



Forest High School

Construction Noise and Vibration Management Plan

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E-LAB Consulting

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1 INTRODUCTION

This Construction Noise and Vibration Management Plan has been prepared for the Forest High School to assess noise from the proposed public domain works along Allambie Road. We understand the school will be in operation during the public domain works involving the upgrade to the Allambie Road/Aquatic Drive intersection.

This Construction Noise and Vibration Management Plan provides:

- Criteria for the noise and vibration generated during construction
- A quantitative assessment of the airborne and ground-borne noise generated by the work for the proposed development and its impact on nearby receivers
- Strategies to mitigate the noise and vibration generated during the construction works
- Complaints handling and community liaison procedures

This assessment discusses the predicted impact of the construction noise and vibration generated by the construction equipment on the nearest most-affected receivers.

This report has been prepared with the following references:

- Noise and Vibration Impact Assessment Report (SSDA Acoustic Report) prepared by Resonate dated 10 March 2023
- Interim Construction Noise Guideline (ICNG), NSW DECC, 2009
- Construction Noise Strategy, Transport for NSW, 2013
- Noise Policy for Industry (NPI), NSW EPA, 2017
- Assessing Vibration: A Technical Guideline, NSW DEC, 2006
- AS 2436:2010 *Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites*
- British Standard BS 5228: Part 1:1997 *Noise and Vibration Control on Construction and Open Sites*
- British Standard BS 7358:1993 *Evaluation and Measurement for Vibration in Buildings – Part 2: Guide to Damage Levels from Ground-borne Vibration*
- German Standard DIN 4150-Part 3 *Structural vibration in buildings – Effects on structures*

2 PROJECT DESCRIPTION

2.1 SITE DESCRIPTION AND NOISE & VIBRATION SENSITIVE RECEIVERS

For the purposes of this construction noise and vibration management plan, the site location, surrounding noise and vibration sensitive receivers, and proposed intersection upgrade works zone are shown in Figure 1.

Figure 1: Overview of the site, measurement locations and surrounding sensitive receivers

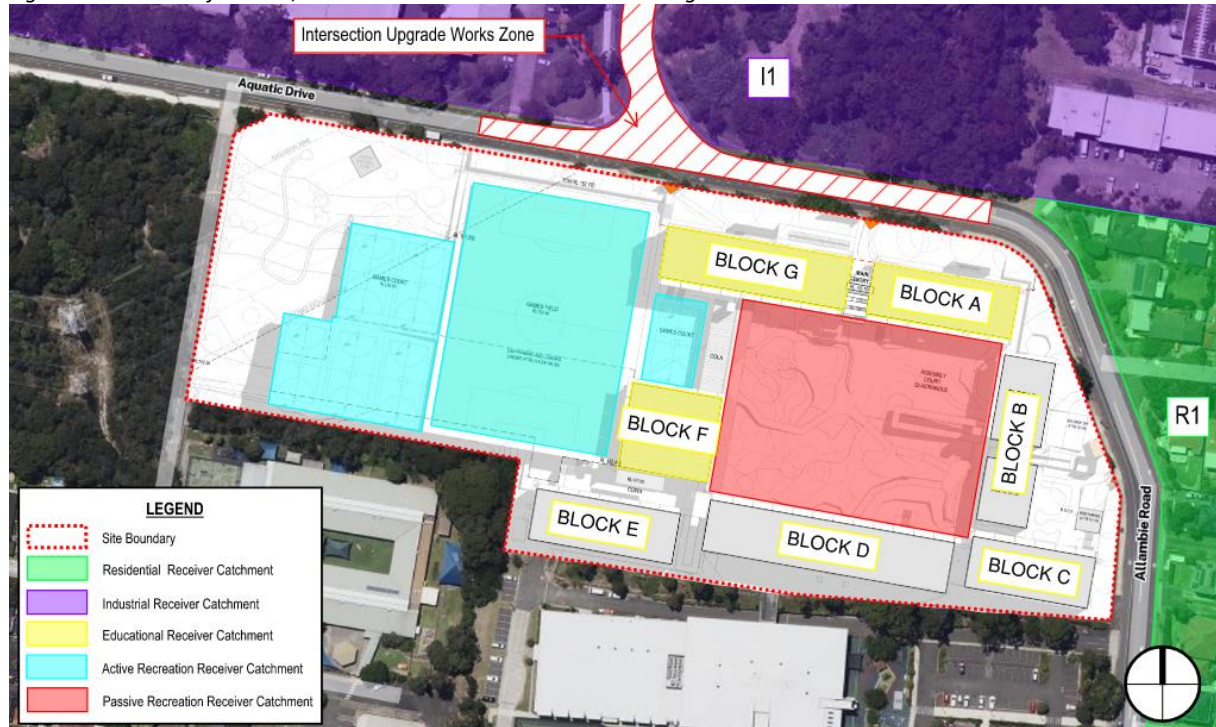


Table 1: Summary of receiver locations

RECEIVER	DESCRIPTION
R1	Existing residential dwellings and residential flat buildings situated east of the project site along Allambie Road.
I1	Existing industrial buildings north of the project site along Aquatic Drive and Allambie Road.
BLOCK A	Educational building situated within the project site.
BLOCK F	Educational building situated within the project site.
BLOCK G	Educational building situated within the project site.
QUADRANGLE	Passive Recreational area situated within the project site.
GAMES COURT (EAST)	Active Recreational area situated within the project site.
GAMES COURT (WEST)	Active Recreational area situated within the project site.
GAMES FIELD	Active Recreational area situated within the project site.

3 BACKGROUND AND AMBIENT NOISE MONITORING

Long term noise monitoring was previously undertaken for the project site within the SSDA Acoustic Report dated October 2022 (document reference: The Forest High School - Noise and vibration impact assessment Reference S210867RP1 Revision D by Resonate).

The noise survey results have been extrapolated from the SSDA Acoustic Report in Table 2 for reference.

Table 2: Summary of long-term background noise monitoring (from SSDA Acoustic Report)

LOCATION	EQUIVALENT CONTINUOUS NOISE LEVEL LEVEL $L_{Aeq,period}$, dB(A)			BACKGROUND NOISE LEVEL RBL, dB(A)		
	DAY	EVENING	NIGHT	DAY	EVENING	NIGHT
L1	54	54	48	45	41	43
L2	51	45	44	37	32	30

4 PROJECT NOISE AND VIBRATION CRITERIA

4.1 CONSTRUCTION NOISE CRITERIA

The intersection upgrade works are expected to be limited to those specified by Conditions C3 to C7 of the development consent, which includes the following:

Construction Hours

C3. *Construction, including the delivery of materials to and from the site, may only be carried out between the following hours:*

- (a) Between 7am and 6pm, Mondays to Fridays inclusive; and*
- (b) Between 8am and 1pm, Saturdays.*

No work may be carried out on Sundays or public holidays.

C4. *Notwithstanding condition C3, provided noise levels do not exceed the existing background noise level plus 5dB, works may also be undertaken during the following hours:*

- (a) Between 6pm and 7pm, Mondays to Fridays inclusive; and*
- (b) Between 1pm and 4pm, Saturdays.*

C5. *Construction activities may be undertaken outside of the hours in condition C3 and C4 if required:*

- (a) By the Police or a public authority for the delivery of vehicles, plant or materials; or*
- (b) In an emergency to avoid the loss of life, damage to property or to prevent environmental harm; or*
- (c) Where the works are inaudible at the nearest sensitive receivers; or*
- (d) For the delivery, set-up and removal of construction cranes, where notice of the crane-related works is provided to the Planning Secretary and affected residents and other sensitive receivers at least seven days prior to the works; or*
- (e) Where a variation is approved in advance in writing by the Planning Secretary or their nominee if appropriate justification is provided for the works.*

C6. *Notification of such construction activities as referenced in condition C5 must be given to affected residents before undertaking the activities or as soon as is practical afterwards.*

C7. *Rock breaking, rock hammering, sheet piling, pile driving and similar activities may only be carried out between the following hours:*

- (a) 9am to 12pm, Monday to Friday;*
- (b) 2pm to 5pm Monday to Friday; and*
- (c) 9am to 12pm, Saturday.*

Airborne Noise – Residential Receivers

The airborne noise criteria for surrounding residential receivers have been extracted from Table 2 in the ICNG and is presented in Table 3 below.

Table 3: NSW ICNG construction noise criteria for surrounding residential receivers

TIME OF DAY	MANAGEMENT LEVEL, $L_{Aeq,15min}^1$	HOW TO APPLY
Recommended Standard Hours: Monday – Friday 7am – 6pm	Noise Affected RBL + 10dB	The noise-affected level represents the point above which there may be some community reaction to noise. - Where the predicted or measured $L_{Aeq,15min}$ is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level. - The proponent should also inform all potentially impacted residences of the nature of works to be carried out, the expected noise levels and duration as well as contact details.
Saturday 8am – 1pm No work on Sundays or public holidays	Highly Noise Affected 75 dB(A)	The highly noise affected level represents the point above which there may be strong community reaction to noise. - Where noise is above this level, the relevant authority (consent, determining or regulatory) may require respite periods by restricting the hours that the very noisy activities can occur in, taking into account: - Times identified by the community when they are less sensitive to noise (such as before and after school, for works near schools, or mid-morning or mid-afternoon for works near residences) - If the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.
Outside Recommended Standard Hours	Noise Affected RBL + 5dB	- The proponent should apply all feasible and reasonable work practices to meet the noise affected level. - Where all feasible and reasonable practices have been applied and noise is more than 5 dB(A) above the noise affected level, the proponent should negotiate with the community. - For guidance on negotiating agreements see section 7.2.2 (of ICNG).

Note 1: Noise levels apply at the property boundary that is most exposed to construction noise, and at a height of 1.5 m above ground level. If the property boundary is more than 30 m from the residence, the location for measuring or predicting noise levels is at the most noise-affected point within 30m of the residence. Noise levels may be higher at upper floors of the noise affected residence.

Airborne Noise – Non-Residential Receivers

Table 4 below (extracted from Section 4.1.2 and 4.1.3 of the ICNG) sets out the noise management levels for other land uses. The external noise levels should be assessed at the most affected occupied point for commercial and industrial uses, and at the most affected point within 50 metres of the area boundary for parks.

Table 4: NSW ICNG construction noise criteria for surrounding commercial receivers

RECEIVER TYPE	MANAGEMENT LEVEL (APPLIES WHEN PROPERTIES ARE BEING USED) $L_{Aeq,15min}$, dB(A)
Classrooms at schools and other educational institutions	45 (Internal) 55 (External)

RECEIVER TYPE	MANAGEMENT LEVEL (APPLIES WHEN PROPERTIES ARE BEING USED) $L_{Aeq,15min}$, dB(A)
Active Recreation Areas	65 (External)
Passive Recreation Areas	60 (External)

Based on the criteria in the tables above, the following noise management levels in Table 5 should be applied to the residential and non-residential receivers as identified in Figure 1 when appropriate. Construction during standard hours has been assumed.

Table 5: Project Specific Construction Noise Management Levels

LAND USE	RECEIVER	NOISE MANAGEMENT LEVEL, $L_{Aeq,15min}$	HIGHLY NOISE AFFECTED LEVEL $L_{Aeq,15min}$
Residential	R1	45dB(A) + 10 dB = 55	75 dB(A)
Industrial	I1	75	75 dB(A)
School Blocks	-	45 (Internal)	N/A
School Quadrangle	-	60	N/A
School Games Court/Field	-	65	N/A

4.2 CONSTRUCTION VIBRATION CRITERIA

4.2.1 Human Comfort

The office of Environment and Heritage (OEH) developed a document, “Assessing vibration: A technical guideline” in February 2006 to assist in preventing people from exposure to excessive vibration levels from construction and operation of a development within buildings. The guideline does not however address vibration induced damage to structures or structure-borne noise effects. Vibration and its associated effects are usually classified as continuous, impulsive or intermittent.

Continuous and Impulsive Vibration

Structural vibration in buildings can be detected by occupants and can affect them in many ways including reducing their quality of life and also their working efficiency. Complaint levels from occupants of buildings subject to vibration depend upon their use of the building and the time of the day.

Maximum allowable magnitudes of building vibration with respect to human response are shown in Table 6. It should be noted that the human comfort for vibration is more stringent than the building damage criteria.

Table 6: Preferred and maximum weighted RMS values for continuous and impulsive vibration acceleration (m/s^2) 1-80 Hz

LOCATION	ASSESSMENT PERIOD ¹	PREFERRED VALUES		MAXIMUM VALUES	
		z-axis	x- and y-axes	z-axis	x- and y-axes
Continuous vibration					
Residences	Daytime	0.010	0.0071	0.020	0.014
	Night time	0.007	0.005	0.014	0.010
Offices, schools, educational institutions and places of worship	Day- or night time	0.020	0.014	0.040	0.028
Workshops	Day- or night time	0.04	0.029	0.080	0.058
Impulsive vibration					
Residences	Daytime	0.30	0.21	0.60	0.42
	Night time	0.10	0.071	0.20	0.14
Offices, schools, educational institutions and places of worship	Day- or night time	0.64	0.46	1.28	0.92
Workshops	Day- or night time	0.64	0.46	1.28	0.92

Note 1: Daytime is 7:00am to 10:00pm and night time is 10:00pm to 7:00am

Intermittent Vibration Criteria

Disturbance caused by vibration will depend on its duration and its magnitude. This methodology of assessing intermittent vibration levels involves the calculation of a parameter called the Vibration Dose Value (VDV) which is used to evaluate the cumulative effects of intermittent vibration. Various studies support the fact that VDV assessment methods are far more accurate in assessing the level of disturbance than methods which is only based on the vibration magnitude.

Table 7: Acceptable vibration dose values for intermittent vibration (m/s^{1.75})

LOCATION	DAYTIME ¹		NIGHT-TIME ¹	
	PREFERRED VALUE	MAXIMUM VALUE	PREFERRED VALUE	MAXIMUM VALUE
Residences	0.20	0.40	0.13	0.26
Offices, schools, educational institutions and places of worship	0.40	0.80	0.40	0.80
Workshops	0.80	1.60	0.80	1.60

Note 1: Daytime is 7:00am to 10:00pm and night time is 10:00pm to 7:00am

4.2.2 Cosmetic Damage

Structural vibration thresholds are set to minimise the risk of cosmetic surface cracks and lie below the levels that have the potential to cause damage to the main structure. Table 8 presents guide values for building vibration, based on the vibration thresholds above which cosmetic damage has been demonstrated outlined within BS7385-Part 2:1993. These values are evaluated to give a minimum risk of vibration-induced damage, where minimal risk for a named effect is usually taken as 95% probability of no effect.

Table 8: Transient vibration guide values for cosmetic damage – BS 7385-2:1993

TYPE OF BUILDING	PEAK PARTICLE VELOCITY IN FREQUENCY RANGE OF PREDOMINANT PULSE (PPV)	
	4 Hz TO 15 Hz	15 Hz AND ABOVE
Reinforced or framed structures Industrial or light commercial type buildings	50mm/s	N/A
Unreinforced or light framed structures Residential or light commercial type buildings	15mm/s	20mm/s (50mm/s at 40Hz and above)

4.2.3 Structural Damage

Ground vibration criteria is defined in terms of the levels of vibration emission from the construction activities which will avoid the risk of damaging surrounding buildings or structures. It should be noted that human comfort criteria are normally expressed in terms of acceleration whereas structural damage criteria are normally expressed in terms of velocity.

Most specified structural vibration levels are defined to minimise the risk of cosmetic surface cracks and are set below the levels that have the potential to cause damage to the main structure. Structural damage criteria are presented in German Standard DIN4150-Part 3 "Structural vibration in buildings – Effects on structures" and British Standard BS7385-Part 2: 1993 "Evaluation and Measurement for Vibration in Buildings". Table 9 indicates the vibration limits presented in DIN4150-Part 3 to ensure structural damage doesn't occur.

Table 9: Guideline value of vibration velocity, v_i , for evaluating the effects of short-term vibration – DIN4150-3

LINE	TYPE OF STRUCTURE	VIBRATION VELOCITY, V_i , IN mm/s			
		FOUNDATION			PLANE OF FLOOR OF UPPERMOST FULL STOREY
		AT A FREQUENCY OF			
		LESS THAN 10HZ	10 TO 50HZ	50 TO 100HZ*	ALL FREQUENCIES
1	Buildings used for commercial purposes, industrial buildings and buildings of similar design	20	20 to 40	40 to 50	40
2	Dwellings and buildings of similar design and/or use	5	5 to 15	15 to 20	15
3	Structures that, because of their particular sensitivity to vibration, do not correspond to those listed in lines 1 and 2 and are of great intrinsic value (e.g. buildings that are under a preservation order)	3	3 to 8	8 to 10	8
*For frequencies above 100Hz, at least the values specified in this column shall be applied					

5 CONSTRUCTION NOISE ASSESSMENT

5.1 CONSTRUCTION ACTIVITIES AND HOURS

In this assessment, the noise impact from all construction works are considered. The works will consist of the following stages:

- Minor demolition (pavement/kerb and gutter) and construction of the offsite infrastructure works.

The hours of work are expected to occur during hours approved in the development consent, as outlined in Section 4.1.

5.2 EXPECTED CONSTRUCTION EQUIPMENT

The noise sources likely to be associated with the works listed are presented in Table 10. The equipment noise levels have been extracted from AS2436:2010 "Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites" and the "Construction Noise Strategy, Transport for NSW, 2013". These equipment noise levels are provided as sound power levels (in-line with the documents referenced above) and are the estimated sound power emitted by the equipment, which differs to the sound pressure level rated for equipment at a particular distance.

Table 10: Construction Equipment Noise Levels

STAGES	EQUIPMENT	SOUND POWER LEVEL dB(A)	ACOUSTICAL USAGE FACTOR (%)	USAGE IN 15 MINUTE PERIOD (MINS)	TIME CORRECTED SOUND POWER LEVEL dB(A) $L_{Aeq, 15MIN}$
Minor Demolition Works	Excavator	110	40	6	106
	Jackhammer	104	20	3	97
	Concrete Saw	110	16	2.4	102
	General Truck	108	40	6	104
Construction	Excavator	104	20	3	97
	Concrete pump	109	50	7.5	106
	Concrete Truck	107	100	15	107
	General Truck	104	40	6	100
	Milling Machine	118	66	10	116
	Powered hand tool	102	50	7.5	99

5.3 NOISE MODELLING AND ASSUMPTIONS

In order to assess the noise impact from the site during the various construction stages, a desktop noise model was prepared using commercial software SoundPLAN v9.0. The noise model represents the 'reasonable' worst case periods of construction activities, meaning that all the equipment of each stage is operating simultaneously during a 15-minute observation period.

The assumptions that were made within the assessment include the following:

- The predicted noise levels represent the worst-case scenario for each receiver
- The predicted noise levels at the receivers has been assessed at a height of 1.5m above ground level in accordance with the assessment procedures of the ICNG.
- The noise levels have been assessed using neutral weather conditions.

5.4 PREDICTED NOISE LEVELS

The predicted noise levels have been presented in the following table have been assessed to the construction noise criteria established in Section 4.1. The following figures are also available in the Appendix:

- Appendix A - Façade noise maps on school buildings showing noise levels from construction works.
- Appendix B – Noise contour maps overlayed on aerial map view of the site.

Table 11: Predicted noise levels – Minor Demolition Works

ID	RECEIVER TYPE	PREDICTED NOISE LEVEL RANGE, L _{Aeq,15min} dB(A)	NOISE MANAGEMENT LEVEL L _{Aeq,15min} dB(A)	NOISE MANAGEMENT LEVEL EXCEEDANCE, dB	EXCEEDS HIGHLY NOISE AFFECTED LEVEL (YES/NO)
R1	Residential	55	55 dB(A)	0	No
I1	Industrial	73	75 dB(A)	0	N/A
BLOCK A	Educational	37-39 (Internal – Windows Closed) 47-49 (Internal – Windows Open) 57-59 (External Facade)	45 (Internal) 55 (External)	See discussion.	N/A
BLOCK F	Educational	37-39 (Internal – Windows Closed) 47-49 (Internal – Windows Open) 57-59 (External Facade)	45 (Internal) 55 (External)	See discussion.	N/A
BLOCK G	Educational	41-43 (Internal – Windows Closed) 51-53 (Internal – Windows Open) 61-63 (External Facade)	45 (Internal) 55 (External)	See discussion.	N/A
QUADRANGLE	Passive Recreation	55	60	0	N/A
GAMES COURT (EAST)	Active Recreation	59	65	0	N/A
GAMES FIELD	Active Recreation	68	65	Up to 3dB	N/A
GAMES COURT (WEST)	Active Recreation	59	65	0	N/A

Table 12 Predicted noise levels –Construction

ID	RECEIVER TYPE	PREDICTED NOISE LEVEL RANGE, L _{Aeq,15min} dB(A)	NOISE MANAGEMENT LEVEL L _{Aeq,15min} dB(A)	NOISE MANAGEMENT LEVEL EXCEEDANCE, dB	EXCEEDS HIGHLY NOISE AFFECTED LEVEL (YES/NO)
R1	Residential	55	55 dB(A)	N/A	No
I1	Industrial	75	75 dB(A)	0	N/A
BLOCK A	Educational	45-47 (Internal – Windows Closed) 55-57 (Internal – Windows Open) 65-67 (External Facade)	45 (Internal) 55 (External)	See discussion.	N/A
BLOCK F	Educational	41-43 (Internal – Windows Closed) 51-53 (Internal – Windows Open) 61-63 (External Facade)	45 (Internal) 55 (External)	See discussion.	N/A
BLOCK G	Educational	51-53 (Internal – Windows Closed) 61-63 (Internal – Windows Open) 71-73 (External Facade)	45 (Internal) 55 (External)	See discussion.	N/A
QUADRANGLE	Passive Recreation	61	60	Up to 1dB	N/A
GAMES COURT (EAST)	Active Recreation	67	65	Up to 2dB	N/A
GAMES FIELD	Active Recreation	72	65	Up to 7dB	N/A
GAMES COURT (WEST)	Active Recreation	65	65	0	N/A

5.5 DISCUSSION

Based on the predicted noise levels in Section 5.4 above, we note:

- Noise impacts from the public domain works are expected to satisfy the noise management levels at external receivers (residential and industrial use).
 - We understand the Resonate *SSDA Acoustic Report* (Revision F dated 10th March 2023) provides predicted construction noise levels at nearby noise sensitive receivers. This report considers construction activities associated with the entire Forest High School site, which would be carried out much closer and without any noise shielding of future school blocks (including works along Allambie Road to the east of the site). Noise levels in this report are considerably lower due to the limited extent of works to be undertaken at the Allambie Road/Aquatic Drive intersection.
- Noise impacts to the school will be greatest at outdoor areas along the northern boundary, and to Blocks A, G and F (north and western facades) which will have direct line of sight to the proposed works.
 - Moderate exceedances of the internal noise management level (being 45dB(A) for classrooms) is expected when windows are open (assuming a typical 10dB reduction from outside to inside through an opening).
 - When windows are closed, noise management levels are expected to be achieved during the demolition works. Minor exceedances at Block A and G are expected during the noisiest period of works (assuming a conservative 20dB reduction through façade).
 - Internal noise levels within rooms on the south facades of Blocks A, G and F are expected to be satisfied with windows open.
 - Although the north-western façade of Block E will have limited line of sight to the proposed works, internal noise levels are expected to be achieved with windows open due to the increased distance separation compared to Blocks A, G and F.
 - Blocks B, C and D will be significantly shielded from the proposed works, and will not be in direct line of sight. Noise contours indicate internal levels will be readily achieved with windows open or closed.

6 CONSTRUCTION VIBRATION ASSESSMENT

It is expected that the demolition stage of works will carry the greatest potential to generate vibration impacts to surrounding sensitive receivers. This includes any percussive works such as hammering used for the demolition.

Safe working distances for vibration intensive plant and are quoted for both “cosmetic” damage (in accordance with BS 7385) and human comfort (in accordance with Assessing Vibration – a technical guideline), have been provided, based on the Transport for NSW’s “Construction Noise Strategy (2013)”. The recommended safe working distances for each of the plant listed above are provided in Table 13.

Table 13: Recommended safe working distances for vibration intensive plant

ACTIVITY	SAFE WORKING DISTANCE (METRES)	
	COSMETIC DAMAGE (BS 7385)	HUMAN RESPONSE (OH&E VIBRATION GUIDELINE)
Jackhammering	1m (nominal)	Avoid contact with structure
Excavator Mounted Hammering	22m	73m

The approximate distances between sensitive receivers (as identified in Figure 1) to the proposed intersection upgrade works zone where vibration intensive plant may be used during construction is provided in Table 14.

Table 14: Receiver distances from construction works

RECEIVER ID	MINIMUM DISTANCE FROM CONSTRUCTION WORKS
R1	170m
L1	50m
BLOCK A	85m
BLOCK F	100m
BLOCK G	40m
QUADRANGLE	75m
GAMES COURT (EAST)	65m
GAMES FIELD	45m
GAMES COURT (WEST)	100m

All receivers are located beyond the required minimum safe working distance for cosmetic damage as provided in Table 13, therefore it is unlikely that these receivers will be impacted by vibration. Per the recommendations of the TfNSW CNVS, dilapidation/building condition surveys are not required to assess vibration induced cosmetic damage to surrounding sensitive receivers.

Attended vibration monitoring should be considered at the commencement of work, or in the event of complaints, in order to verify the safe working distances. If the levels are compliant with the vibration limits as listed in Section 4.2, then work may proceed based on the implementation of the measures detailed in this report. If there are exceedances, reasonable and feasible mitigation measures and additional vibration monitoring should be conducted. Measures to prevent cosmetic damage to surrounding structures are provided in Section 7.

7 NOISE & VIBRATION MANAGEMENT STRATEGIES

7.1 PROJECT SPECIFIC RECOMMENDATIONS

The following noise management strategies is to be implemented by the Builder:

- Attended noise measurement or long-term noise monitoring at the commencement of works should be considered to determine the real-world construction noise levels. Where significant exceedances of the noise management level are recorded, further mitigation measures shall be investigated, including:
 - Selection of equipment with a lower sound power level or an alternate process.
 - Temporary hoarding at key locations to shield highly noise works.
- Frequent and proactive communication with the school when in operation simultaneously with the public domain works. More details are provided below.
 - The contractor must co-ordinate with the school to schedule especially noisy works outside of noise-sensitive periods such as exams, music performances and assemblies;
 - Respite periods from especially noisy works must be provided and must include the school lunch period and at least one other hour during the school day;
 - The contractor must co-ordinate with the school to schedule, wherever practicable, noise sensitive activities away from the north and west facades of Blocks A, F and G which are in direct line of sight of the works zone; and
 - Especially noisy works must be scheduled outside of core school hours wherever practicable or where the above mitigation measures are not possible
- Out of hours works shall be considered in the event the above mitigation measures above are not deemed effective, subject to the approval of the certifying authority.

7.2 COMPLAINT HANDLING PROCEDURES AND COMMUNITY LIAISON

7.2.1 Community Consultation to be Undertaken

The Community Consultation Strategy (CCS) document by School Infrastructure NSW (SINSW) provide mechanisms to facilitate communication between the Applicant, the relevant Council and the community during the design and construction of the development. This includes the following engagement techniques:

- Community contact cards
- 1300 community information line
- SINSW email service
- School communications (newsletters, app and emails)
- Project webpage
- Works notifications
- Community information sessions
- Information boards and information packs
- Door knocks
- Project working groups
- Community consultation groups
- Government agencies and consultation groups



7.2.2 Complaint Handling Procedures and Community Liaison

To assist in the management of noise and vibration complaints various procedures are to be followed. These include:

- Clearly visible signage identifying any key personnel along with their contact details to be erected along the perimeter of the building site including:
 - A 24-hour contact name, phone number and email address provided for the resident to address any complaint. The signage will declare; “For any enquiry, complaint or emergency relating to this site at any time please contact...”
- Give complaints a fair hearing
- Have a documented complaints process, including an escalation procedure so that if a complaint is not satisfied there is a clear path to follow
- Call back as soon as possible to keep people informed of action to be taken to address noise problems. Call back at night time only if requested by the complainant to avoid further disturbance
- Implement all feasible and reasonable measures to address the source of the complaint

A register is to be kept by the contractor to keep a record of complaints and detail any information associated with them. The contents of the register will include:

- The name and the address of the complainant
- Time and date of the complaint
- The nature of the complaint (Noise/Vibration)
- Subsequent details
- Remedial action undertaken

The contents of the register will be maintained and updated on a monthly basis with any new complaint without delay. The investigation of the complaint and any remedial actions will be performed by the builder and/or client representative on a monthly basis. In the event of noisy works scheduled, the builder will notify residents 5 business days in advance.

In addition to the above, complaint handling and community liaison shall also be in accordance with the procedures outlined in Section 4.1 and 6.5 within the SINSW CSS.

8 CONCLUSION

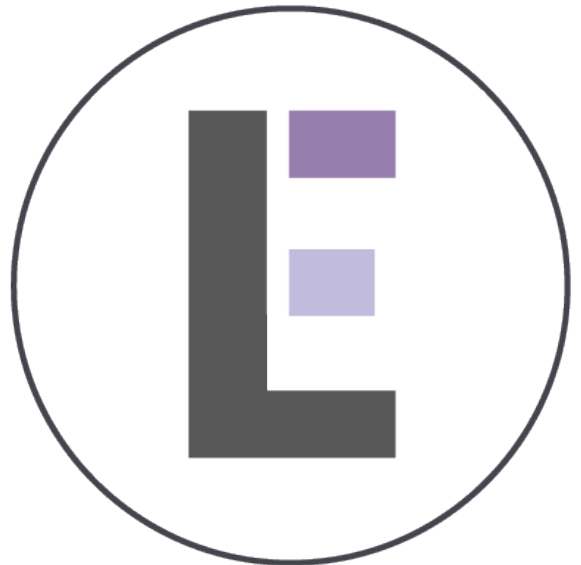
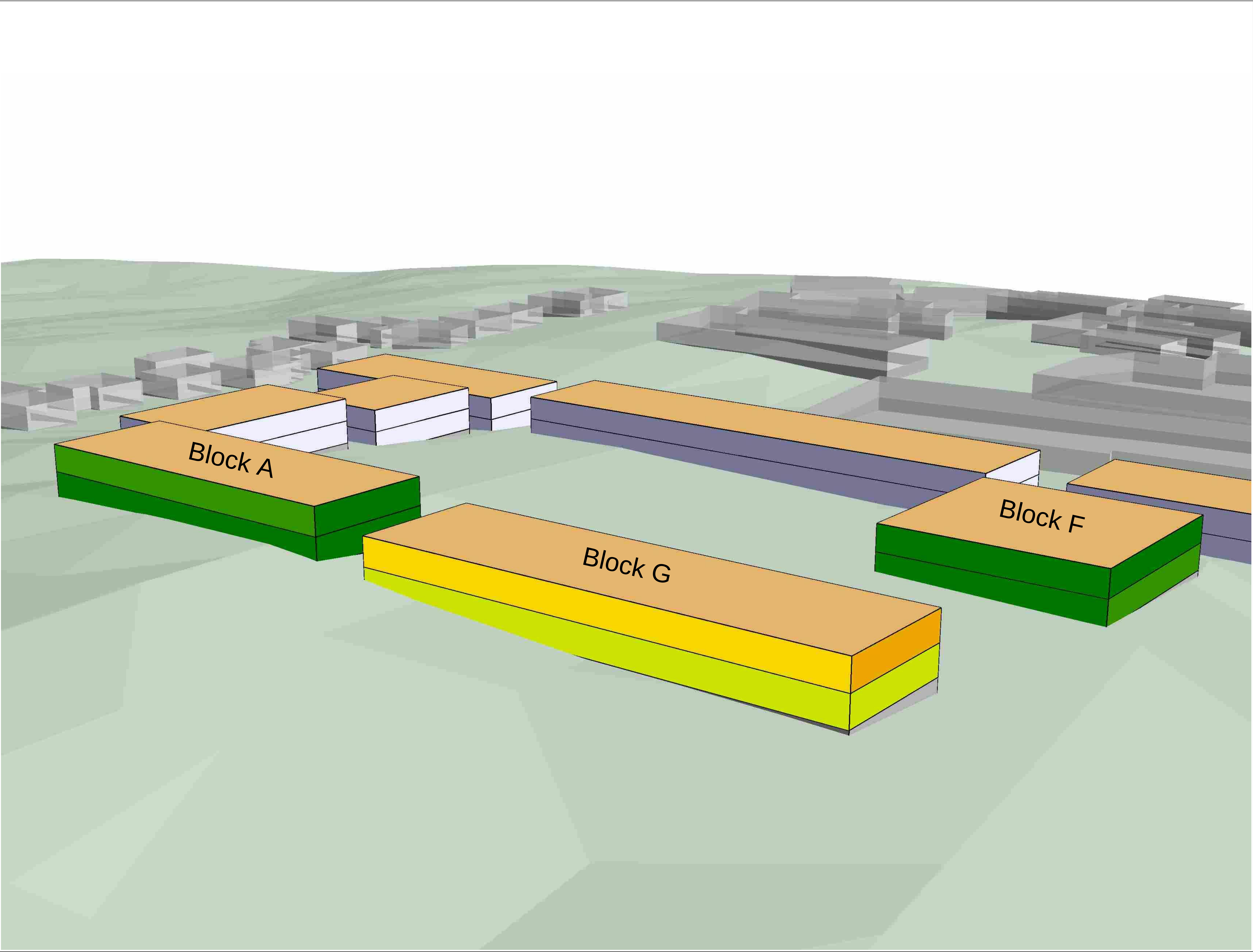
This Construction Noise and Vibration Management Plan has been prepared for the Forest High School to assess noise from the proposed Allambie Road/Aquatic Drive intersection upgrade public domain works.

The details of the noise and vibration modelling and assessment undertaken to predict the impacts on sensitive receivers have been presented in Sections 5 and 5.5, including noise impacts on the post initial occupation of the school premises by students.

To reduce the noise and vibration impacts on the sensitive receivers, noise and vibration management strategies have been proposed in Section 7.

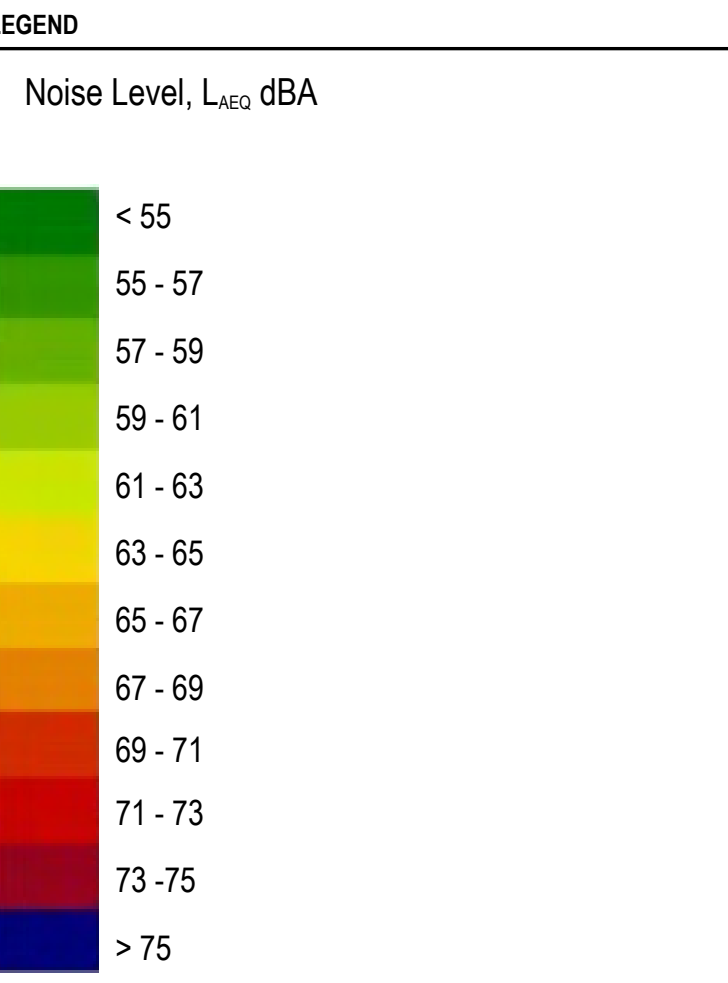
Appendix A **Façade Noise Maps**





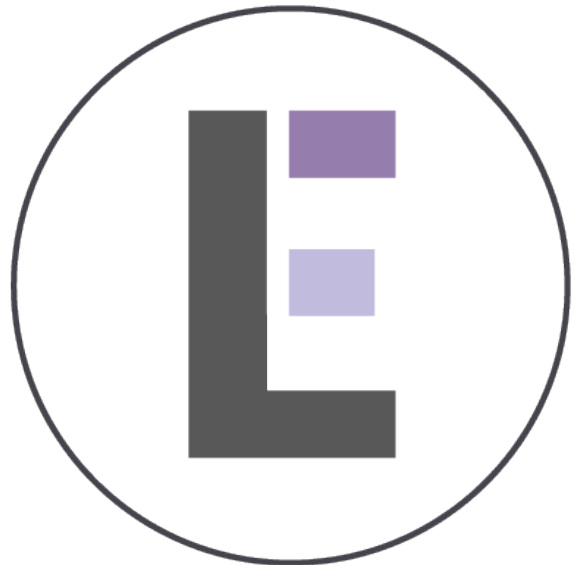
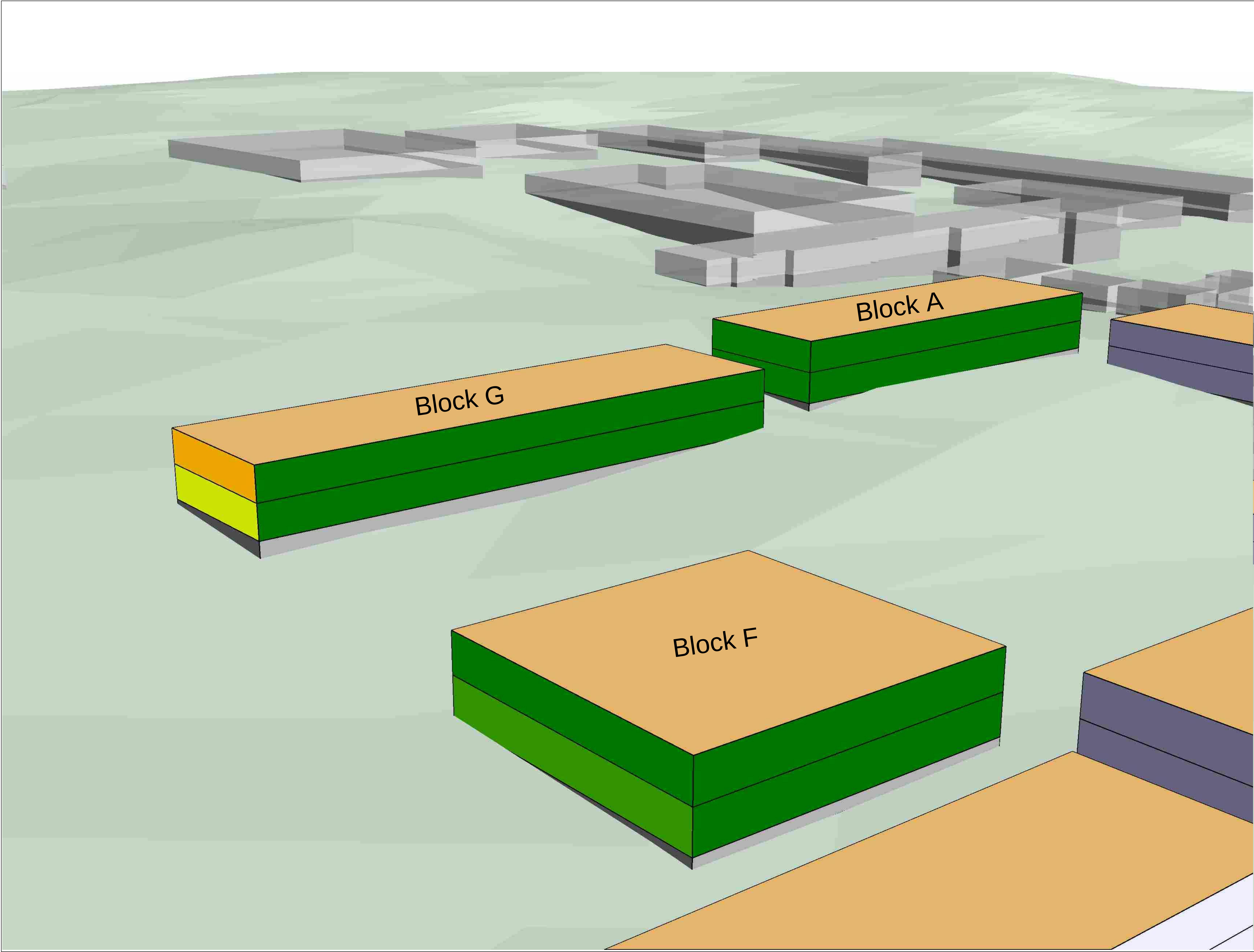
E-LAB CONSULTING

ISSUE	DATE	STATUS
1	04/04/2025	CNMP



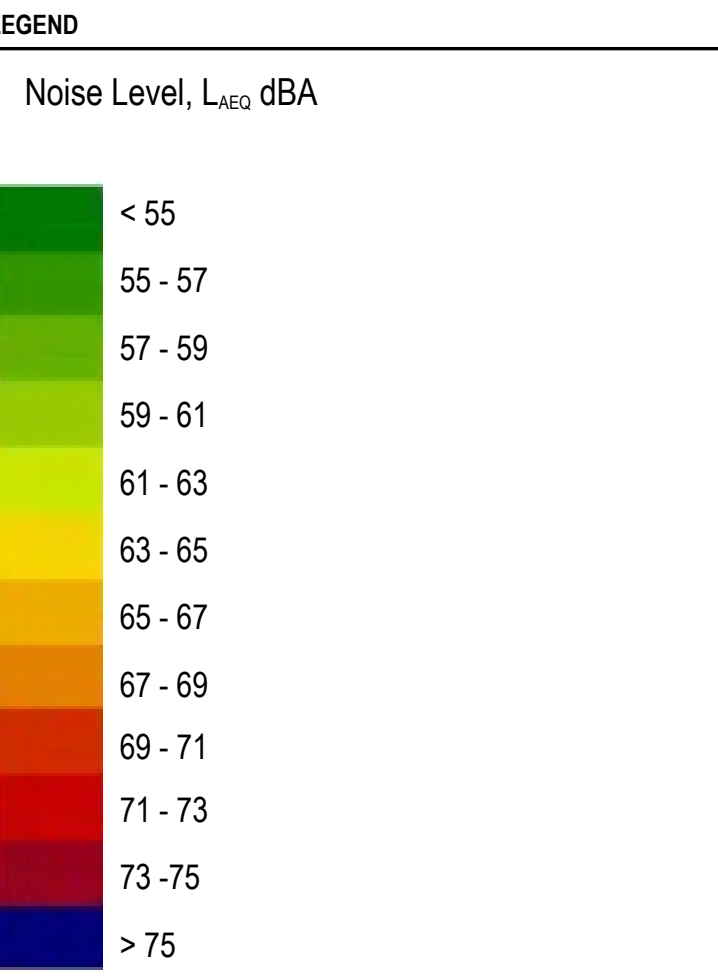
NOTES

PROJECT	THE FOREST HIGH SCHOOL
PROJECT NO.	P00757
ARCHITECT	ARCHITECTUS
CLIENT	ADCO
SCALE	NTS
STATUS	ISSUE FOR CNMP
DRAWING	FACADE NOISE MAP MINOR DEMOLITION WORKS
DISCIPLINE	ACOUSTICS
DRAWING NUMBER	AC-DWG-100-01-01
REVISION	001



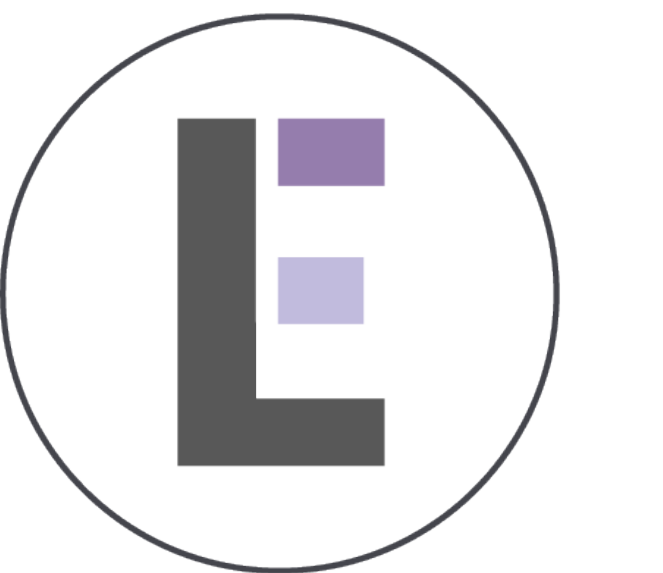
E-LAB CONSULTING

ISSUE	DATE	STATUS
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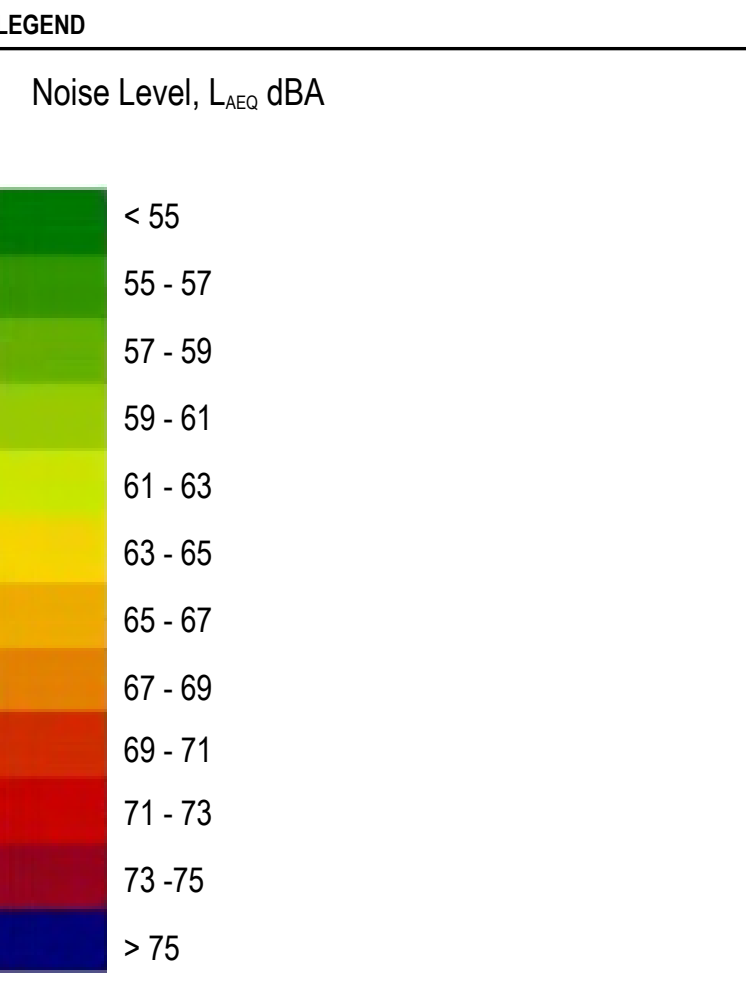
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PROJECT	THE FOREST HIGH SCHOOL
PROJECT NO.	P00757
ARCHITECT	ARCHITECTUS
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SCALE	NTS
STATUS	ISSUE FOR CNMP
DRAWING	FACADE NOISE MAP
	MINOR DEMOLITION WORKS
DISCIPLINE	ACOUSTICS
DRAWING NUMBER	AC-DWG-100-01-01
REVISION	001

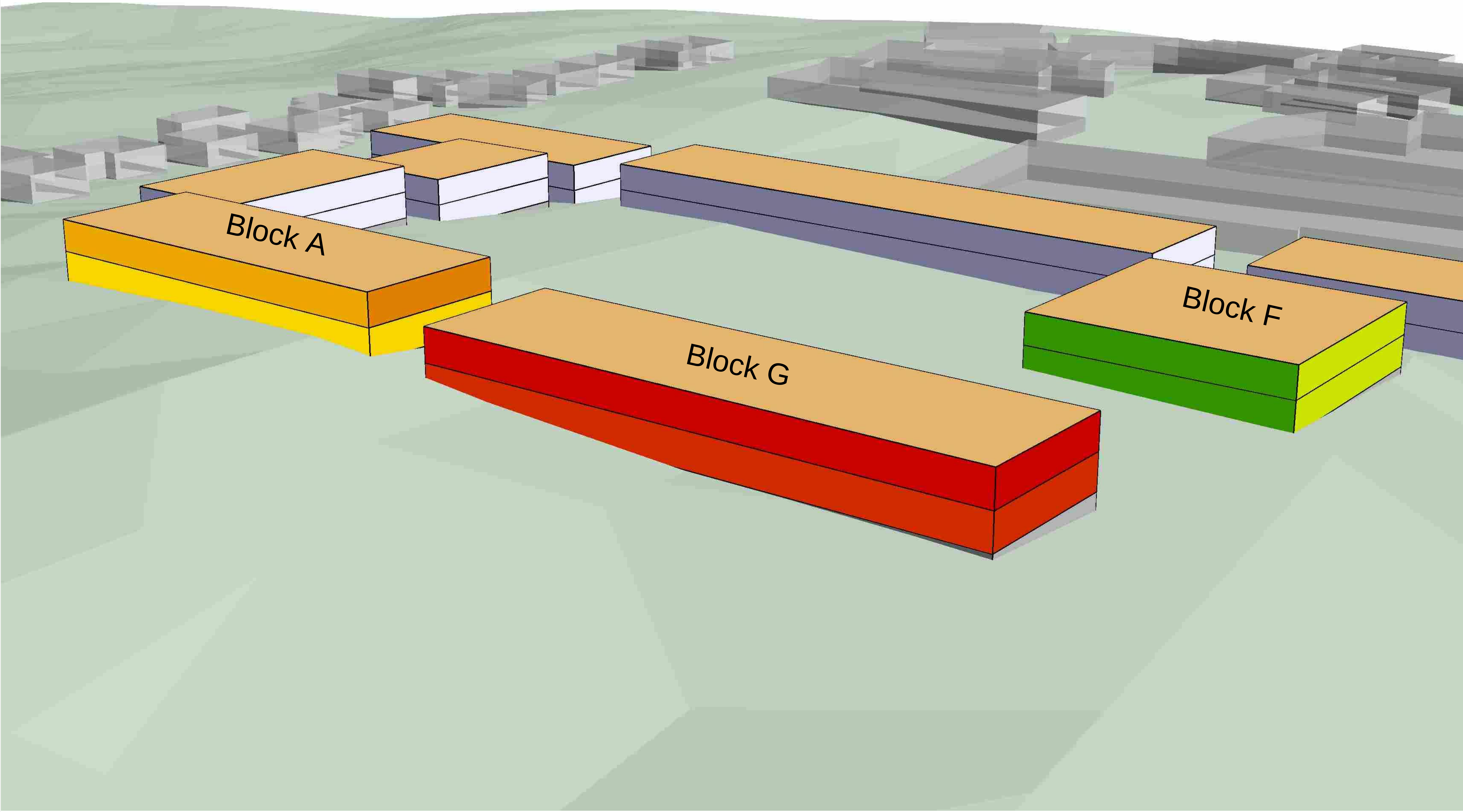


E-LAB CONSULTING

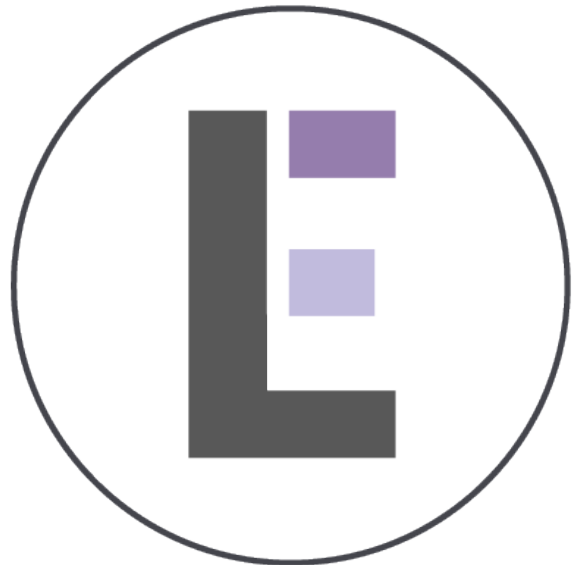
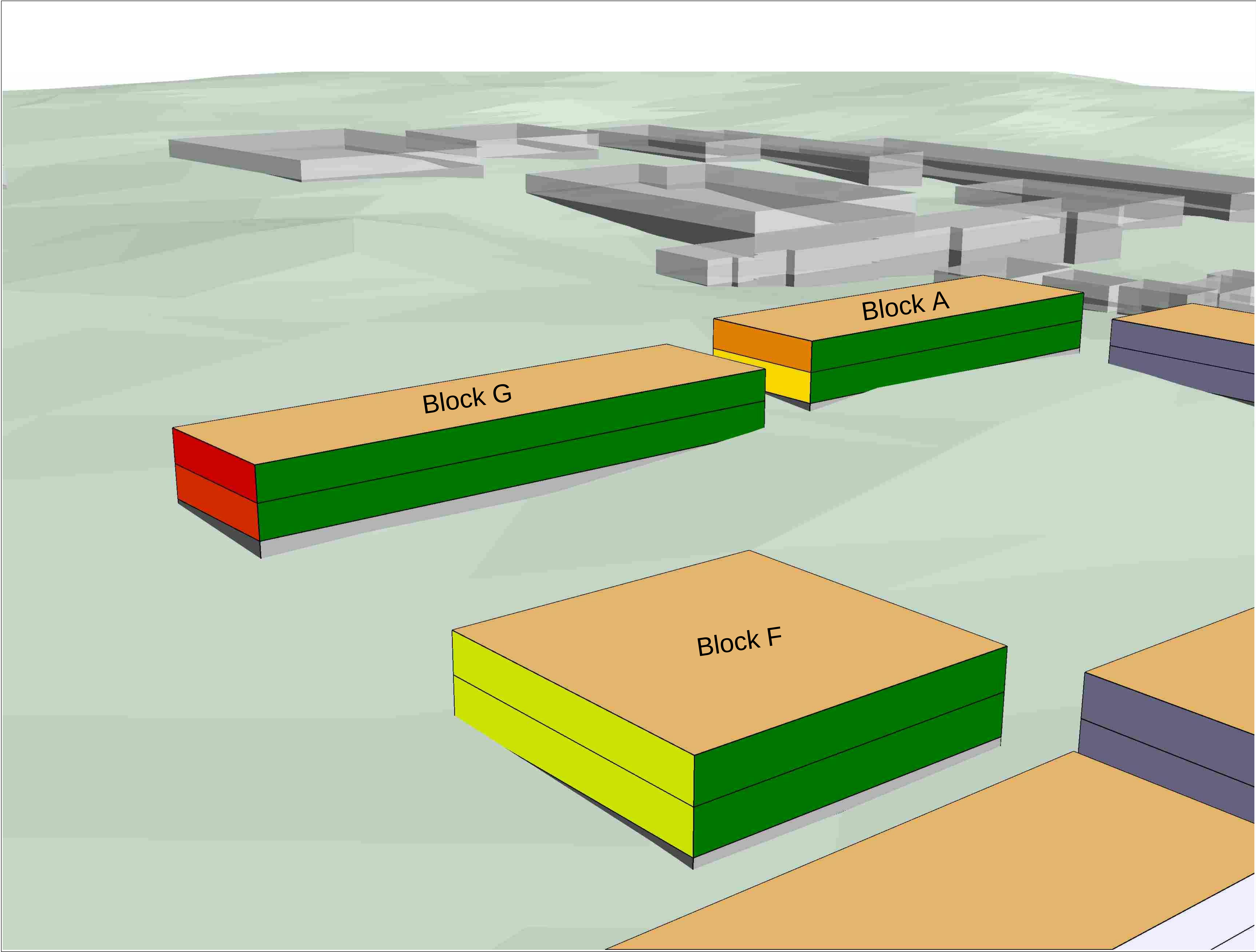
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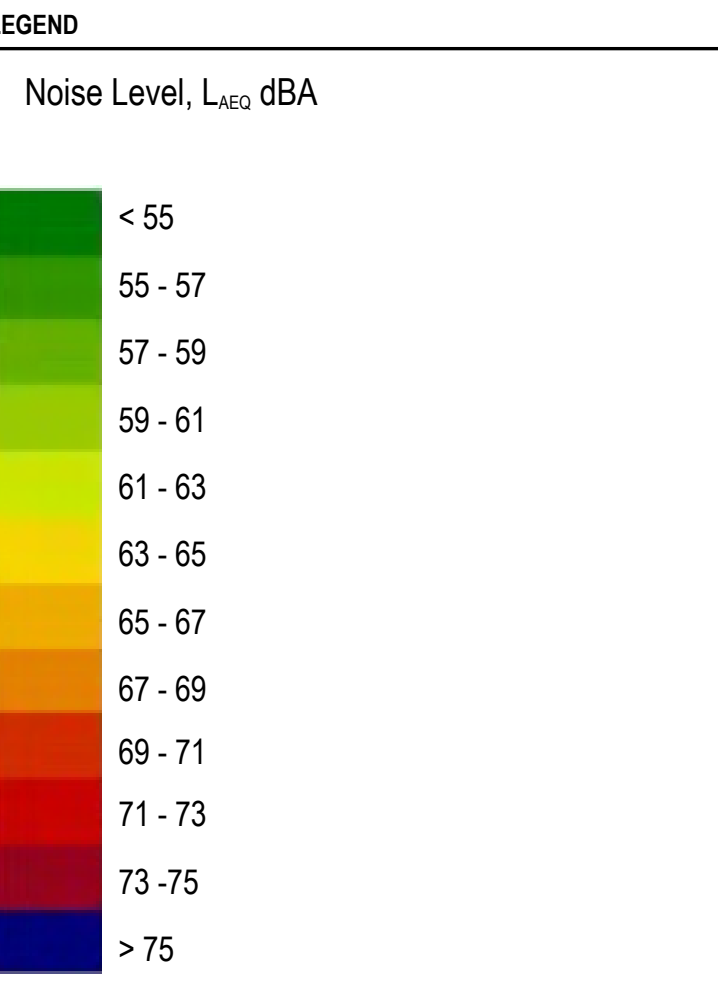


PROJECT	THE FOREST HIGH SCHOOL
PROJECT NO.	P00757
ARCHITECT	ARCHITECTUS
CLIENT	ADCO
SCALE	NTS
STATUS	ISSUE FOR CNMP
DRAWING	FACADE NOISE MAP CONSTRUCTION WORKS
DISCIPLINE	ACOUSTICS
DRAWING NUMBER	AC-DWG-100-01-02
REVISION	001



E-LAB CONSULTING

ISSUE	DATE	STATUS
1	04/04/2025	CNMP

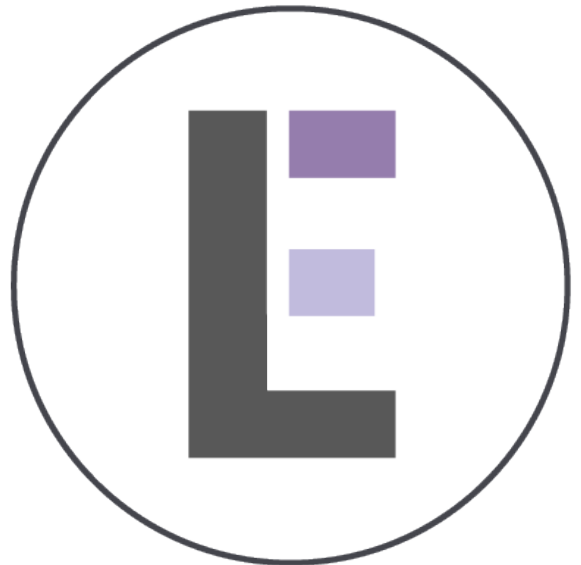
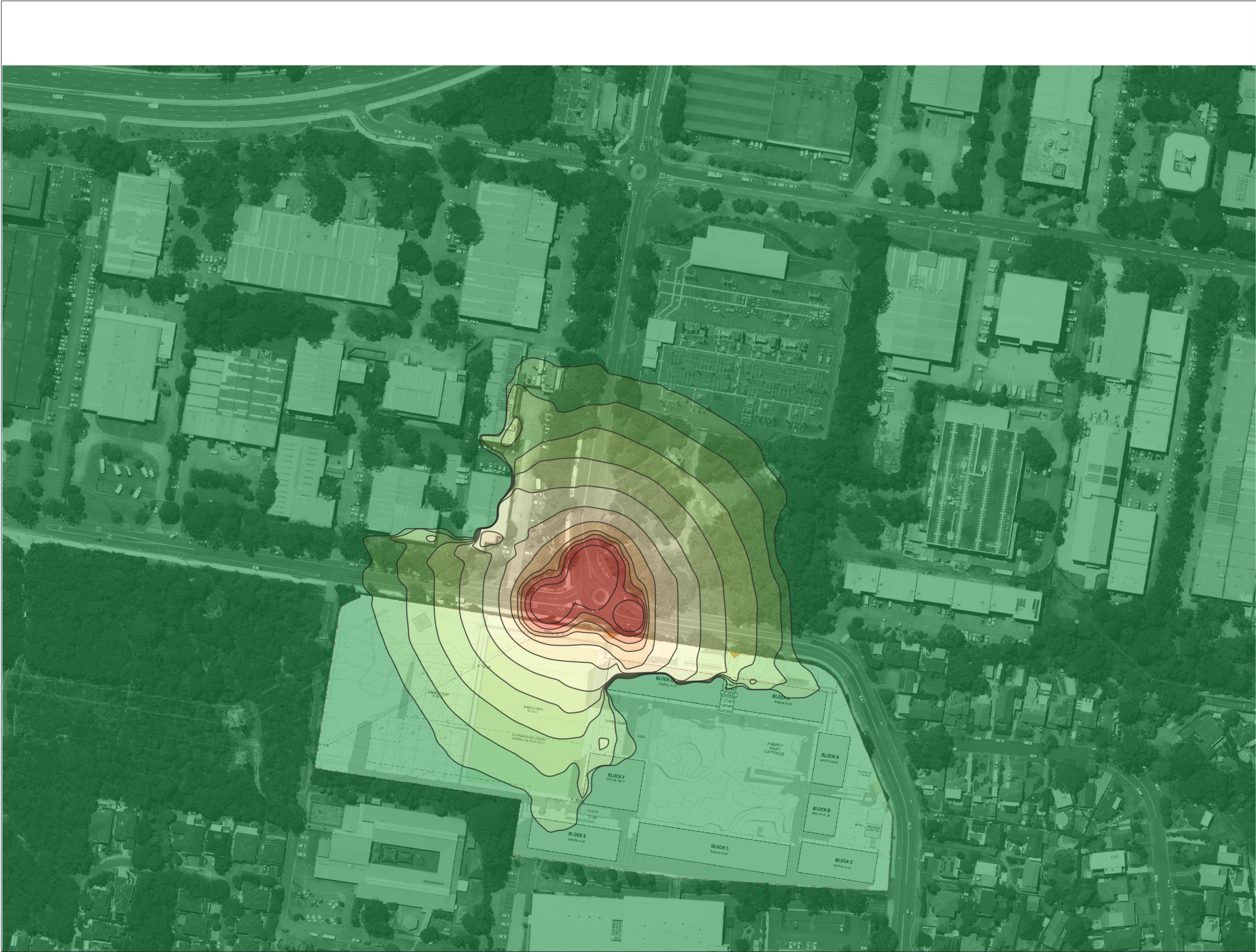


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PROJECT	THE FOREST HIGH SCHOOL
PROJECT NO.	P00757
ARCHITECT	ARCHITECTUS
CLIENT	ADCO
SCALE	NTS
STATUS	ISSUE FOR CNMP
DRAWING	FACADE NOISE MAP
	CONSTRUCTION WORKS
DISCIPLINE	ACOUSTICS
DRAWING NUMBER	AC-DWG-100-01-02
REVISION	001

Appendix B **Construction Noise Contour Maps**





E-LAB CONSULTING

ISSUE	DATE	STATUS
1	04/04/2025	CNMP
2	16/04/2025	CNMP

LEGEND	
Noise Level, L_{Aeq} dBA	
< 55	
55 - 57	
57 - 59	
59 - 61	
61 - 63	
63 - 65	
65 - 67	
67 - 69	
69 - 71	
71 - 73	
73 - 75	
> 75	

NOTES

PROJECT
THE FOREST HIGH SCHOOL

PROJECT NO.
P00757

ARCHITECT
ARCHITECTUS

CLIENT
ADCO

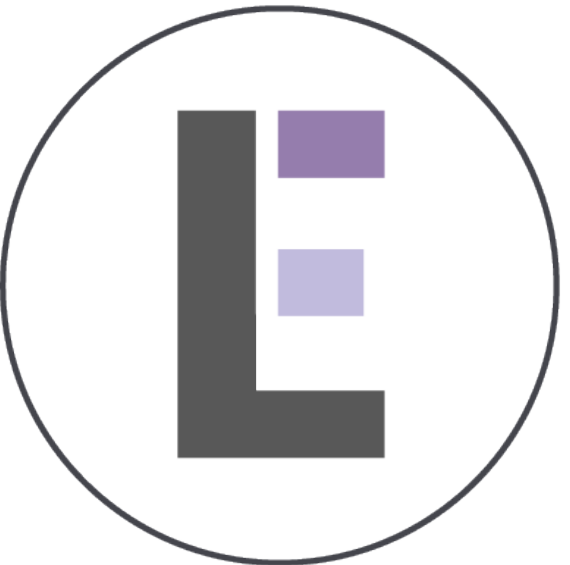
SCALE
NTS

STATUS
ISSUE FOR CNMP

DRAWING
NOISE CONTOUR MAP
MINOR DEMOLITION WORKS

DISCIPLINE
ACOUSTICS

DRAWING NUMBER AC-DWG-500-02-01	REVISION 002
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E-LAB CONSULTING

ISSUE	DATE	STATUS
1	04/04/2025	CNMP
2	16/04/2025	CNMP

LEGEND	
Noise Level, L _{eq} dBA	
< 55	Green
55 - 57	Light Green
57 - 59	Yellow-Green
59 - 61	Yellow
61 - 63	Orange-Yellow
63 - 65	Orange
65 - 67	Light Orange
67 - 69	Orange
69 - 71	Red-Orange
71 - 73	Red
73 - 75	Dark Red
> 75	Dark Red

NOTES

PROJECT
THE FOREST HIGH SCHOOL

PROJECT NO.
P00757

ARCHITECT
ARCHITECTUS

CLIENT
ADCO

SCALE
NTS

STATUS
ISSUE FOR CNMP

DRAWING
NOISE CONTOUR MAP
CONSTRUCTION WORKS

DISCIPLINE
ACOUSTICS

DRAWING NUMBER
AC-DWG-500-02-02

REVISION
002

