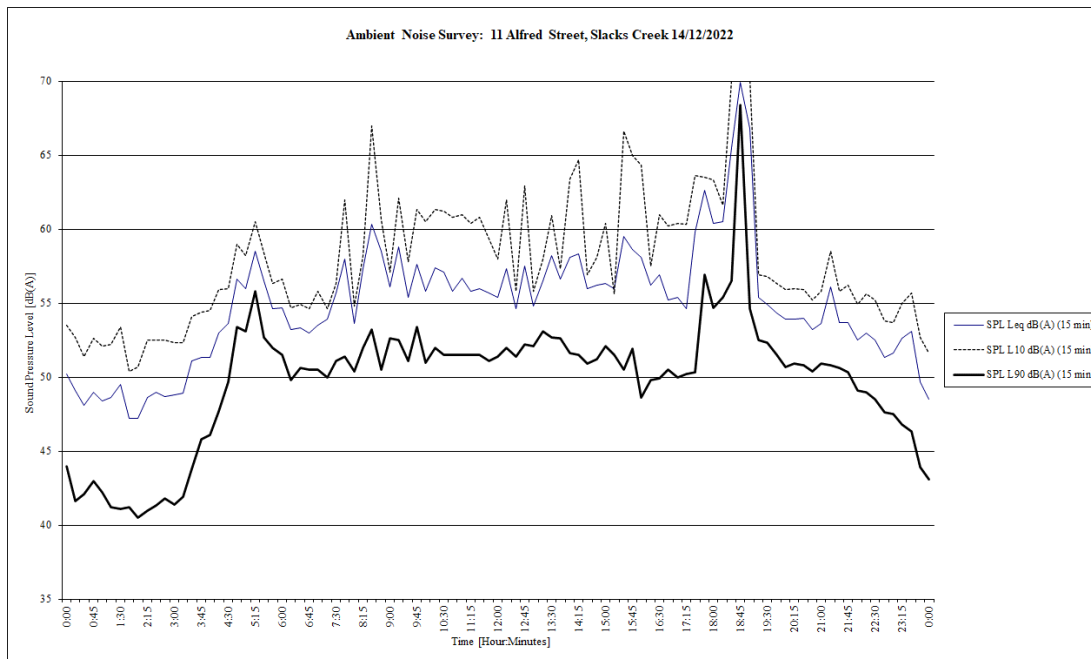
GARY GRIEVE DESIGN BUILDING DESIGN & DRAFTING 3753-3755 Pacific Highway, Sackville NSW 2355 Phone: 08 9371 1111 Email: gary@garygrieve.com.au Website: www.garygrieve.com.au		CLIENT HKG JV Pty Ltd.	PROJECT Proposed Warehouse Development 3753-3755 Pacific Highway, Sackville NSW 2355	DRAWING TITLE Undercroft plan	DATE April 2025 SCALE 1:200 PROJECT NO. 477 DRAWN BY Author CHECKED BY DA-013 REV. C
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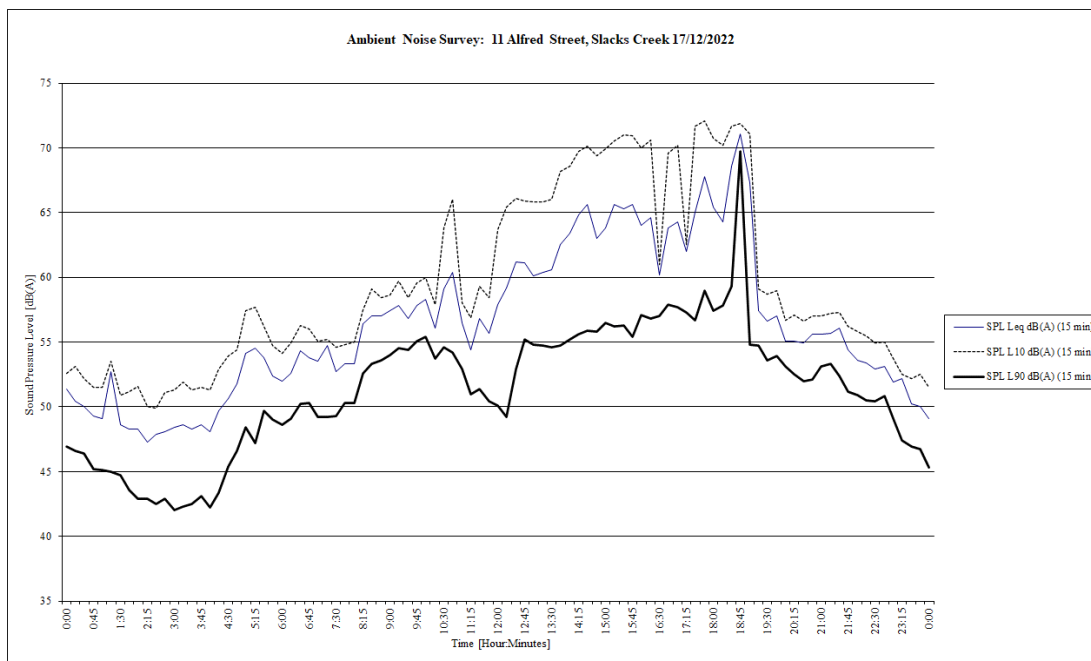
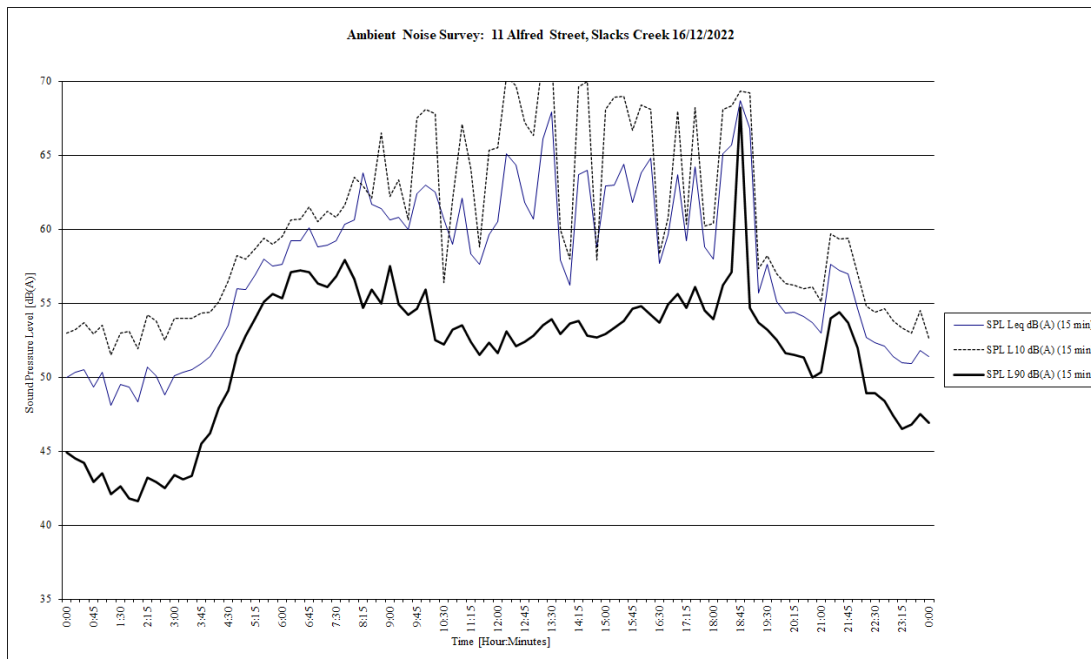
PRELIMINARY ISSUE

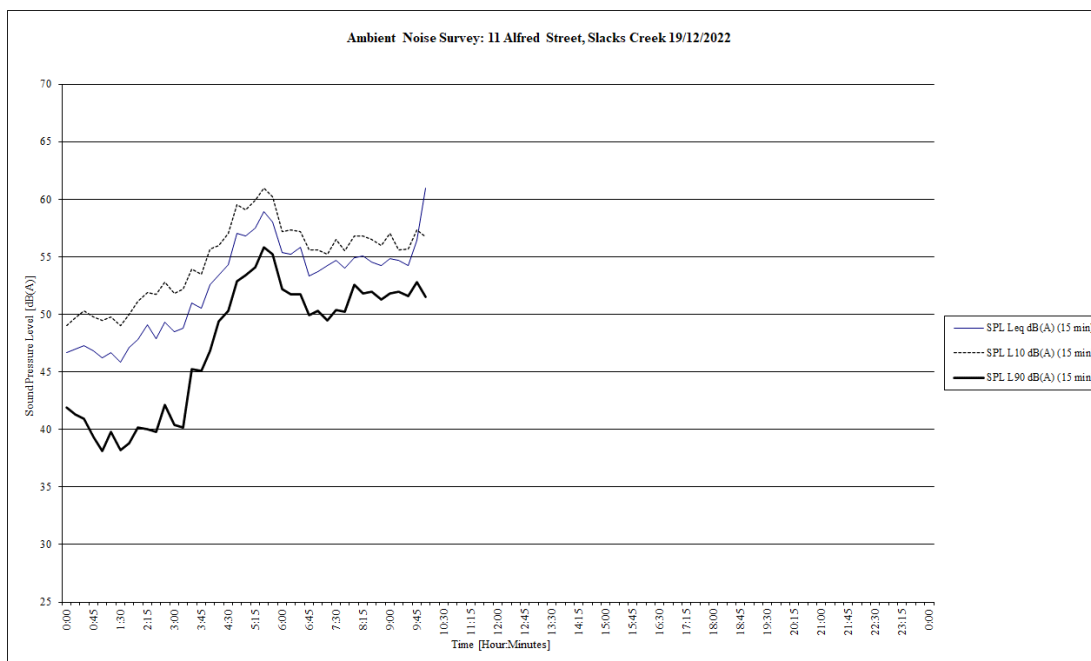
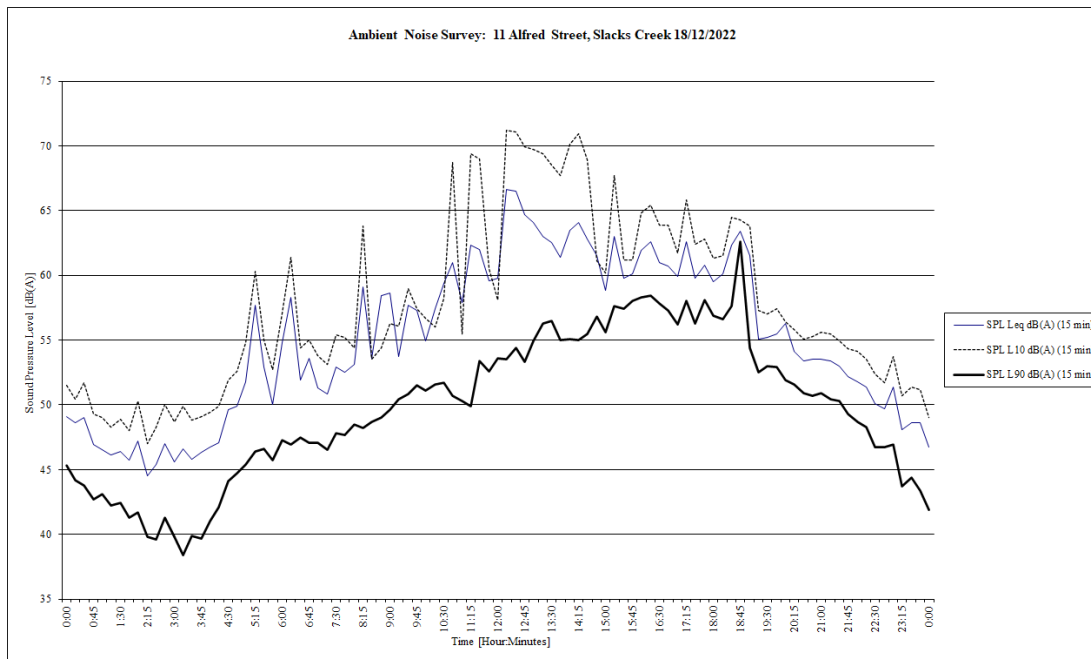
APPENDIX C

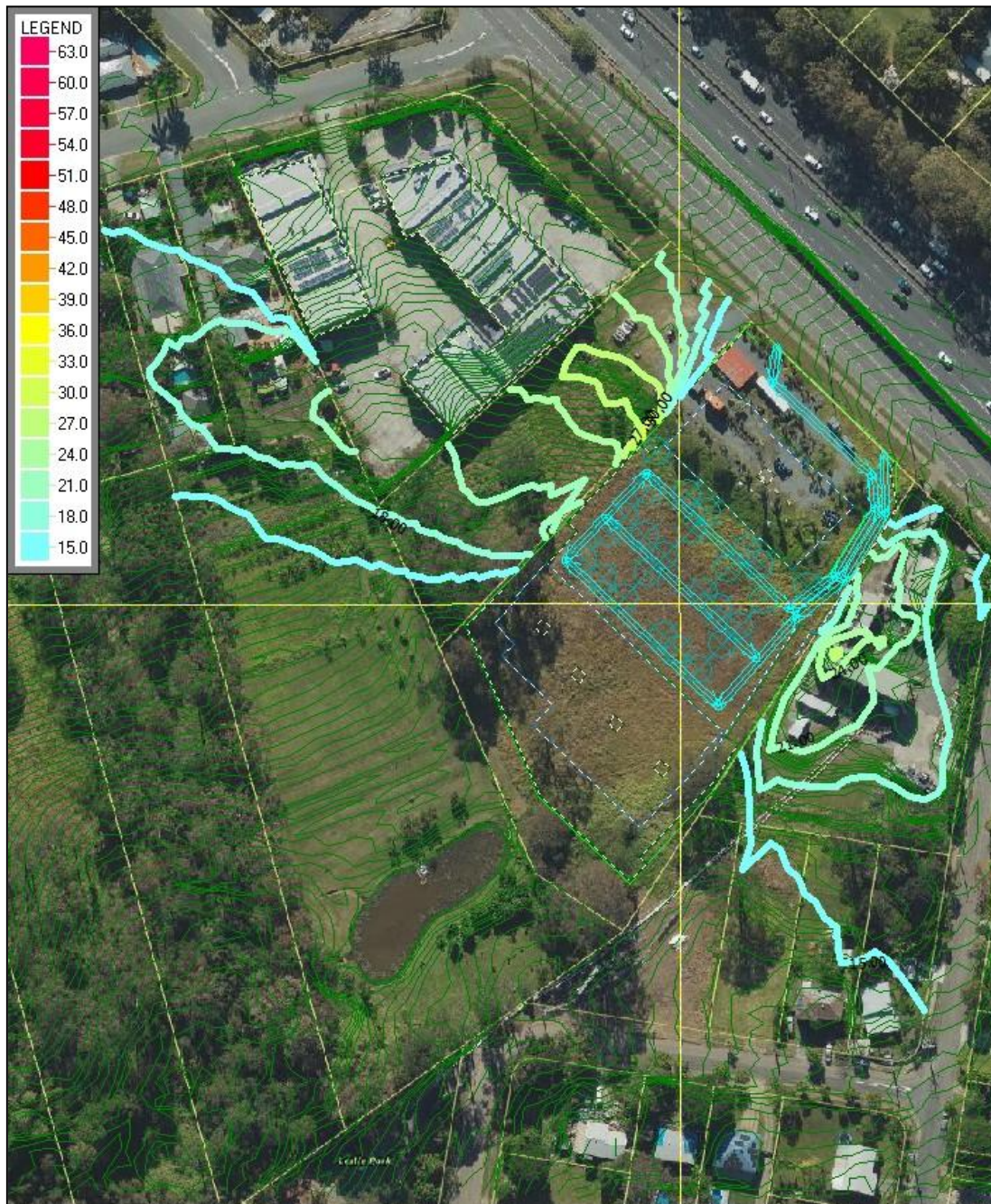
Attachments, and Model Calculations / Predictions



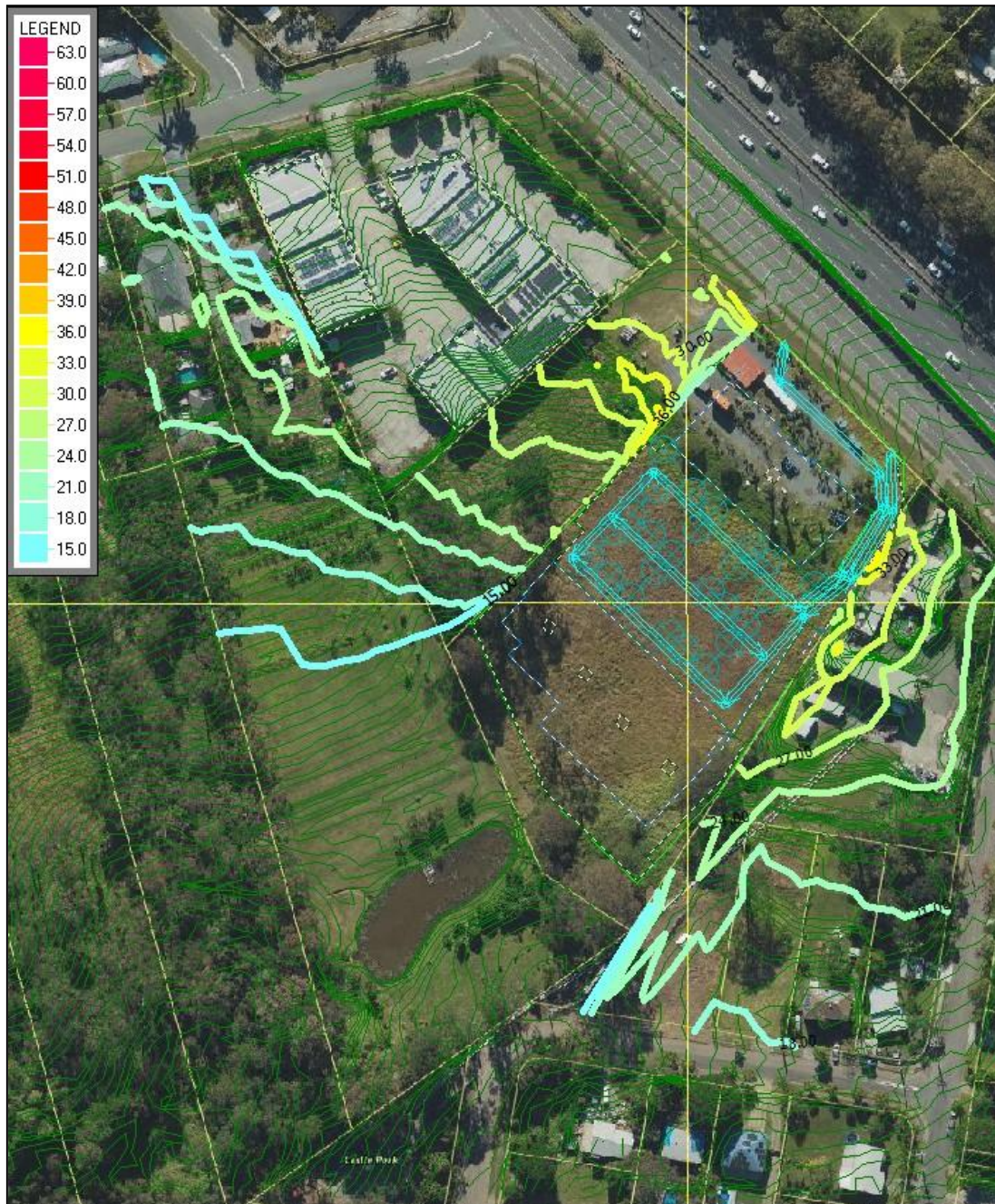




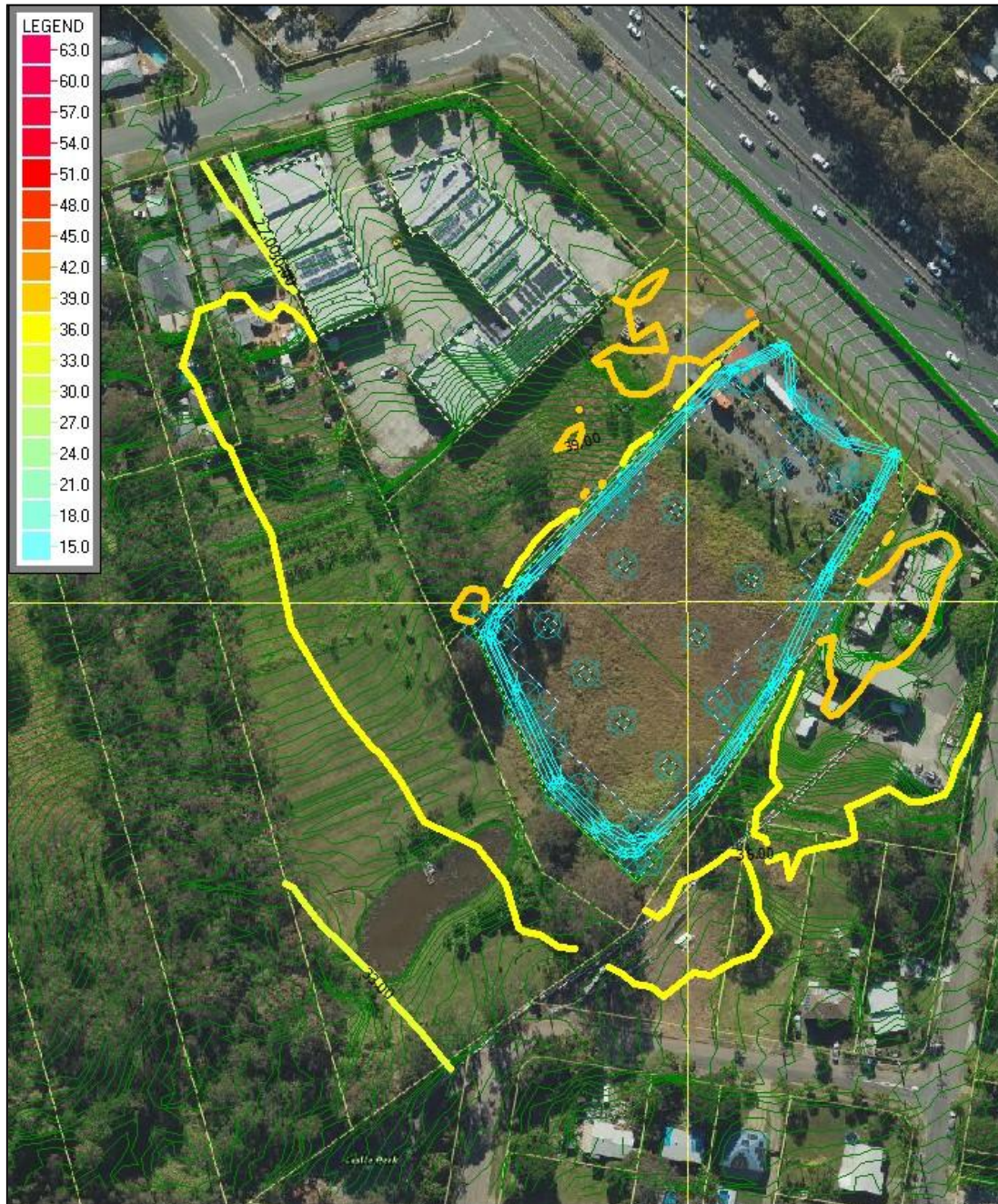


NOISE CONTOURS: L_{eq} Lower Floor, Car Door Closures.

NOISE CONTOURS: L_{eq} Lower Floor, Car Movements.



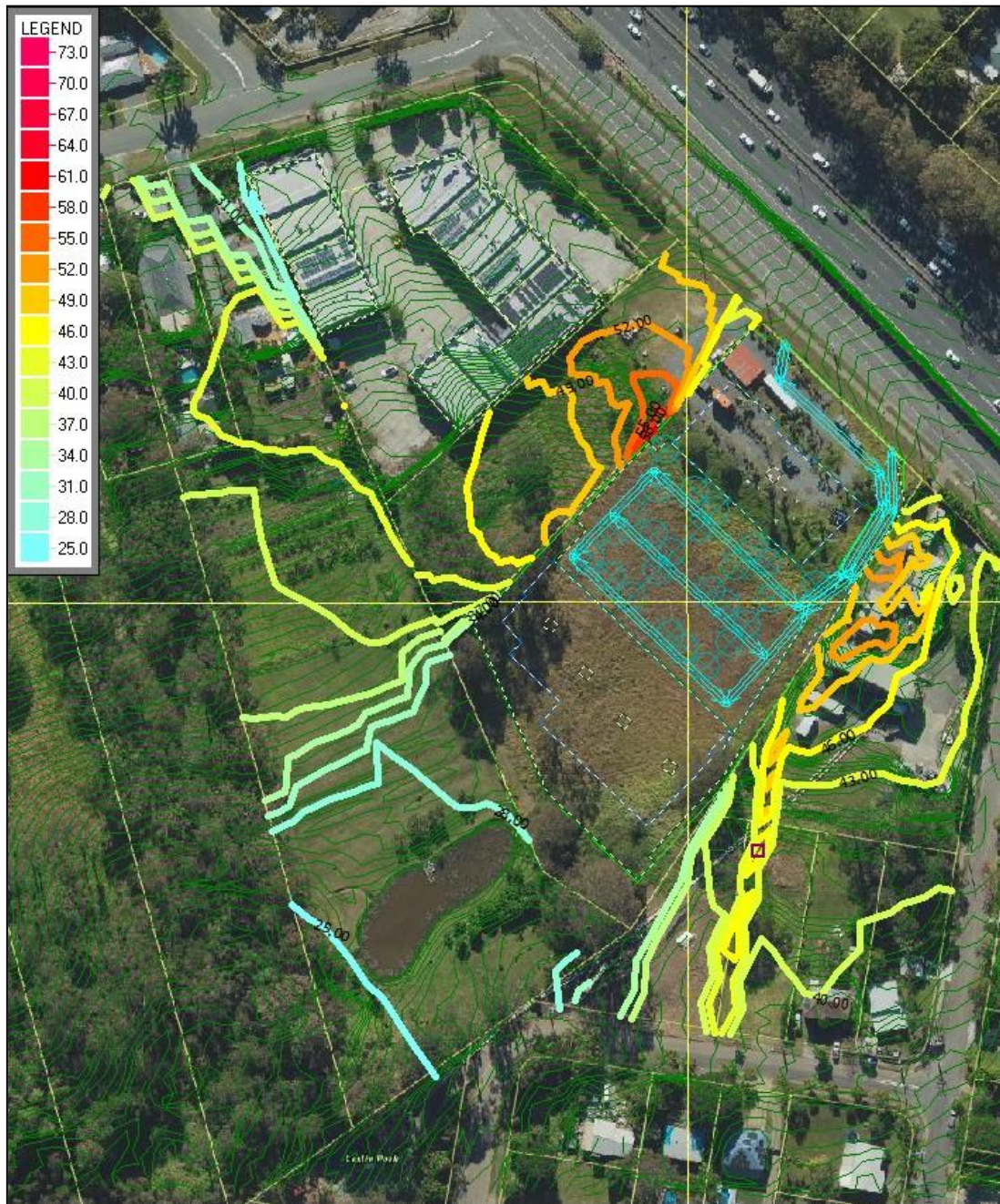
NOISE CONTOURS: L_{eq} Main Floor, Car Door Closures, People / Staff Talking Outside, Deliveries, and AC Plant.



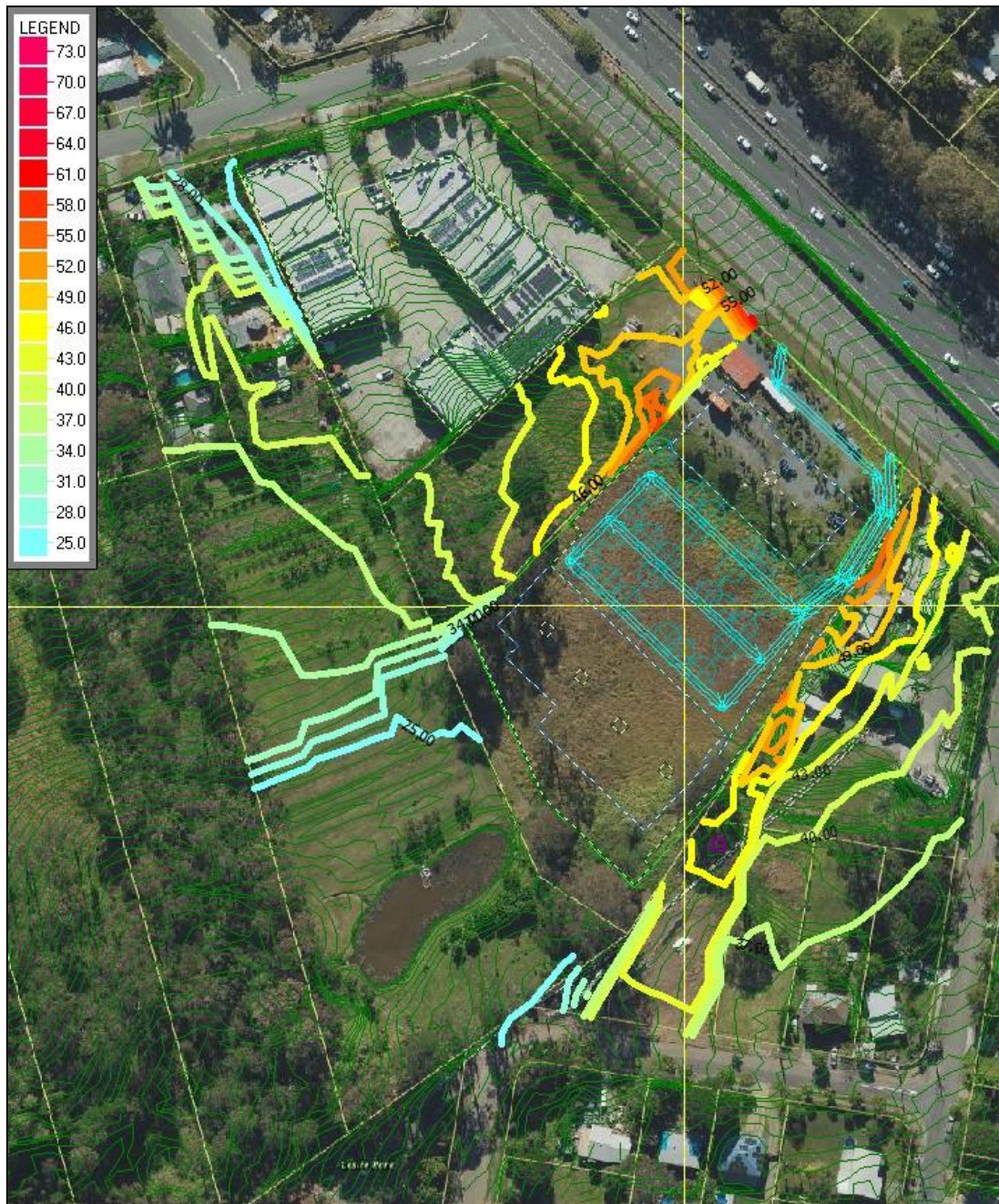
NOISE CONTOURS: L_{eq} Main Floor, Car and MRV Truck Movements.



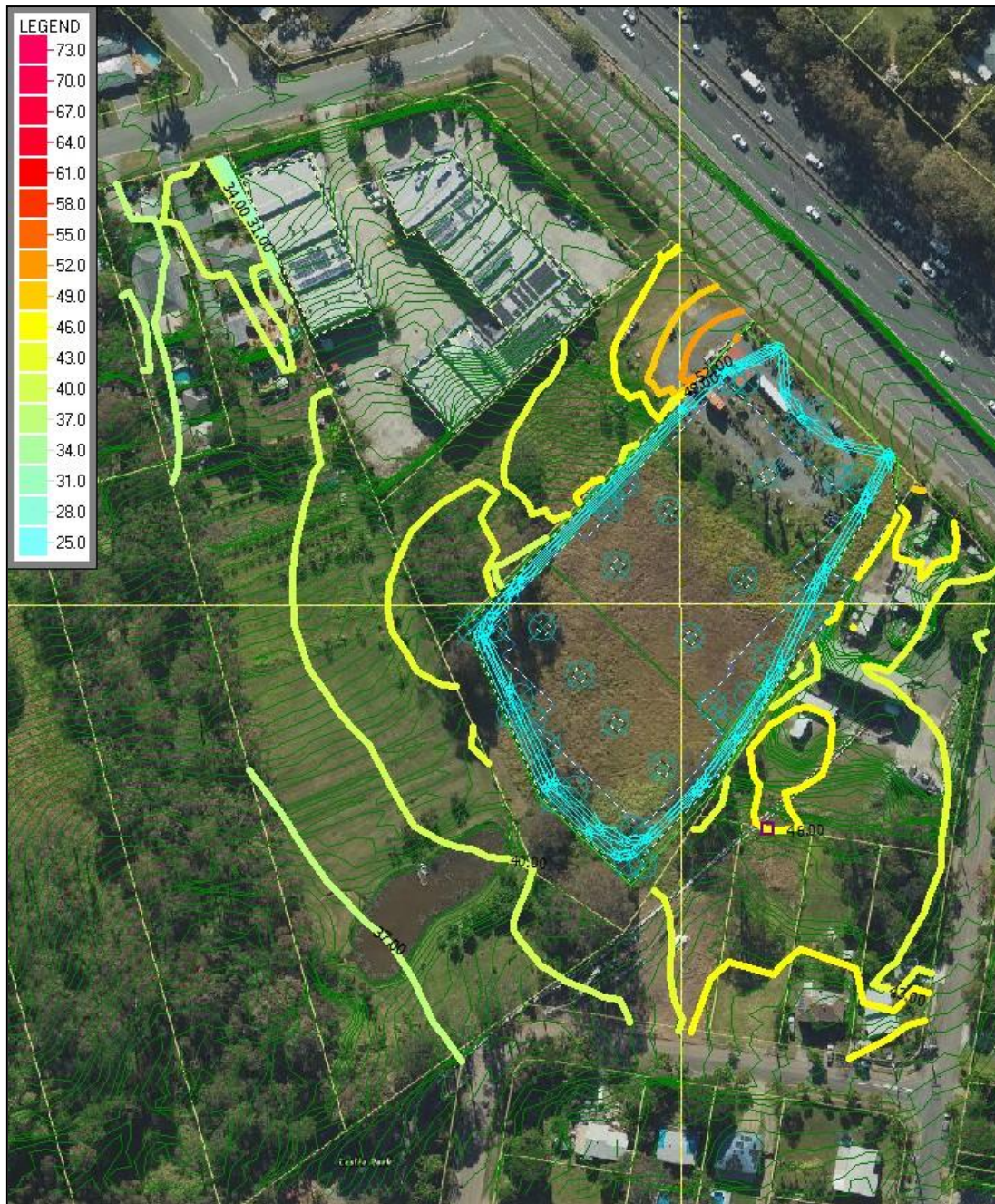
NOISE CONTOURS: L_{max} , Lower Floor, Car Door Closures.



NOISE CONTOURS: L_{max} , Lower Floor, Car Movements.



NOISE CONTOURS: L_{max} Main Floor, Car Door Closures, People / Staff Talking Outside, Deliveries, and AC Plant.



NOISE CONTOURS: L_{max} Main Floor, Car and MRV Truck Movements.

