

PLANS AND DOCUMENTS
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DEVELOPMENT APPROVAL

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acousticworks)))

Proposed Residential Development
Site 18B 258 Macarthur Avenue
Hamilton

ACOUSTIC REPORT



Client:

Silverstone Developments
ATTN: Wade Fraser

Reference:

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Document Information

Contact Details

Acoustic Works
Unit 17/10 Benson Street
Toowong QLD 4066
(07) 3393 2222
ABN: 56 157 965 056

PO Box 69
Toowong DC
QLD 4066

Greg Pearce
Email: gpearce@acousticworks.com.au

Mark Enersen
Email: menersen@acousticworks.com.au

Report Register

Date	Revision	Author	Reviewer	Manager
24/04/2025	R01A	David Dadd	Greg Pearce	GP
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1. Introduction

This report is in response to a request by Silverstone Developments for an aircraft and environmental noise assessment of a proposed residential development to be located at Site 18B, 258 Macarthur Avenue, Hamilton. To facilitate the assessment, noise monitoring was conducted to determine aircraft and ambient noise levels in the locality. Based on the outcomes of the assessment, recommendations for management strategies and acoustic treatments are specified.

2. Site Description

2.1 Site Location

The site is described by the following:

258 Macarthur Avenue, Hamilton
Lot 181 on SP348282

Refer to Figure 1 for site location.

Figure 1: Site Location (Not to Scale)



A comprehensive site survey was conducted on the 18th of August 2024 and identified the following:

- a) The development site is currently vacant.
- b) The surrounding area consists primarily of residential, warehousing and industrial land uses.
- c) Residential land uses are located across Macarthur Avenue to the north and across Angora Road to the southeast.

2.2 Proposal

- Site area: 6,623 m²
- Total apartments: 275 dwellings as follows:
 - 39 × 1-bedroom apartments.
 - 80 × 2-bedroom apartments.
 - 156 × 3-bedroom apartments.
- Basement:
 - Car parking and service areas.
- Ground level:
 - Residential units, retail uses, car parking, lobby, servicing and amenity areas.
- Level 1:
 - Communal amenities including cinema, residential units and car parking.
- Level 2:
 - Residential units, quiet area, pool area, 25m lap pool, plunge pools, sauna and spa.
- Level 3:
 - Podium roof and residential units.
- Levels 4 to 12:
 - Residential units.
- Level 13:
 - Building 1 - Residential units.
 - Building 2 rooftop – Outdoor BBQ area, fitness turf, private lounge, private dining, co-working space and fitness studio.
- Levels 14 to 16:
 - Building 1 residential units.
- Building 1 rooftop:
 - Outdoor BBQ area, fitness turf, private lounge, private dining, co-working space and fitness studio.
- Car parking: 470 spaces.
- Bicycle parking: 276 spaces.

Refer to the Appendices for development plans.

2.3 Acoustic Environment

The surrounding area is primarily affected local road traffic noise and aircraft noise associated with Brisbane Airport.

3. Equipment

The following equipment was used to record noise levels:

- Rion NL42 Environmental Noise Monitor.
- Norsonic NOR140 Sound Level Meter.
- BSWA Technology Co. Ltd Sound Calibrator.

The Rion NL42 Environmental Noise Monitors hold current NATA Laboratory Certification and were field calibrated before and after the monitoring period, with no significant drift from the reference signal recorded.

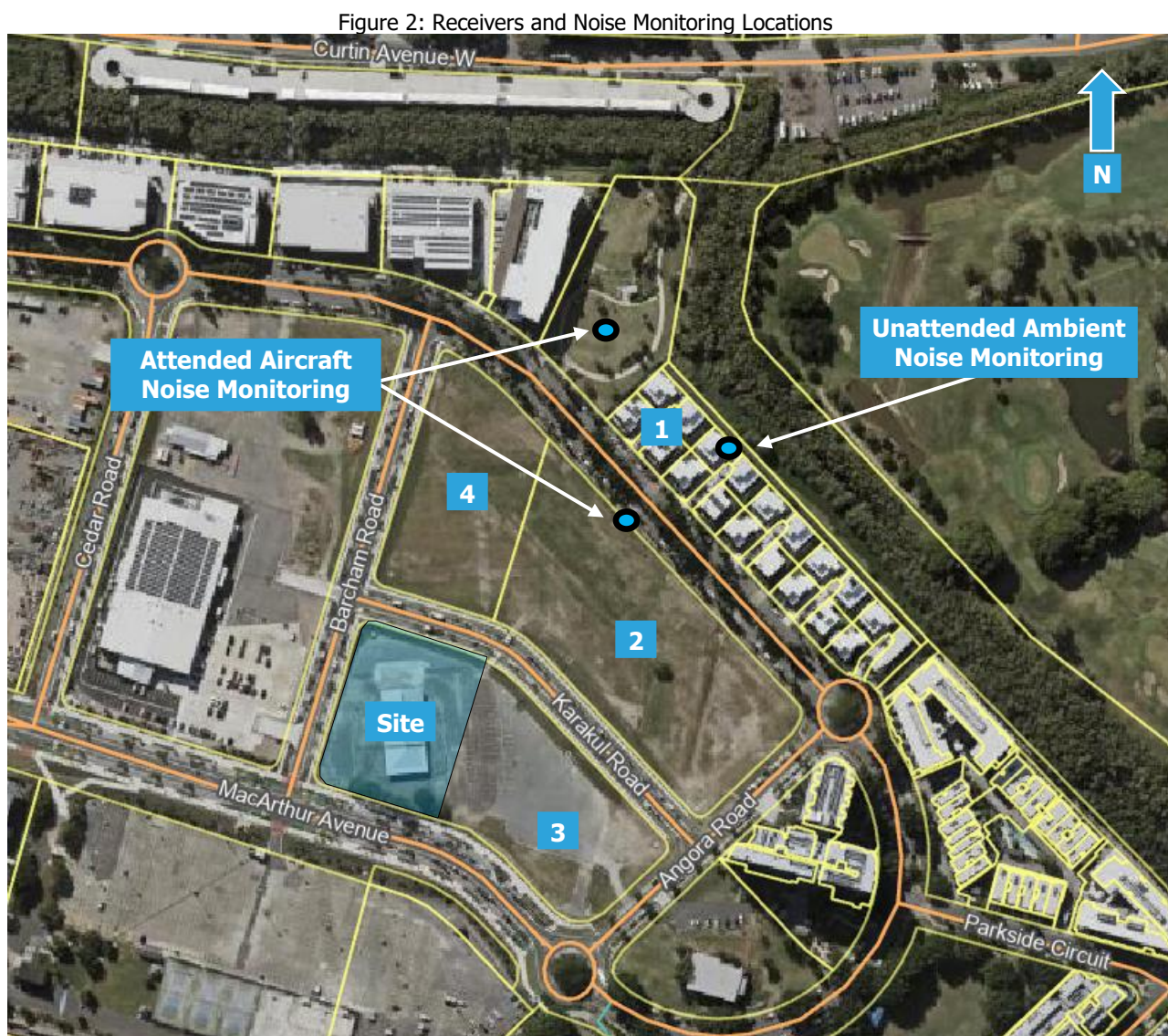
4. Receivers, Industrial and Noise Monitoring Locations

4.1 Receiver Locations

The nearest sensitive receiver locations were identified as follows:

1. Two storey residential dwellings are located to the northeast of the site at 341 Macarthur Avenue (emerging community zone).
2. Located to the east at 280 Macarthur Avenue is a proposed aged care facility (emerging community zone).
3. A residential development is currently under development to the east at 280 Macarthur Avenue (emerging community zone).
4. Located to the north at 280 Macarthur Avenue is a proposed residential development (emerging community zone).

These locations were chosen as being representative of the nearest sensitive receivers to the proposed development. Refer to Figure 2 for these locations.



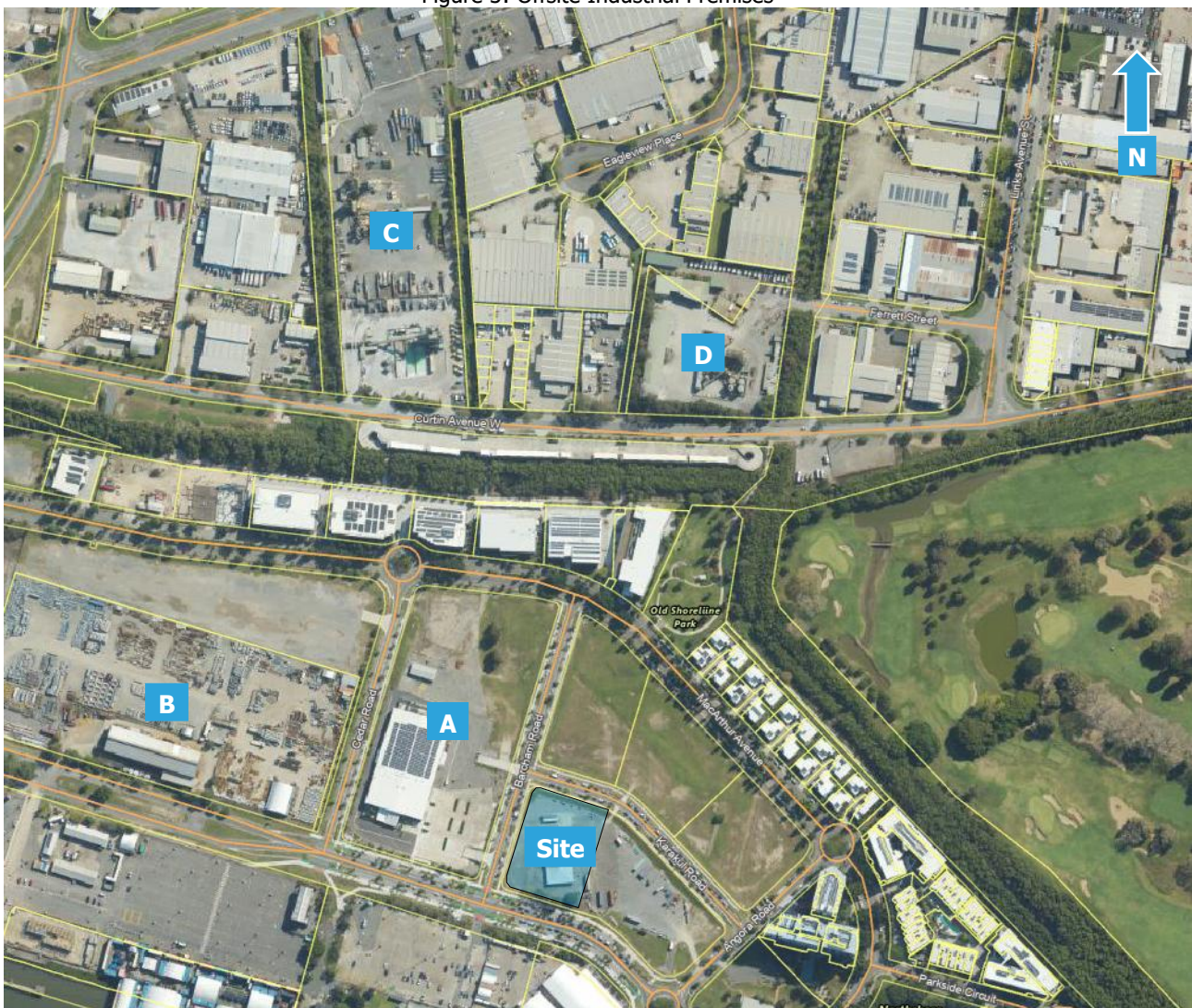
4.2 Industrial Land Use Locations

Industrial activities occurring within 500m of the site have been considered. The nearest offsite premises with the potential to adversely impact the acoustic amenity of the proposed development were identified as follows:

- A. Located to the west of the site at 240 Macarthur Avenue is 'Vaxxas Biomedical Facility'.
- B. 'C.P. Plating' is located at 222a Macarthur Avenue to the west of the site.
- C. Located to the northwest of the site at 208 Curtin Avenue and 111 Cullen Avenue is 'Boral Concrete' and 'Boral Asphalt' respectively.
- D. 'Brisbane Cityworks' is located to the north of the site at 260 Curtin Avenue

These locations were identified to have the potential to adversely impact proposed onsite noise sensitive receivers.

Figure 3: Offsite Industrial Premises



4.3 Unattended Ambient Noise Monitoring

A Rion NL42 environmental noise monitor was placed in the rear yard of 6/341 Macarthur Avenue to measure ambient noise levels. This location was selected as it was considered being representative of the nearest residential receivers. The monitor was located in a free field position with the microphone approximately 1.4 metres above ground surface level. The noise monitor was set to record noise levels between the 10th and 17th of July 2024.

The environmental noise monitor was set to record noise levels in "A" Weighting, Fast response using 15 minute statistical intervals. Ambient noise monitoring was conducted generally in accordance with Australian Standard AS1055:2018 *Acoustics – Description and measurement of environmental noise*.

Refer to Figure 2 for noise monitoring location.

4.4 Attended Aircraft Noise Measurements

Aircraft noise levels were measured in the immediate vicinity of the site at 351 Macarthur Avenue and at the northern site boundary at 330 Macarthur Avenue in free field locations. The attended noise monitoring was conducted on the 10th and 18th of July 2024.

The sound level meter was set to record noise levels in octave band, linear weighting, slow response, and broadband "A" weighting, slow response. The typical duration for each measurement was between 20 and 30 seconds. Aircraft noise measurements were conducted in accordance with Australian Standard AS2021:2015.

Refer to Figure 2 for the measurement locations.

4.5 Attended Offsite Industrial Noise Measurements

Acoustic Works conducted attended measurements of industrial land uses in the vicinity of the site on Tuesday the 11th of February 2025 between the hours of 2.30pm and 4:30pm to assess noise impacts from the surrounding industrial land uses on the proposed development site. The sound level meter was set to record noise levels in "A" Weighting, Fast response mode.

Refer to Figure 3 for the location of industrial land uses.

5. Measured Noise Levels

The following tables present the measured background noise levels from the unattended noise survey and meteorological conditions.

5.1 Meteorological Conditions

Meteorological observations during the unattended noise monitoring survey were obtained from the Bureau of Meteorology website (<http://www.bom.gov.au/climate/data>), shown in Table 1 below.

Table 1: Meteorological Conditions – Brisbane

Day	Date	Rainfall (mm)	Wind			
			9am		3pm	
			Speed (km/h)	Direction	Speed (km/h)	Direction
Wednesday	10/07/2024	0	6	WSW	7	W
Thursday	11/07/2024	0	7	WSW	4	ESE
Friday	12/07/2024	0	4	SSW	13	W
Saturday	13/07/2024	0	7	W	17	WSW
Sunday	14/07/2024	0	11	WSW	13	WNW
Monday	15/07/2024	0	4	SW	13	W
Tuesday	16/07/2024	0	9	WSW	20	W
Wednesday	17/07/2024	0	17	W	17	W

5.2 Ambient Noise Levels

The ambient noise levels measured at the monitoring location are as follows:

Table 2: Measured Ambient Noise Levels – All Time Periods

Day	Date	L90 dB(A) (Rating Background Level)			L _{Aeq} 9hr
		Day	Evening	Night	Night
Wednesday	10/07/2024	38	44	40	-
Thursday	11/07/2024	41	42	38	51
Friday	12/07/2024	38	43	37	51
Saturday	13/07/2024	38	38	33	49
Sunday	14/07/2024	35	39	31	49
Monday	15/07/2024	40	39	34	50
Tuesday	16/07/2024	43	40	41	53
Wednesday	17/07/2024	44	-	39	-
Overall value		40	40	36	50

Refer to the appendix for a graphical representation of the measured noise levels.

6. Noise Criteria

6.1 Brisbane City Council (BCC) - Environmental Noise Criteria

To ensure a reasonable acoustic amenity is maintained, Brisbane City Council requires environmental noise be assessed in accordance with Noise Impact Assessment PSP (2014). To accurately assess environmental noise, the noise must first be classified as to the type and its duration. Sections 6.1.1 to 6.1.4 breaks down the assessment requirements in relation to the project and considers the criteria in relation to the type of noise being assessed.

6.1.1 Intrusive Noise and Acoustic Amenity

To ensure a reasonable amenity is maintained, the following criteria shall be applied for the assessment of onsite activities to sensitive receivers. The noise criteria as applied by Brisbane City Council in accordance with the Multiple Dwelling Code of the Brisbane City Plan 2014 are as follows:

Table 3: Noise (Planning) Criteria

Criteria Location	Intrusive Noise Criteria	Acoustic Amenity Criteria		
	Day, evening and night $L_{Aeq,adj,T}$ are not greater than the RBL plus the value in this column for the relevant criteria location, where T equals: - Day - 11hr - Evening - 4hr - Night - 9hr	Day, evening and night $L_{Aeq,adj,T}$ are not greater than the values in the column below for the relevant criteria location, where T equals: - Day - 11hr - Evening - 4hr - Night - 9hr		
		Day	Evening	Night
Emerging community zone boundary	5 dB(A)	55 dB(A)	50 dB(A)	45 dB(A)

Further reference is made to PO21 and AO21 of the Brisbane City Council City Plan 2014 Multiple Dwelling Code.

Table 4: Noise (Planning) Criteria – Multiple Dwelling Code

Performance Outcome	Acceptable Outcome
PO21 Development in a zone in the centre zones category or Mixed use zone must: - be located, designed and constructed to protect bedrooms and other habitable rooms from exposure to noise arising from non-residential activities outside the building; - be designed and constructed to achieve a minimum reduction in sound pressure level between the exterior of the building and the bedrooms or indoor primary living areas of 30dBA. Note – A noise impact assessment report prepared in accordance with the Noise impact assessment planning scheme policy can assist in demonstrating achievement of this performance outcome. Note – Site-specific criteria will be identified in a neighbourhood plan for sites within a Special Entertainment Precinct or within the Transport noise corridor overlay.	AO21 Development in a zone in the centre zones category or the Mixed use zone has a minimum acoustic performance of: - Rw 35 for glazing (windows and doors) where total area of glazing is greater than 1.8m². - Rw 32 for glazing (windows and doors) where total area of glazing is less than or equal to 1.8m².

The noise criteria applicable to this development are as follows:

Table 5: Intrusive Noise Criteria

Time Period	Measured RBL $L_{A90,T}$	Intrusive Criteria dB(A) (RBL $L_{A90} + 5$ dB(A))
Day 7am – 6pm	40	45
Evening 6pm – 10pm	40	45
Night 10pm – 7am	36	41

Table 6: Acoustic Amenity Criteria

Time Period	Acoustic Amenity Criteria ($L_{Aeq,adj,T}$ dB(A))
Day 7am – 6pm	55
Evening 6pm – 10pm	50
Night 10pm – 7am	45

6.1.2 Night-Time Noise

The night-time noise criteria as applied by Brisbane City Council in accordance the Brisbane City Plan 2014 are as follows:

Table 7: Night-time Noise Criteria

Criteria Location	Where the existing $L_{Aeq,9hr\ night}$ at the criteria location is:	Average of the highest 15 single L_{Amax} events over a given night (10pm-7pm) period is not greater than the following values at the relevant criteria location	The absolute highest single L_{Amax} event over a given night (10pm-7am) period is not greater than the following values at the relevant criteria location
Emerging community zone boundary	< 45dB(A)	50dB(A)	55dB(A)
	45 to 60dB(A)	$L_{eq,9hr\ night} + 5$ dB(A)	$L_{eq,9hr\ night} + 10$ dB(A)
	> 60dB(A)	65dB(A)	70dB(A)

Based on the measured noise levels in Section 5 the night-time noise criteria is as follows:

Table 8: Applicable Night-time Noise Criteria

Criteria Location	Measured $L_{Aeq,9h\ night}$ dB(A)	Criteria Average L_{Amax} dB(A)	Criteria Highest L_{Amax} dB(A)
Emerging community zone boundary	50	55	60

6.1.3 Mechanical Plant

Development that includes mechanical plant (including air-conditioning plant, heat pumps and swimming pool pumps) ensures it is located, designed and attenuated to achieve the following criteria:

$L_{Aeq,adj,T}$ emitted from mechanical plant is not greater than the rating background level plus 3 at a sensitive use not associated with the development.

Where T is:

- (7am to 6pm): 11hr
- (6pm to 10pm): 4hr
- (10pm to 7am): 9hr

Where $L_{Aeq,adj,T}$ is the A-weighted equivalent continuous sound pressure level during measurement time T , adjusted for tonal and impulsive noise characteristics, determined in accordance with the methodology described in the Noise impact assessment planning scheme policy.

The noise criteria applicable to this development are as follows:

Table 9: Applicable Noise Criteria

Time Period	Criteria dB(A) (RBL L_{90} + 3 dB(A))
Day 7am – 6pm	43
Evening 6pm – 10pm	43
Night 10pm – 7am	39

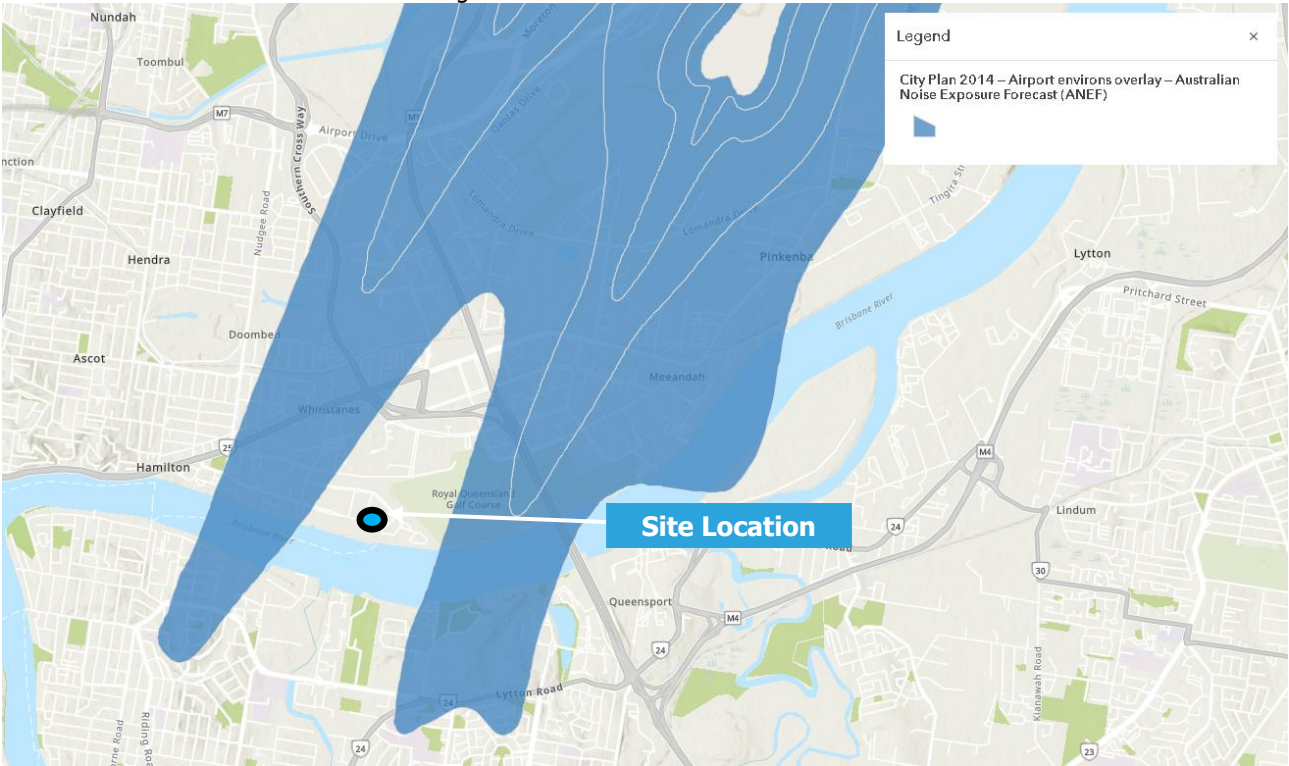
6.2 Aircraft Noise

As per AS2021:2015 "Acoustics - Aircraft Noise Intrusion - Building Siting and Construction for the Assessment of Aircraft Noise", the actual location of the 20 ANEF contour is difficult to define accurately. As a result, aircraft noise may still be assessed for building sites outside but near to the 20 ANEF contour.

The requirement for assessment of aircraft noise comes under the Brisbane City Plan 2014, in accordance with AS2021:2015 "Acoustics - Aircraft Noise Intrusion - Building Siting and Construction for the Assessment of Aircraft Noise".

As seen in Figure 4, the site is located outside the ANEF 20-25 noise contour for Brisbane Airport however, to ensure the proposed development isn't adversely impacted, aircraft noise was assessed utilising attended aircraft noise measurements.

Figure 4: Site Location – ANEF Contour



The indoor design sound levels for residential developments are contained in Table 3.3 of AS2021:2015. The indoor design sound levels are as follows:

Table 10: Aircraft Noise Internal Criteria

Use	Activity of Internal Space	Indoor Design Sound Level L_{Amax} 'S' Time Weighting
Multiple Dwelling	Sleeping areas	50dB(A)
	Other habitable rooms	55dB(A)
	Bathrooms, toilets, laundries	60 dB(A)

7. Environmental Assessment

7.1 Onsite Activities

Noise associated with the development was assessed based on previous measurements of similar activities. The calculations assume that the nominated activities are located at the closest representative point to the development site. Any relevant shielding, building transmission loss or recommended acoustic screens are taken into account for these activities.

7.1.1 Intrusive Noise and Acoustic Amenity Incl. Night-time L_{Amax}

The noise source levels and predicted impacts at the nearest receiver locations are shown in Table 11 as follows. L_{Aeq} results are not shown where the calculated total is less than 0dBA.

Table 11: Average Noise Levels from Site Activities

Receiver	Receivers																									LAMax Compliance				
	1. 341 Macarthur Avenue (NE) 2. 280 Macarthur Avenue (E) 3. 280 Macarthur Avenue (E) 4.280 Macarthur Avenue (N)																													
	Source @1m dB(A)	Correction dB(A)*	Corrected dB(A)	Number of events day	Number of events eve	Number of events night	Duration per event	Distance (m)	No Barrier (height (m))	Barrier screening dB	Building TL or shield dB	Room Correction dB	Dist atten. @-6dB/dd	L _{Aeq} adj, T ext. dB(A) Day	L _{Aeq} adj, T ext. dB(A) Eve	L _{Aeq} adj, T ext. dB(A) Night	Absolute L _{Amax} dBA	Intrusive Compliance L _{Aeq}			Amenity Compliance L _{Aeq}									
Description																	Day	Eve	Night	Day	Eve	Night								
	Criteria	75	2	77	200	100	50	2	159		-22		-44.028				20	Yes	Yes	Yes	Yes	Yes	Yes	Yes	60					
1	Car door closure	75	2	77	200	100	50	2	159		-22		-44.028				20	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
	Car passby	69		69	200	100	50	15	159		-22		-44.028				12	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
	Car start	74	2	76	200	100	50	2	159		-22		-44.028				19	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
	Gym activities	80		80	11	4	9	3600	168		-24		-44.506	11	11	11	20	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
	Recreation area - Include pool	78		78	11	4		3600	188		-22		-45.483	11	11	20	Yes	Yes	n/a	Yes	Yes	n/a	Yes	Yes	Yes					
	Outdoor dining group (Rooftop terrace/bar)	75		75	11	4		3600	204				-46	29	29	38	Yes	Yes	n/a	Yes	Yes	n/a	Yes	Yes	Yes					
	Waste collection	94	2	96	1			240	210		-22		-46.444	5		37	Yes	n/a	n/a	Yes	Yes	Yes	Yes	Yes	Yes					
	Deliveries	85	2	87	1			60	183		-22		-45.249			29	Yes	n/a	n/a	Yes	n/a	n/a	Yes	Yes	Yes					
	Retail - Internal Activities	70		70	11	4	9	3600	206		-10		-46.277	14	14	14	23	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
	Cinema	80		80	11	4	9	3600	201		-24		-46.064	10	10	10	19	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Total																	29	29	17	38	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	Criteria	75	2	77	200	100	50	2	49		-22		-33.804	1	3		30	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
	Car door closure	75	2	77	200	100	50	2	49		-22		-33.804	1	3		30	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
	Car passby	69		69	200	100	50	15	49		-22		-33.804					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
	Car start	74	2	76	200	100	50	2	49		-22		-33.804		2	29	31	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
	Gym activities	80		80	11	4	9	3600	53		-24		-34.486	22	22	22	31	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
	Recreation area - Include pool	78		78	11	4		3600	73		-22		-37.266	19	19	28	Yes	Yes	n/a	Yes	Yes	n/a	Yes	Yes	Yes					
	Outdoor dining group (Rooftop terrace/bar)	75		75	11	4		3600	95				-40	35	35	44	Yes	Yes	n/a	Yes	Yes	n/a	Yes	Yes	Yes					
	Waste collection	94	2	96	1			240	91		-22		-39	13		44	Yes	n/a	n/a	Yes	Yes	Yes	Yes	Yes	Yes					
	Deliveries	85	2	87	1			60	79		-22		-38			36	Yes	n/a	n/a	Yes	n/a	n/a	Yes	Yes	Yes					
	Retail - Internal Activities	70		70	11	4	9	3600	93		-10		-39	21	21	21	30	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Cinema	80		80	11	4	9	3600	91		-24		-39	17	17	17	26	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes						
Total																	36	36	22	44	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	Criteria	75	2	77	200	100	50	2	38		-22		-31.596	3	5		32	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
	Car door closure	75	2	77	200	100	50	2	38		-22		-31.596	3	5		32	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
	Car passby	69		69	200	100	50	15	38		-22		-31.596					Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
	Car start	74	2	76	200	100	50	2	38		-22		-31.596	2	4		31	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
	Gym activities	80		80	11	4	9	3600	41		-24		-32.256	24	24	24	33	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
	Recreation area - Include pool	78		78	11	4		3600	61		-22		-35.707	20	20	29	Yes	Yes	n/a	Yes	Yes	n/a	Yes	Yes	Yes					
	Outdoor dining group (Rooftop terrace/bar)	75		75	11	4		3600	42				-32	43	43	52	Yes	Yes	n/a	Yes	Yes	n/a	Yes	Yes	Yes					
	Waste collection	94		94	1			240	63		-22		-35.987					Yes	n/a	n/a	Yes	Yes	Yes	Yes	Yes					
	Deliveries	85	2	87	1			60	75		-22		-37.501				36	Yes	n/a	n/a	Yes	n/a	n/a	Yes	Yes					
	Retail - Internal Activities	70		70	11	4	9	3600	27		-10		-28.627	31	31	31	40	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Cinema	80		80	11	4	9	3600	38		-24		-31.596	24	24	24	33	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes						
Total																	43	43	33	52	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	Criteria	75	2	77	200	100	50	2	39		-22		-32	3	4		32	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
	Car door closure	75	2	77	200	100	50	2	39		-22		-32	3	4		32	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
	Car passby	69		69	200	100	50	15	39		-22		-32	4	5		24	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
	Car start	74	2	76	200	100	50	2	39		-22		-32	2	4		31	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
	Gym activities	80		80	11	4	9	3600	43		-24		-32.669	23	23	23	32	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
	Recreation area - Include pool	78		78	11	4		3600	63		-22		-35.987	20	20	29	Yes	Yes	n/a	Yes	Yes	Yes	Yes	Yes	Yes					
	Outdoor dining group (Rooftop terrace/bar)	75		75	11	4		3600	91				-39.181	36	36	45	Yes	Yes	n/a	Yes	Yes	Yes	Yes	Yes	Yes					
	Waste collection	94	2	96	1			240	78		-22		-37.842	14		45	Yes	n/a	n/a	Yes	n/a	Yes	Yes	Yes	Yes					
	Deliveries	85	2	87	1			60	44		-22		-32.869	4		41	Yes	n/a	n/a	Yes	n/a	Yes	Yes	Yes	Yes					
	Retail - Internal Activities	70		70	11	4	9	3600	102		-20		-40.172	10	10	10	19	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Cinema	80		80	11	4	9	3600	88		-24		-38.89	17	17	17	26	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes						
Total																	36	36	25	45	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

*Correction due to tonality and impulsiveness as per AS 1055:2018.

Compliance is predicted for all onsite activities on the condition the recommendations in Section 9 are implemented.

7.2 Offsite Industrial Activities

Table 12 presents the measured noise levels from offsite industrial land uses with locations specified in Figure 3. It is noted that, during multiple site visits, all remaining industrial land uses were inaudible at the nearest site boundary.

Table 12: Offsite Industrial Noise Levels

Attended Noise Monitoring Location	Activity	Measured L_{Aeq} Noise Levels	Measured L_{AMAX} Noise Levels	Measurement Distance from Source (m)	Measured L_{Aeq} Corrected to 1m	Measured L_{AMAX} Corrected to 1m
C.P. Plating (eastern boundary)	Loading/unloading trucks with forklift	54.4	68.5	51	88.6	102.7
Vaxxas (eastern boundary)	Mechanical plant	55.1	64.1	79	93.1	102.1
Boral Concrete and Boral Asphalt (southern boundary)	Trucks entering and existing, conveyor belt, silo and car movements	66.9	81.3	29	96.1	110.5
Brisbane Cityworks (southern boundary)	Trucks entering and existing	66.8	86.7	10	86.8	106.7

Note measurements were attempted onsite but were highly affected by aircraft activities associated with Brisbane Airport, therefore the source measurements were used to predicted noise impacts.

7.2.1 Intrusive Noise and Acoustic Amenity Incl. Night-time L_{Amax}

The industrial noise source levels and predicted impacts at the nearest onsite unit are shown in Table 13 as follows. The maximum noise source levels were determined based on onsite attended measurements specified in Table 12.

Table 13: Noise Levels from Offsite Industrial Activities

Receiver	Source																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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*Correction due to tonality and impulsiveness as per AS 1055:2018.

Compliance is predicted at the proposed units for all offsite industrial activities. This is on the condition the recommendations in Section 9 are implemented. It is noted that façade treatments required for aircraft noise are predicted to be sufficient for offsite activity noise associated with nearby industrial land uses if any potential exceedance occur within the proposed development.

No onsite activity (other than mechanical plant) was operational at 'Vaxxas' (refer to Figure 3 for location) during the site visits. As a result, maximum noise source levels were determined based on previous assessments of similar activities.

Table 14: Noise Levels from Offsite Industrial Activities (Vaxxas)

Source	Source																																						
	1. Vaxxas Biomedical Facility																																						
	Description	Source @31m dB(A)	Correction dB(A) *	Corrected dB(A)	Number of events day	Number of events eve	Number of events night	Duration per event	Distance (m)	No Barrier (height (m))	Barrier screening dB	Building TL or shield dB	Room Correction dB	Dist atten. @-6dB/dd	L _{Aeq} adj. T ext. dB(A) Day	L _{Aeq} adj. T ext. dB(A) Eve	L _{Aeq} adj. T ext. dB(A) Night	Absolute L _{Amax} dBA	Intrusive Compliance LAeq			Amenity Compliance LAeq			LAMax Compliance														
		Day	Eve	Night	Day	Eve	Night	Night Max																															
1	Criteria																		45	45	41	55	50	45	60														
	Car door closure	75	2	77	200	100	50	2	59					-35.417	22	23	16	51	Yes	Yes	Yes	Yes	Yes	Yes	Yes														
	Car passby	69		69	200	100	50	15	59					-35.417	22	24	17	43	Yes	Yes	Yes	Yes	Yes	Yes	Yes														
	Car start	74	2	76	200	100	50	2	59					-35.417	21	22	15	50	Yes	Yes	Yes	Yes	Yes	Yes	Yes														
	Truck manoeuvring	86		86	50	25	10	30	75					-37.501	34	36	28	57	Yes	Yes	Yes	Yes	Yes	Yes	Yes														
	Truck reverse	92	2	94	50	25	10	30	75					-37.501	42	44	36	65	Yes	Yes	Yes	Yes	Yes	Yes	No														
	Truck passby	82		82	50	25	10	30	75					-38	30	31	24	53	Yes	Yes	Yes	Yes	Yes	Yes	Yes														
	Forklift loading/unloading	82		82	50	25	10	240	75					-37.501	39	41	33	53	Yes	Yes	Yes	Yes	Yes	Yes	Yes														
	Forklift reverse	89	2	91	50	25	10	30	75					-37.501	39	41	33	62	Yes	Yes	Yes	Yes	Yes	Yes	No														
	Deliveries	85	2	87	1			60	75					-37.501	21			58	Yes	n/a	n/a	Yes	Yes	Yes	Yes														
	Waste collection (collection of industrial waste bin)	93		93	1			40	75					-37.501	26			64	Yes	n/a	n/a	Yes	Yes	Yes	No														
	Total														46	47	40	65	No	No	Yes	Yes	Yes	Yes	No														

A maximum of 5dB(A) exceedance is predicted at units from offsite industrial activities associated with Vaxxas Biomedical Facility. It is noted that façade treatments required for aircraft noise are predicted to be sufficient for offsite activity noise associated with nearby industrial land uses if any potential exceedance occur for outdoor area of the proposed development. This is on the condition the recommendations in Section 9 are implemented which are predicted to provide a 25dB reduction from outside to inside complying with EPP 2019 Acoustic Quality Objectives for both living (criteria 35dB(A)) and sleeping (criteria of 30dB(A)) with the predicted internal noise level of 26dB for the day and evening and 15dB(A) for the night time period.

8. Aircraft Assessment

8.1 Attended Aircraft Noise Measurements

The noise levels for the various types of aircraft recorded at the measurement location are presented in Table 15.

Table 15: Measured Aircraft Noise Levels

Date	Time 24h	Aircraft	Direction	Action	dBA Lmax slow	dB Lmax (slow) Octave band centre frequency (Hz)						
						63	125	250	500	1k	2k	4k
10/07/24	14:24	Fokker 70	SW	Departing	69.6	75.8	59.9	67.3	64.2	62.6	54.0	41.3
10/07/24	14:39	Boeing 737-838	SW	Departing	59.8	55.5	56.6	52.0	51.7	52.0	43.4	35.6
10/07/24	14:40	Embraer E190AR	SW	Departing	68.4	61.4	60.2	65.6	62.2	56.6	51.2	47.2
10/07/24	14:45	Fokker 100	SW	Departing	66.8	64.3	63.0	69.3	62.2	57.5	46.5	42.0
10/07/24	14:50	Boeing 737-8SA	SW	Departing	61.2	61.7	61.9	57.1	53.0	52.6	46.7	44.9
10/07/24	14:54	E190AR	SW	Departing	68.8	65.3	60.9	69.0	65.3	57.1	53.3	43.9
10/07/24	14:56	Airbus A350-941	SW	Departing	66.1	65.3	60.4	67.6	59.4	54.8	54.2	43.7
18/07/24	9:28	Fokker 100	SW	Departing	69.6	66.4	70.6	71.0	69.8	65.6	55.3	45.3
18/07/24	9.31	Boeing 737-800	SW	Departing	73.3	72.7	75.2	76.3	73.3	67.2	60.5	47.1
18/07/24	9.35	Boeing 737-8FE	SW	Departing	63.5	70.2	68.8	64.2	64.8	55.7	45.1	37.7
18/07/24	9.38	Embraer E190AR	SW	Departing	74.5	68.3	73.2	74.9	75.3	68.9	60.7	45.0
18/07/24	9.40	Boeing 737-8FE	SW	Departing	70.7	72.0	67.2	72.5	71.4	64.4	51.6	34.8
18/07/24	9.44	Fokker 100	SW	Departing	71.3	69.2	72.5	72.4	70.4	66.9	57.8	46.7
18/07/24	9.47	Boeing 737 Max 8	SW	Departing	56.7	63.6	60.5	58.2	56.4	52.4	47.9	46.5
18/07/24	9.50	Boeing 737-838	SW	Departing	75.5	69.1	75.9	76.1	75.0	70.7	62.4	45.6
18/07/24	9.53	Boeing 737-8FE	SW	Departing	66.2	71.3	70.5	65.6	67.8	58.7	48.1	39.3
18/07/24	9.54	Embraer E190AR	SW	Departing	71.4	67.0	67.8	72.5	72.9	65.5	56.3	43.3
18/07/24	9.57	Airbus A330-202	SW	Departing	75.9	76.3	74.5	76.6	77.1	69.9	61.5	47.1
18/07/24	10.01	Embraer E190AR	SW	Departing	64.0	69.8	65.2	65.0	66.4	54.5	44.9	45.8
18/07/24	10.08	Boeing 737-8FE	SW	Departing	62.8	74.0	69.7	66.2	63	54.8	44.8	41.8
18/07/24	10.09	Boeing 737-8FE	SW	Departing	75.4	72.9	71.1	76.5	76.6	69.3	62.4	43.6
18/07/24	10.10	Airbus A330-232	SW	Departing	71.7	68.6	67.5	73.1	70.9	68.2	57.3	45.4
Maximum level in each octave band and corresponding total dBA					75.9	74.0	75.9	76.6	77.1	70.7	62.4	47.2

The maximum measured aircraft noise level was found to be 75.9 dBA and therefore used for the purposes of a conservative assessment.

Based on maximum aircraft noise levels, additional façade treatments are required. Refer to Section 9 for recommendations.

9. Recommendations

9.1 Unit Façade Construction

All building treatments for aircraft noise calculated using Australian Standard 2021:2015 "Indoor Design Sound Levels for Determination of Aircraft Noise Reduction".

9.1.1 Unit Glazing

The minimum glazing treatments are presented in Table 16, with the installed glazing system to comply with the following:

- The minimum glass thickness specified shall not be reduced regardless of the R_w performance of the glazing system.
- If compliance cannot be achieved with the minimum R_w ratings, the glazing system shall be upgraded until compliance is achieved.
- Glazing specified with acoustic seals requires a Q-lon seal or an equivalent product, mohair seals are not acceptable.
- The glazier shall provide NATA test reports on request to verify compliance with the minimum R_w ratings. Generic reports are not acceptable.

Table 16: Glazing Treatments for Aircraft Noise Impacts

Location		Rw Rating	Façade Glazing	Acoustic Seals
Unit	Room			
All Units	All Living Kitchen Dining Rooms	31	6.38mm laminated	yes
	All Bedrooms	34	10.38mm laminated	yes

Any locations not identified in the Table 16 shall require 4mm float for windows (minimum R_w 22) and 5mm toughened for sliding doors (minimum R_w 23).

9.1.2 Unit Wall Construction

All masonry and blockwork wall systems will comply with the minimum R_w of 45. For lightweight wall systems, we recommend the following:

- 1 layer of 9mm FC, 92mm steel stud with 75mm glasswool batts (density 11kg/m^3) and 1 layers of 13mm fire rated plasterboard.

9.1.3 Unit Roof Construction

For the roof systems, we recommend construction as follows:

- R_w 50 – The proposed concrete slab on the rooftops is predicted to achieve an R_w 50.

9.2 Fitness Studios and Cinema Façade Construction

9.2.1 Fitness Studios and Cinema Glazing

The minimum glazing treatments presented in Table 17 are required to comply with the following:

- The minimum glass thickness specified shall not be reduced regardless of the R_w performance of the glass unless the glazier can provide a specific (non-generic) NATA Test report proving the proposed glazing system complies (the test report must be based on the same configuration proposed for the development). Note an estimation or calculated performance will not be accepted.
- If compliance cannot be achieved with the minimum R_w ratings, the glazing system shall be upgraded until compliance is achieved.
- Glazing specified with acoustic seals requires a seal that has been tested with a glazing system or door to achieve an R_w rating in accordance with AS/NZS ISO 717.1, mohair seals are not acceptable.
- The glazier shall provide NATA test reports on request to verify compliance with the minimum R_w ratings. Generic reports are not acceptable.

Table 17: Fitness Studios and Cinema Glazing Treatments

Location	R_w Ratings			Glazing Thickness	Acoustic Seals
	Wall	Roof	Glazing		
Fitness Studio Building 1	35	35	31	6.38mm	Yes
Fitness Studio Building 2	35	35	31	6.38mm	Yes
Level 1 Cinema	35	35	31	6.38mm	Yes

9.2.2 Fitness Studios and Cinema Wall Construction

The wall construction recommendations are included in Table 18 below. Note that these are not the only allowable methods of construction for the development, and alternative constructions to achieve the required R_w ratings may also be provided.

Table 18: Fitness Studios and Cinema Wall Construction

Wall R_w	Minimum Wall Treatments
35	Masonry veneer wall at least 110mm thick, 90mm timber studs at 600mm centres, 20mm gap, 10mm plasterboard internal. OR 6mm fibre cement sheeting or sheet metal external, 90mm timber studs at 600mm centres, 75mm glasswool insulation (11kg/m^3) or equivalent, 13mm plasterboard internal.

9.2.3 Fitness Studios and Cinema Roof/Ceiling Construction

The roof/ceiling construction recommendations are included in Table 19 below. Note that these are not the only allowable methods of construction for the development, and alternative constructions to achieve the required R_w ratings may also be provided.

Table 19: Fitness Studios and Cinema Roof Construction

Roof R_w	Minimum Roof Treatments
35	Sheet metal roof with sarking, plasterboard ceiling at least 10mm thick fixed to ceiling cavity.

9.2.4 Fitness Studios and Cinema Entry Doors

Table 20: Fitness Studios and Cinema Entry Door Construction

Door R_w	Minimum Entry Door Construction
28	Fixed so as to overlap the frame or rebate of the frame, constructed of – (i) wood, particleboard or blockboard not less than 33mm thick; or (ii) compressed fibre reinforced sheeting not less than 9mm thick; or (iii) other suitable material with a mass per unit area not less than 24.4kg/m^2 ; or (iv) solid core timber door not less than 35mm thick fitted with full perimeter acoustically rated seals.

9.3 Mechanical Ventilation

To achieve the required internal noise levels for the development, all locations nominated in Table 16 and Table 17 will require an alternative ventilation system similar to air-conditioning or mechanical ventilation that complies with the fresh air requirements of AS1668 and the NCC.

9.4 Onsite Activities

Based on the predicted noise levels and subjective assessment of the site and surrounds, noise impacts at the receiver locations are predicted to comply with the assessment criteria on the condition the following management plans are implemented:

- Use of the pool area and rooftop terraces shall be limited to the day and evening periods, between 7am and 10pm.
- All fitness studios and cinema doors and windows are to be closed during operation.
- Outdoor fitness turf areas (Buildings 1 and 2) are to be limited to light hand-weight and body-weight exercises only. Amplified music and amplified voices are not permitted within these areas.
- Deliveries and waste collection shall be limited to the daytime period, between 7am and 6pm.
- Carpark and ramp finished surfaces should consist of materials which provide low tyre squeal characteristics. Any traversable drainage grates must be securely fastened.

9.4.1 Onsite Mechanical Plant

No information regarding mechanical services was available at the time of the assessment. We recommend that any new mechanical plant is designed to comply with the criteria stated in Section 6.2.2 with an assessment by qualified acoustic consultant to be conducted prior to installation.

9.5 Offsite Activities

With the exception of the Vaxxas Biomedical Facility, noise impacts at the nearest onsite receiver locations are predicted to comply with the assessment criteria. A maximum of 5dB(A) exceedance is predicted units for offsite industrial activities associated with Vaxxas Biomedical Facility. It is noted that façade treatments required for aircraft noise are predicted to be sufficient for offsite activity noise associated with nearby industrial land uses if any potential exceedance occur within the proposed development. This is on the condition the recommendations in Section 9 are implemented.

10. Conclusion

An aircraft and environmental noise assessment was conducted for the proposed residential development to be located at Site 18B, 258 Macarthur Avenue, Hamilton. The development is predicted to satisfy all the relevant noise assessment requirements on the condition that the recommendations in Section 10 are implemented.

If you should have any queries, please do not hesitate to contact us.

Report Prepared By

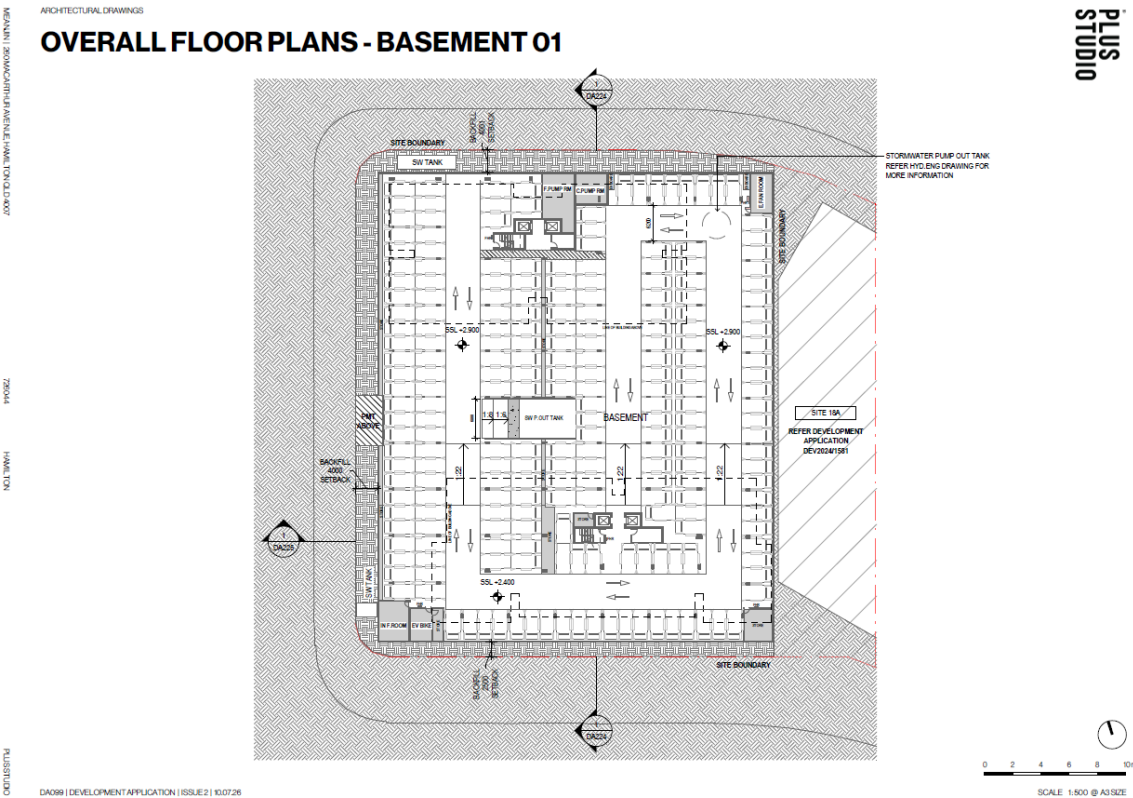
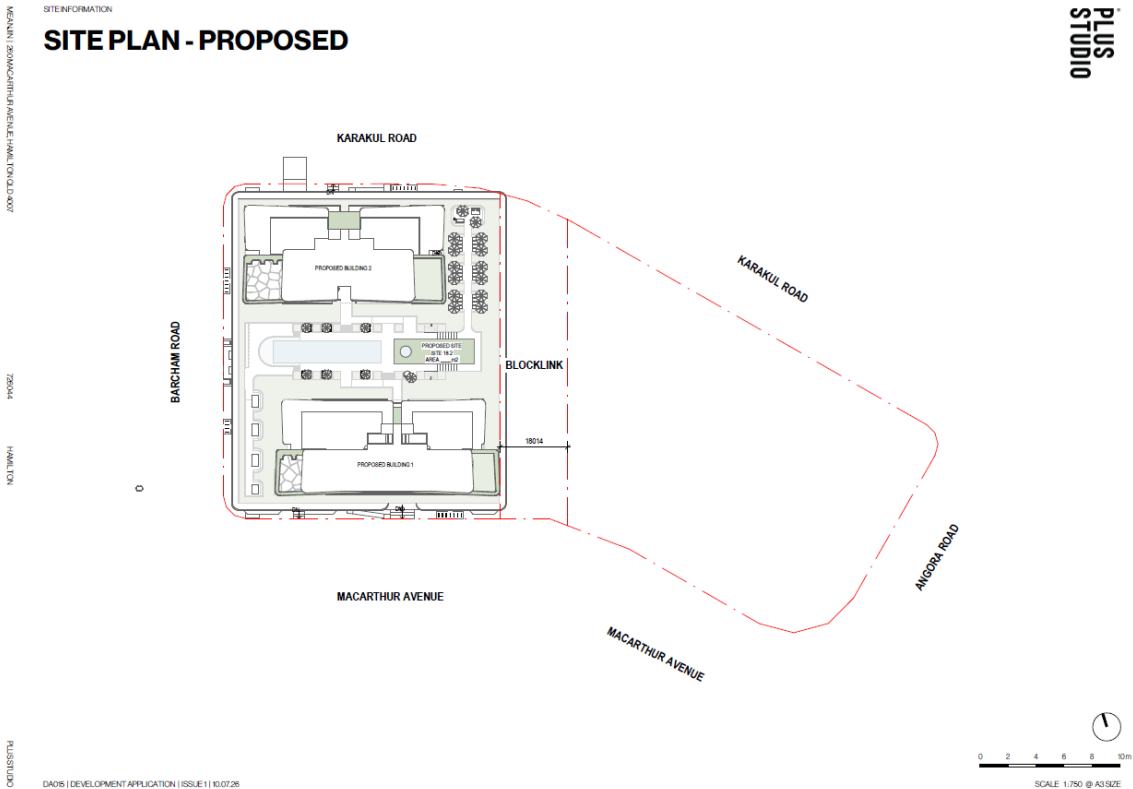


David Dadd (B.Sc. (Env.) MAAS)
Senior Acoustic Consultant

acousticworks)))

11. Appendices

11.1 Development Plans



ARCHITECTURAL DRAWINGS

OVERALL FLOOR PLANS - GROUND

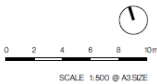
MEANING | 200MACARTHUR AVENUE HAMILTON ON L2A007

75044

HAMILTON

PLUSSTUDIO

DA000 | DEVELOPMENT APPLICATION | ISSUE 2 | 10.07.26



ARCHITECTURAL DRAWINGS

OVERALL FLOOR PLANS - LEVEL 01

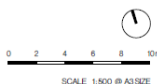
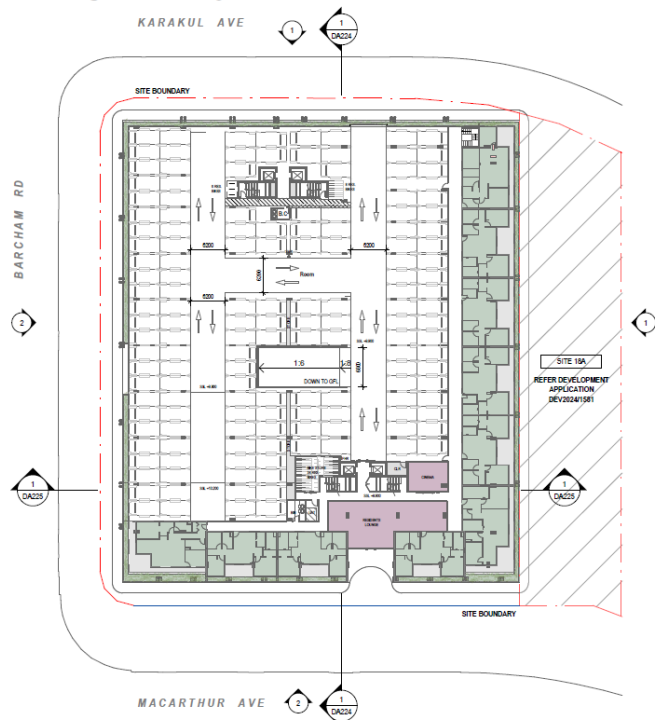
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75044

HAMILTON

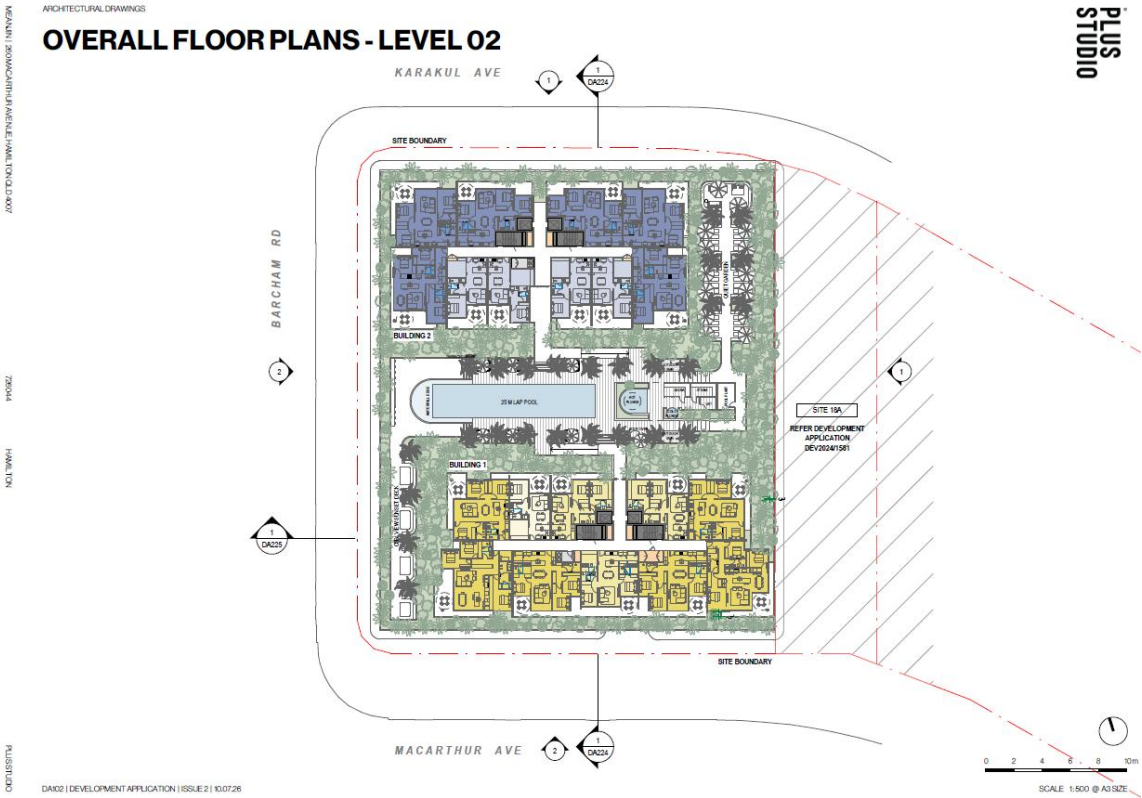
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DA001 | DEVELOPMENT APPLICATION | ISSUE 2 | 10.07.26



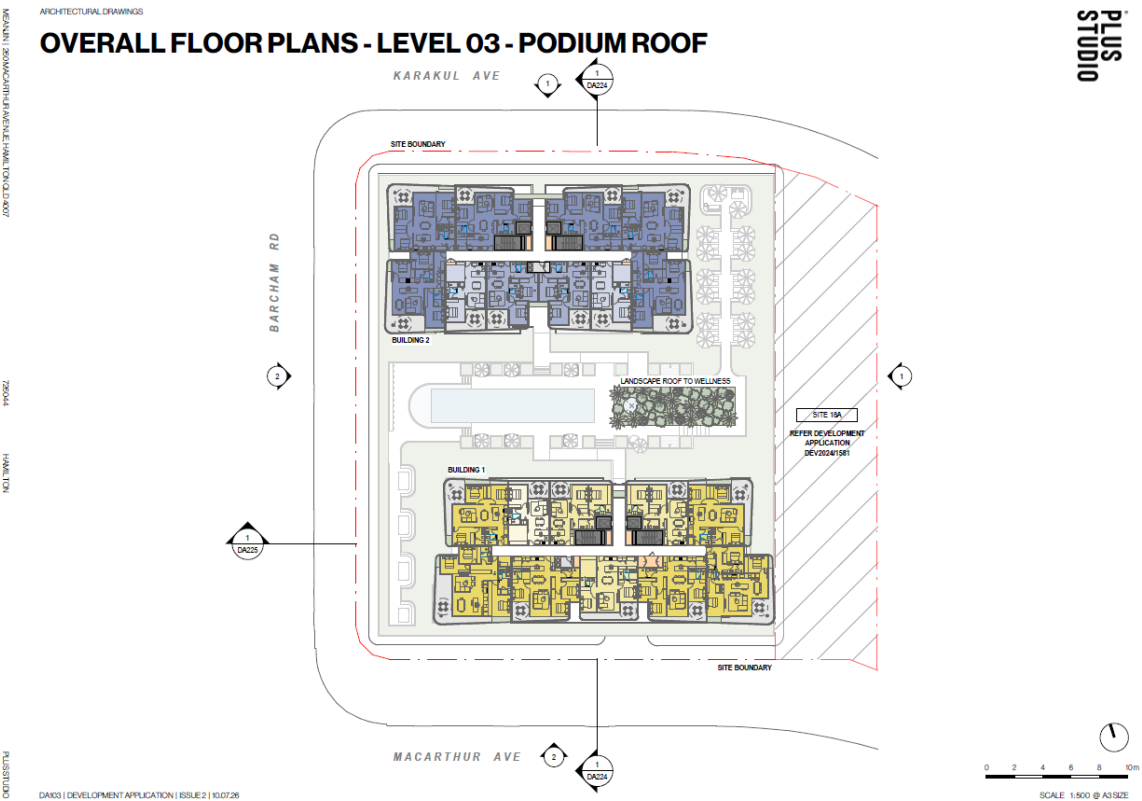
ARCHITECTURAL DRAWINGS

OVERALL FLOOR PLANS - LEVEL 02



ARCHITECTURAL DRAWINGS

OVERALL FLOOR PLANS - LEVEL 03 - PODIUM ROOF



ARCHITECTURAL DRAWINGS

OVERALL FLOOR PLANS - LEVEL 04-12 TYPICAL

WEA/NT | 350 MACARTHUR AVENUE | HAMILTON | ON | L9A 0K7

75044

HAMILTON

PLUSSTUDIO

DA04 | DEVELOPMENT APPLICATION | ISSUE 2 | 10.07.20



ARCHITECTURAL DRAWINGS

OVERALL FLOOR PLANS - LEVEL 13 - BUILDING 2 ROOFTOP

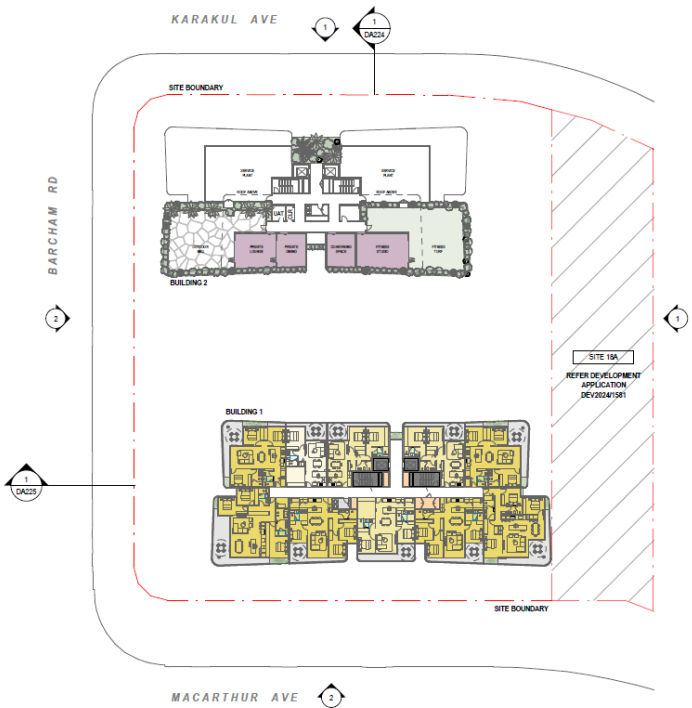
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75044

HAMILTON

PLUSSTUDIO

DA05 | DEVELOPMENT APPLICATION | ISSUE 2 | 10.07.20



ARCHITECTURAL DRAWINGS

OVERALL FLOOR PLANS - LEVEL 14-16 TYPICAL - BUILDING 2 ROOF

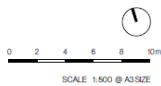
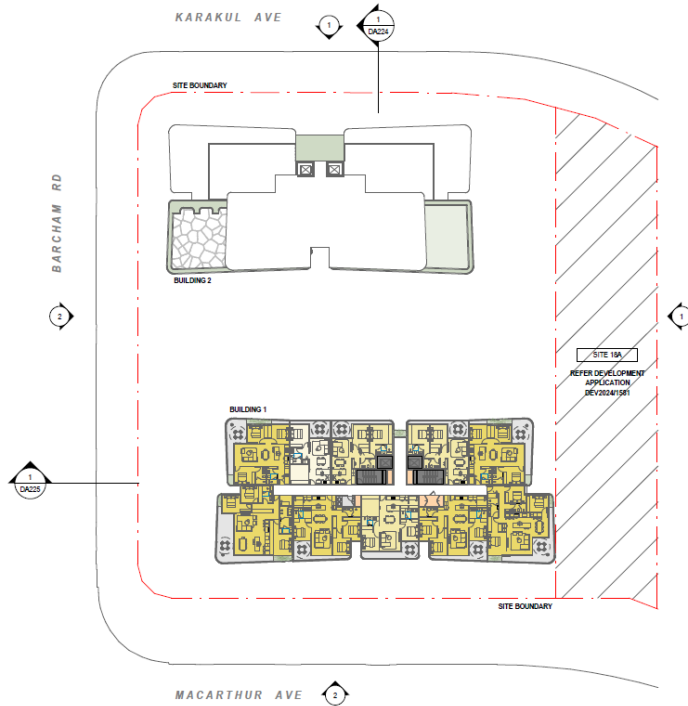
MEANLINE | 305 MACARTHUR AVENUE | HAMILTON | ON | L7M 0K7

75044

HAMILTON

PLUSSTUDIO

DA007 | DEVELOPMENT APPLICATION | ISSUE 2 | 10.07.26



ARCHITECTURAL DRAWINGS

OVERALL FLOOR PLANS - BUILDING 1 ROOFTOP

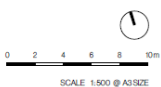
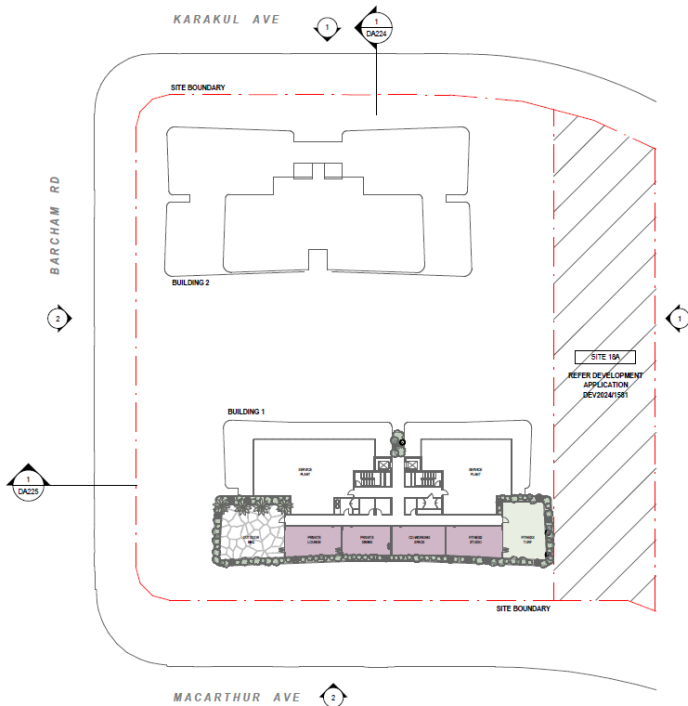
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75044

HAMILTON

PLUSSTUDIO

DA009 | DEVELOPMENT APPLICATION | ISSUE 2 | 10.07.26



ARCHITECTURAL DRAWINGS

OVERALL FLOOR PLANS - BUILDING 1 ROOF

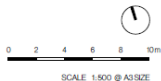
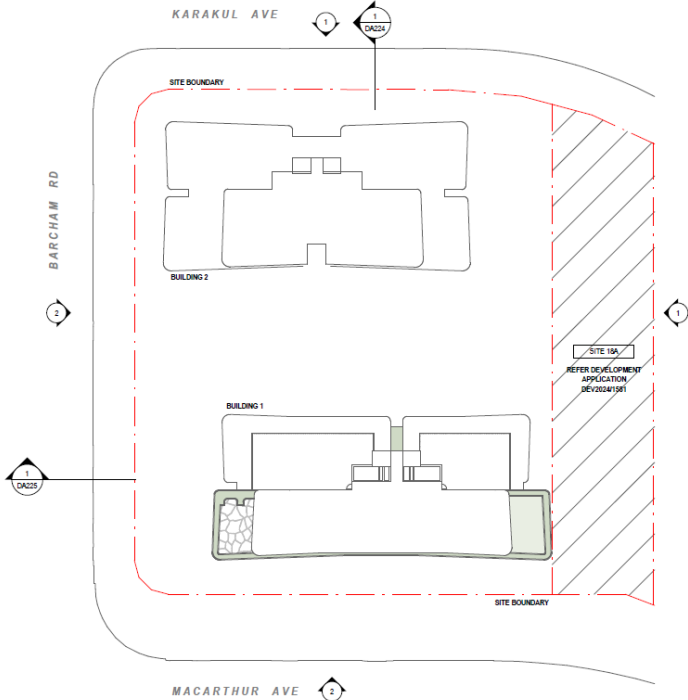
MEAN/1 30/06/2025/18/1/ENVIRONMENTAL/ACN.DOCX

7505/4

HAMILTON

PLUSTUDIO

DA101 DEVELOPMENT APPLICATION 1 ISSUE 2 | 10.07.26



ARCHITECTURAL DRAWINGS

SITE ELEVATIONS - NORTH + WEST

MEAN/1 30/06/2025/18/1/ENVIRONMENTAL/ACN.DOCX

7505/4

HAMILTON

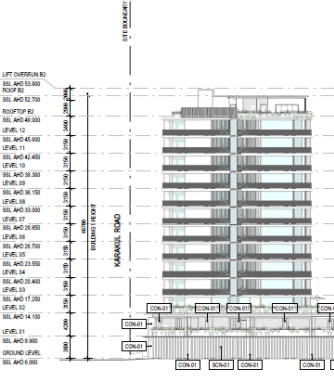
PLUSTUDIO

DA2001 DEVELOPMENT APPLICATION 1 ISSUE 3 | 10.07.26

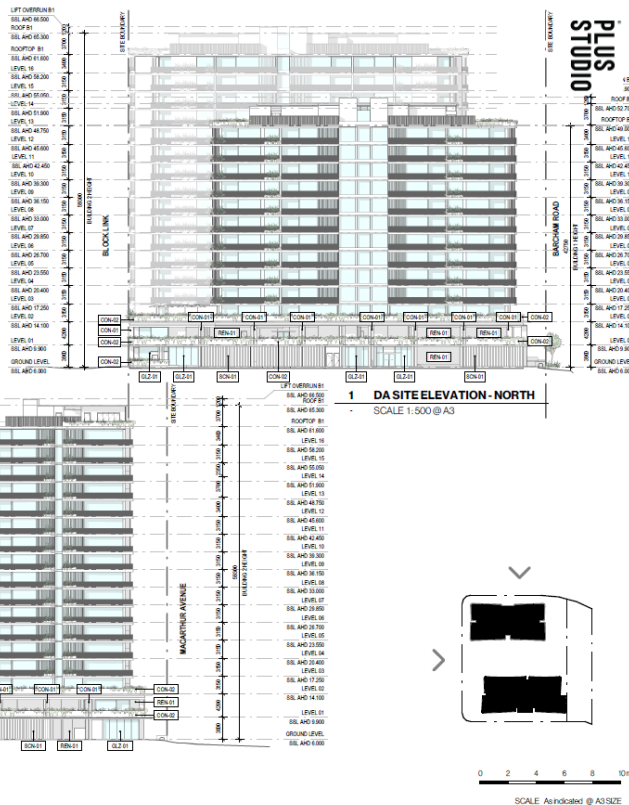
LEGEND

CON-01	APPLIED FINISH - SANDSTONE LOOK FINISH
CON-02	APPLIED FINISH - WARM WHITE FINISH
REN-01	APPLIED FINISH - SANDSTONE LOOK FINISH
GLZ-01	GLAZING - CLEAR
BAL-01	VERTICAL METAL BALUSTRADE
SCN-01	ALUMINIUM LOUVER BATTEN SCREEN
SCN-02	ALUMINIUM VERTICAL BATTEN SCREEN

NOTE: LANDSCAPE & PLANTING INDICATIVE ONLY. REFER LANDSCAPE ARCHITECT DRAWING FOR MORE INFORMATION.



2 DA SITE ELEVATION - WEST
SCALE 1:500 @ A3



1 DA SITE ELEVATION - NORTH
SCALE 1:500 @ A3



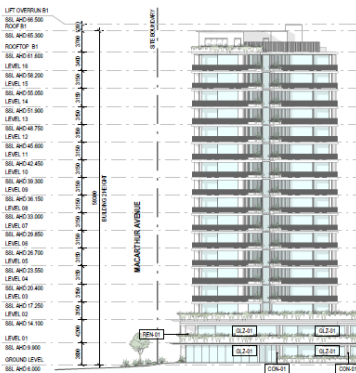
ARCHITECTURAL DRAWINGS

SITE ELEVATIONS - SOUTH + EAST

LEGEND

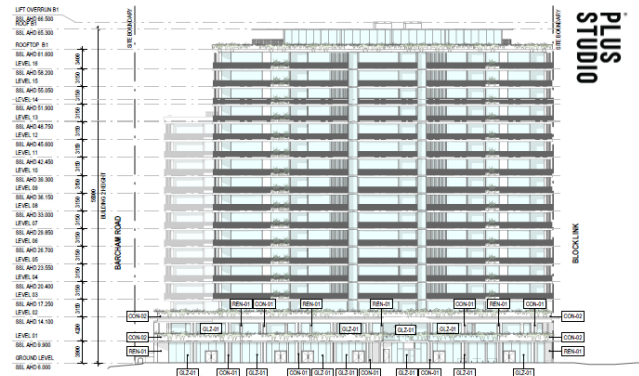
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CON-02	APPLIED FINISH - WARM WHITE FINISH
REN-01	APPLIED FINISH - SANDSTONE LOOK FINISH
GLZ-01	GLAZING - CLEAR
BAL-01	VERTICAL METAL BALUSTRADE
SCN-01	ALUMINIUM LOUVRE BATTEN SCREEN
SCN-02	ALUMINIUM VERTICAL BATTEN SCREEN

NOTE: LANDSCAPE & PLANTING
INDICATIVE ONLY. REFER LANDSCAPE
ARCHITECT DRAWING FOR MORE
INFORMATION



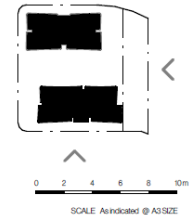
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- SCALE 1:500 @ A3

DA201 | DEVELOPMENT APPLICATION | ISSUE 3 | 10.07.20

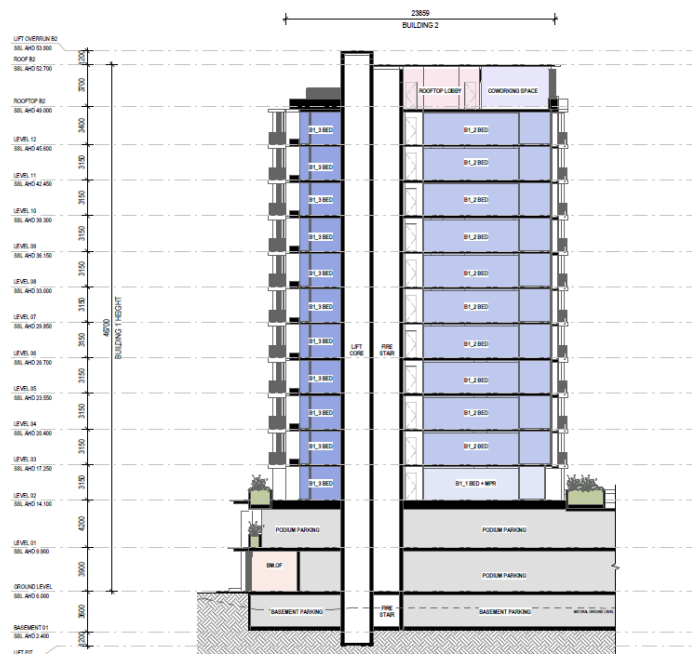


2 DA SITE ELEVATION - SOUTH
- SCALE 1:500 @ A3

SCALE 1:500 @ A3



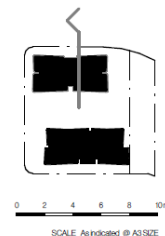
SECTION A



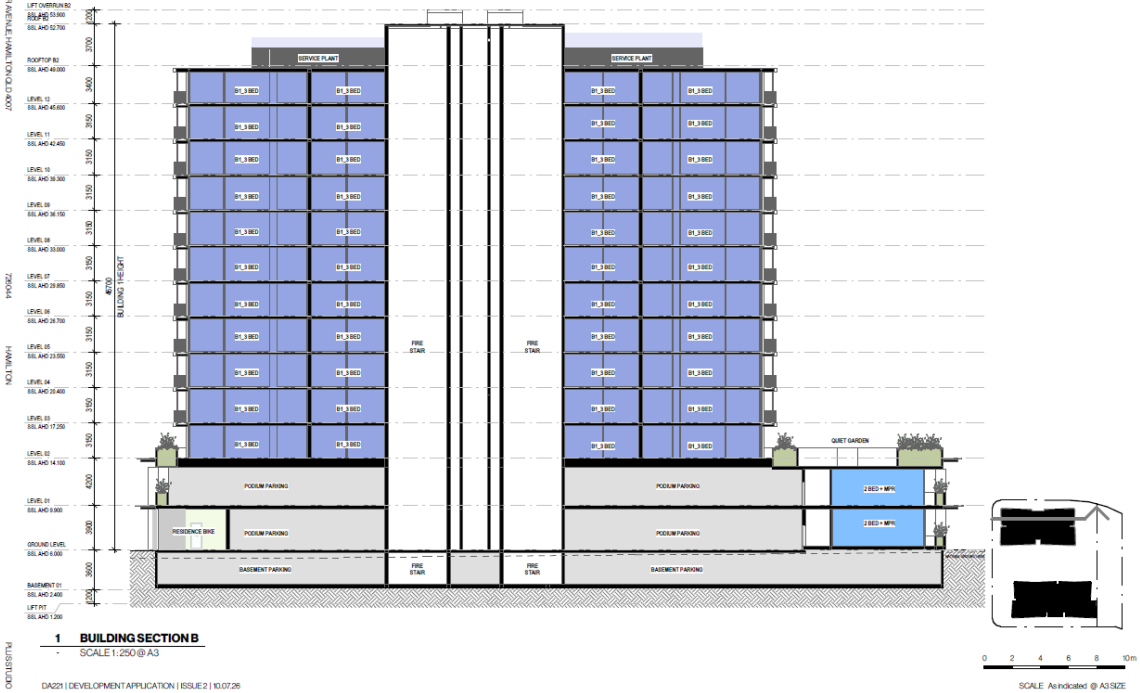
1 BUILDING SECTION A
- SCALE 1:250@A3

SCALE 1:250 @ A3

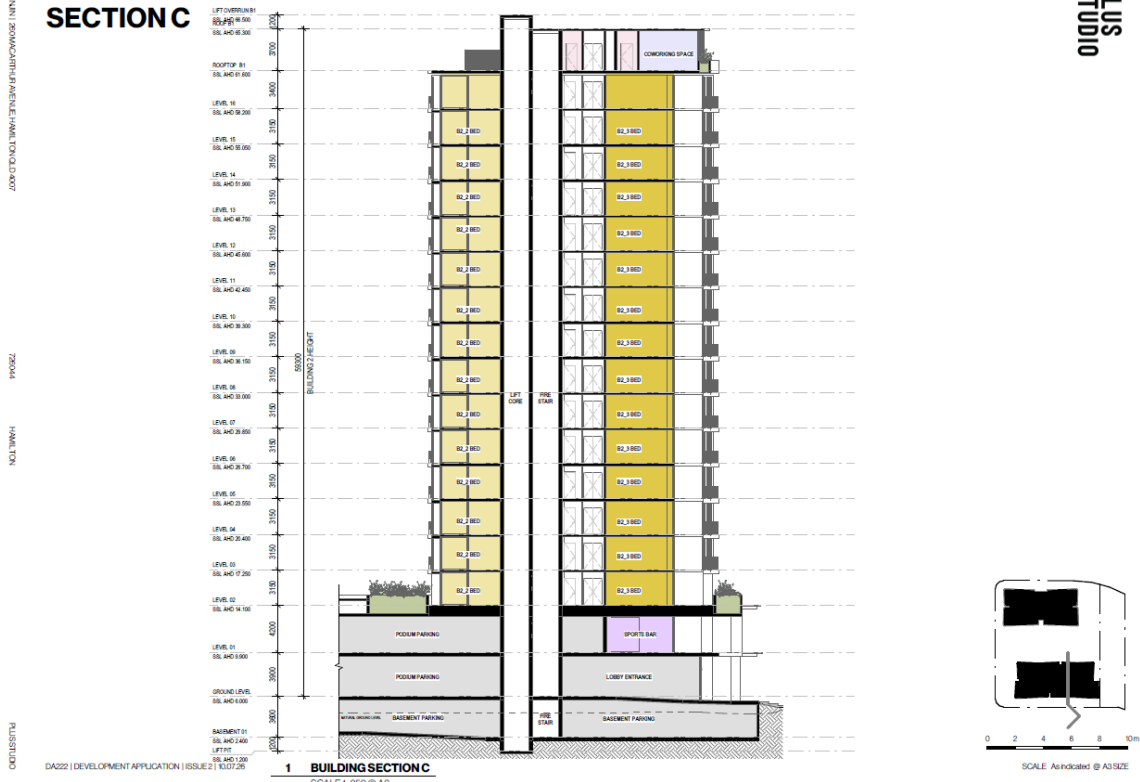
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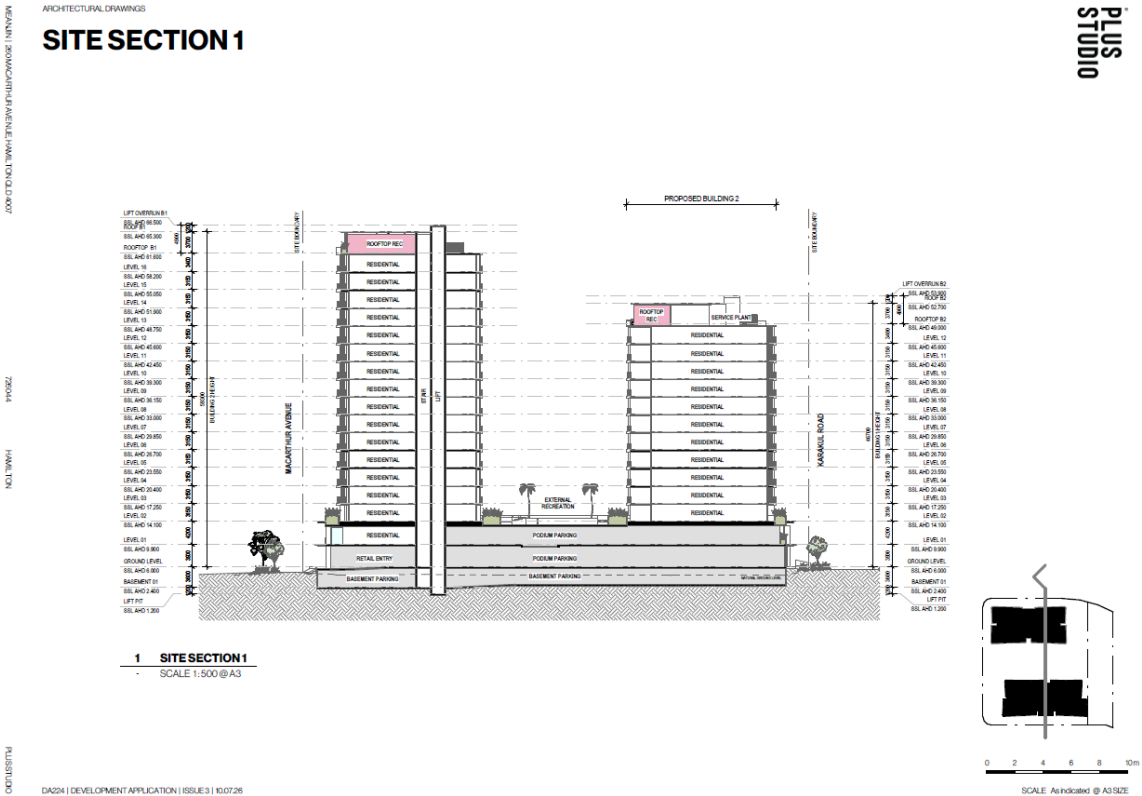
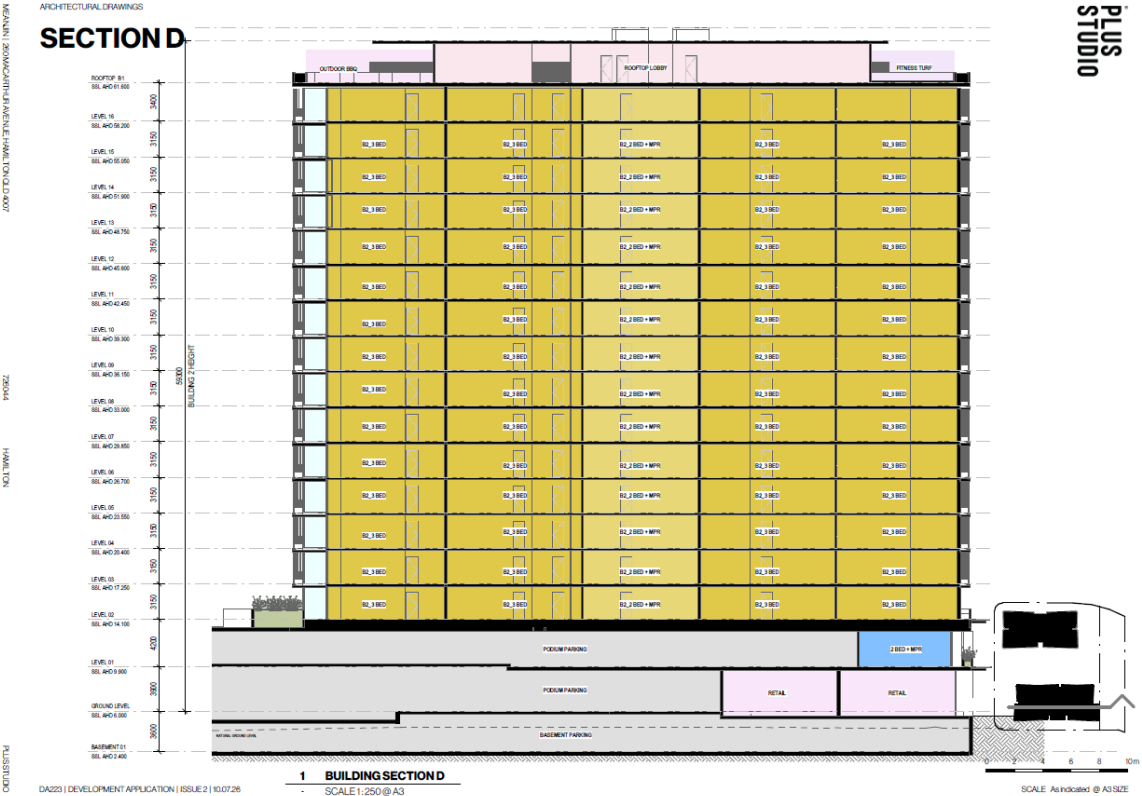


ARCHITECTURAL DRAWINGS
SECTION B



ARCHITECTURAL DRAWINGS
SECTION C





ARCHITECTURAL DRAWINGS
SITE SECTION 2

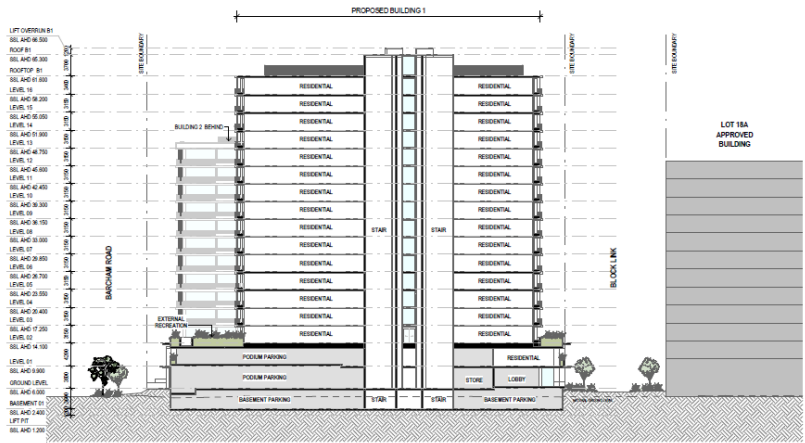
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ZH044

HAMILTON

PLUSSTUDIO

DA225 | DEVELOPMENT APPLICATION | ISSUE 2 | 10.07.26



1 SITE SECTION 2
SCALE 1:500 @ A3



DIAGRAMS & ANALYSIS

BUILDING HEIGHT CONTEXT SECTION

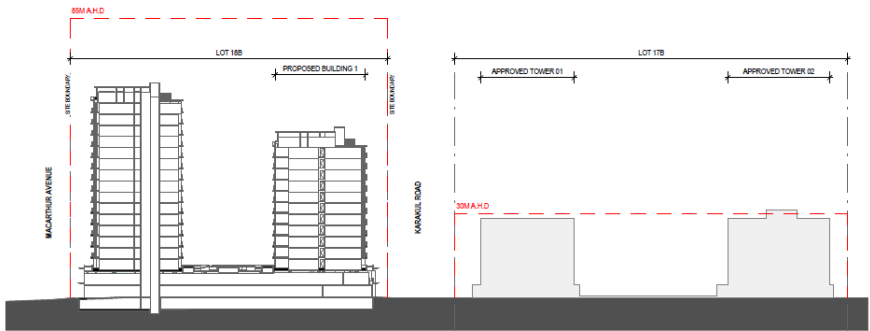
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ZH044

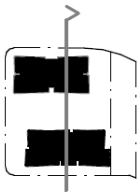
HAMILTON

PLUSSTUDIO

DA300 | DEVELOPMENT APPLICATION | ISSUE 1 | 10.07.26



1 SITE SECTION - BUILDING HEIGHTS 1
SCALE 1:800 @ A3



MEANLIN | 250 MACARTHUR AVENUE, HAMILTON ON L8P 4K0 7



HAMILTON



AREA TYPE	AREA	Percentage
APARTMENTS	5491m ²	60%
BALCONY	2263m ²	25%
CIRCULATION	833m ²	9%
SERVICES	535m ²	6%
	9122m ²	

MEANLIN | 250 MCACFITHUR AVENUE, HAMILTON, ON L8D 4G0



HAMILTON



0 2 4 6 8 10m

SCALE As indicated @ A3 SIZE

ARCHITECTURAL DRAWINGS

BUILDING ELEVATIONS - BUILDING 1 - WEST

LEGEND

- CON-01 APPLIED FINISH - SANDSTONE LOOK FINISH
- CON-02 APPLIED FINISH - WARM WHITE FINISH
- REN-01 APPLIED FINISH - SANDSTONE LOOK FINISH
- GLZ-01 GLAZING - CLEAR
- BAL-01 VERTICAL METAL BALUSTRADE
- SCN-01 ALUMINUM LOUVRE BATTEN SCREEN
- SCN-02 ALUMINUM VERTICAL BATTEN SCREEN

NOTE: LANDSCAPE & PLANTING INDICATIVE ONLY. REFER LANDSCAPE ARCHITECT DRAWING FOR MORE INFORMATION

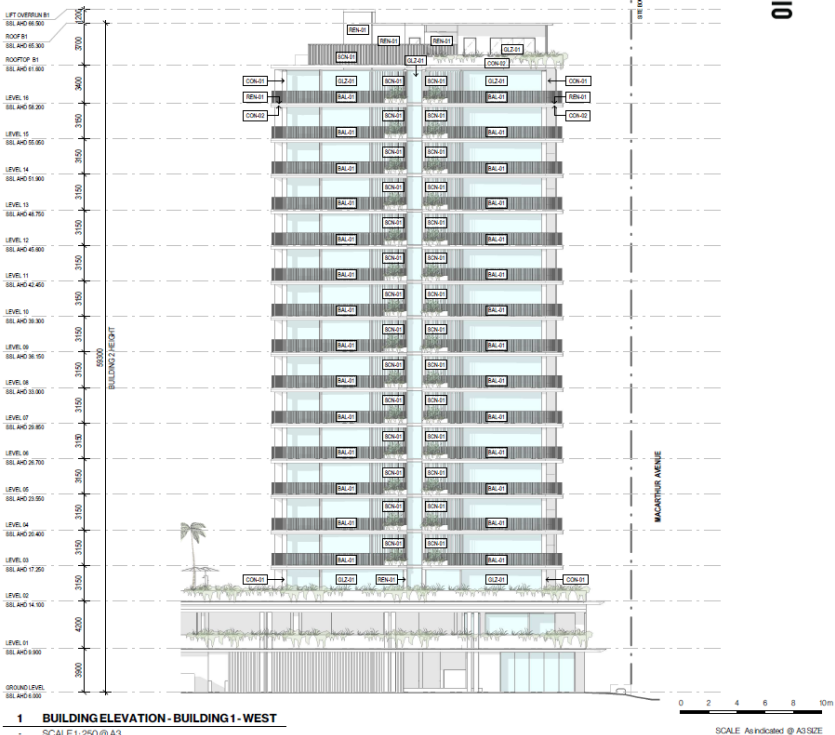
250044

HAMILTON



PLUSTUDIO

DA2021 (DEVELOPMENT APPLICATION | ISSUE 3 | 10.07.26)



ARCHITECTURAL DRAWINGS

BUILDING ELEVATIONS - BUILDING 1 - SOUTH

LEGEND

- CON-01 APPLIED FINISH - SANDSTONE LOOK FINISH
- CON-02 APPLIED FINISH - WARM WHITE FINISH
- REN-01 APPLIED FINISH - SANDSTONE LOOK FINISH
- GLZ-01 GLAZING - CLEAR
- BAL-01 VERTICAL METAL BALUSTRADE
- SCN-01 ALUMINUM LOUVRE BATTEN SCREEN
- SCN-02 ALUMINUM VERTICAL BATTEN SCREEN

NOTE: LANDSCAPE & PLANTING INDICATIVE ONLY. REFER LANDSCAPE ARCHITECT DRAWING FOR MORE INFORMATION

250044

HAMILTON



PLUSTUDIO

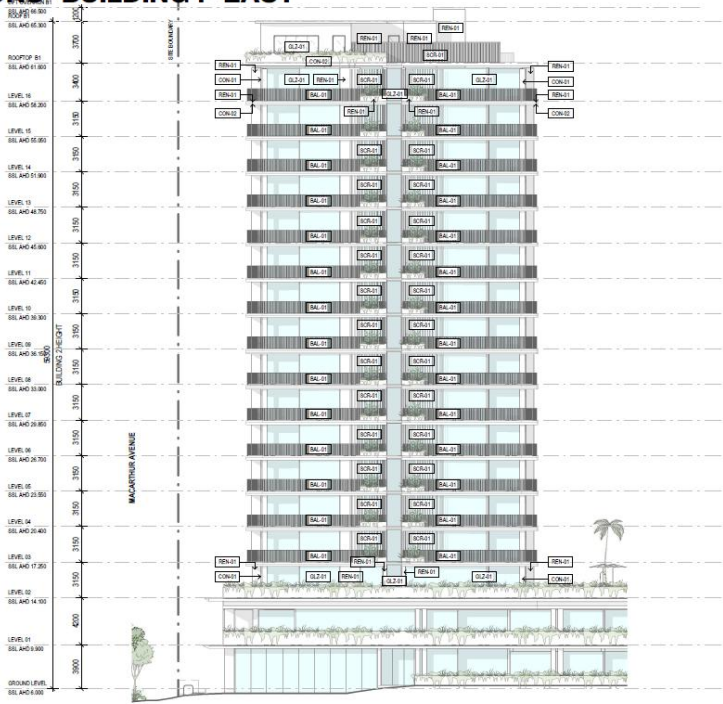
DA2022 (DEVELOPMENT APPLICATION | ISSUE 3 | 10.07.26)



ARCHITECTURAL DRAWINGS

BUILDING ELEVATIONS - BUILDING 1 - EAST

- LEGEND**
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 - CON-02 APPLIED FINISH - WARM WHITE FINISH
 - REN-01 APPLIED FINISH - SANDSTONE LOOK FINISH
 - GLZ-01 GLAZING - CLEAR
 - BAL-01 VERTICAL METAL BALUSTRADE
 - SCN-01 ALUMINUM LOUVRE BATTEN SCREEN
 - SCN-02 ALUMINUM VERTICAL BATTEN SCREEN
- NOTE: LANDSCAPE & PLANTING INDICATIVE ONLY. REFER LANDSCAPE ARCHITECT DRAWING FOR MORE INFORMATION



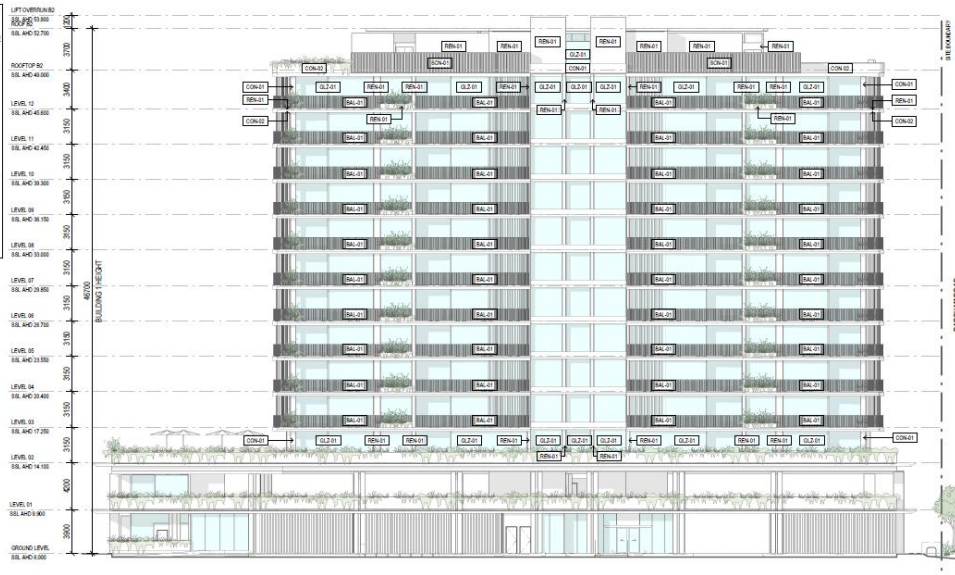
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SCALE 1:250 @ A3

0 2 4 6 8 10m
SCALE: As Indicated @ A3 SIZE

ARCHITECTURAL DRAWINGS

BUILDING ELEVATIONS - BUILDING 2 - NORTH

- LEGEND**
- CON-01 APPLIED FINISH - SANDSTONE LOOK FINISH
 - CON-02 APPLIED FINISH - WARM WHITE FINISH
 - REN-01 APPLIED FINISH - SANDSTONE LOOK FINISH
 - GLZ-01 GLAZING - CLEAR
 - BAL-01 VERTICAL METAL BALUSTRADE
 - SCN-01 ALUMINUM LOUVRE BATTEN SCREEN
 - SCN-02 ALUMINUM VERTICAL BATTEN SCREEN
- NOTE: LANDSCAPE & PLANTING INDICATIVE ONLY. REFER LANDSCAPE ARCHITECT DRAWING FOR MORE INFORMATION



1 BUILDING ELEVATION - BUILDING 2 - NORTH
SCALE 1:250 @ A3

0 2 4 6 8 10m
SCALE: As Indicated @ A3 SIZE

ARCHITECTURAL DRAWINGS

BUILDING ELEVATIONS - BUILDING 2 - WEST

LEGEND

- CON-01 APPLIED FINISH - SANDSTONE LOOK FINISH
 - CON-02 APPLIED FINISH - WARM WHITE FINISH
 - REN-01 APPLIED FINISH - SANDSTONE LOOK FINISH
 - GLZ-01 GLAZING - CLEAR
 - BAL-01 VERTICAL METAL BALUSTRADE
 - SCN-01 ALUMINIUM LOUVRE BATTEN SCREEN
 - SCN-02 ALUMINIUM VERTICAL BATTEN SCREEN
- NOTE: LANDSCAPE & PLANTING INDICATIVE ONLY. REFER LANDSCAPE ARCHITECT DRAWING FOR MORE INFORMATION



1 BUILDING ELEVATION - BUILDING 2 - WEST
SCALE 1:250 @ A3

0 2 4 6 8 10m
SCALE As Indicated @ A3 SIZE

DA2202 | DEVELOPMENT APPLICATION | ISSUE 3 | 10.07.26

ARCHITECTURAL DRAWINGS

BUILDING ELEVATIONS - BUILDING 2 - SOUTH

LEGEND

- CON-01 APPLIED FINISH - SANDSTONE LOOK FINISH
 - CON-02 APPLIED FINISH - WARM WHITE FINISH
 - REN-01 APPLIED FINISH - SANDSTONE LOOK FINISH
 - GLZ-01 GLAZING - CLEAR
 - BAL-01 VERTICAL METAL BALUSTRADE
 - SCN-01 ALUMINIUM LOUVRE BATTEN SCREEN
 - SCN-02 ALUMINIUM VERTICAL BATTEN SCREEN
- NOTE: LANDSCAPE & PLANTING INDICATIVE ONLY. REFER LANDSCAPE ARCHITECT DRAWING FOR MORE INFORMATION



1 BUILDING ELEVATION - BUILDING 2 - SOUTH
SCALE 1:250 @ A3

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SCALE As Indicated @ A3 SIZE

DA2202 | DEVELOPMENT APPLICATION | ISSUE 3 | 10.07.26

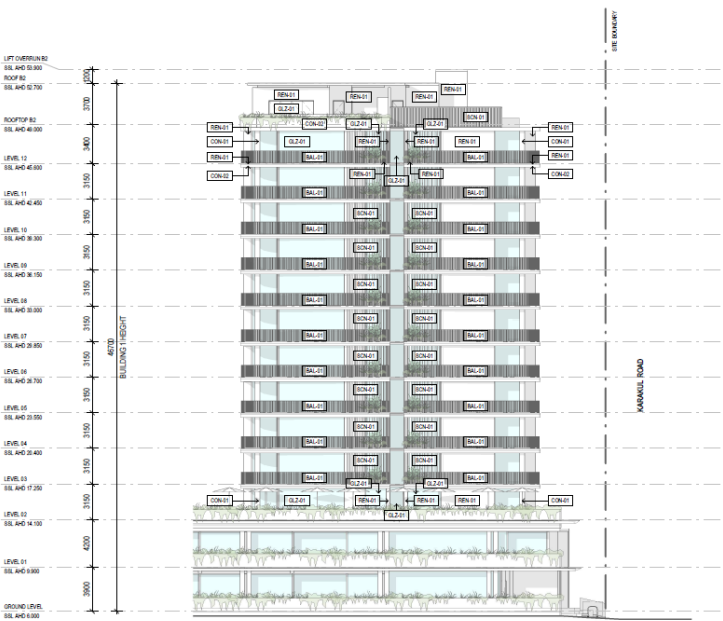
ARCHITECTURAL DRAWINGS

BUILDING ELEVATIONS - BUILDING 2 - EAST

LEGEND

CON-01	APPLIED FINISH - SANDSTONE LOOK FINISH
CON-02	APPLIED FINISH - WARM WHITE FINISH
REN-01	APPLIED FINISH - SANDSTONE LOOK FINISH
GLZ-01	GLAZING - CLEAR
BAL-01	VERTICAL METAL BALUSTRADE
SCN-01	ALUMINUM LOUVRE BATTEN SCREEN
SCN-02	ALUMINUM VERTICAL BATTEN SCREEN

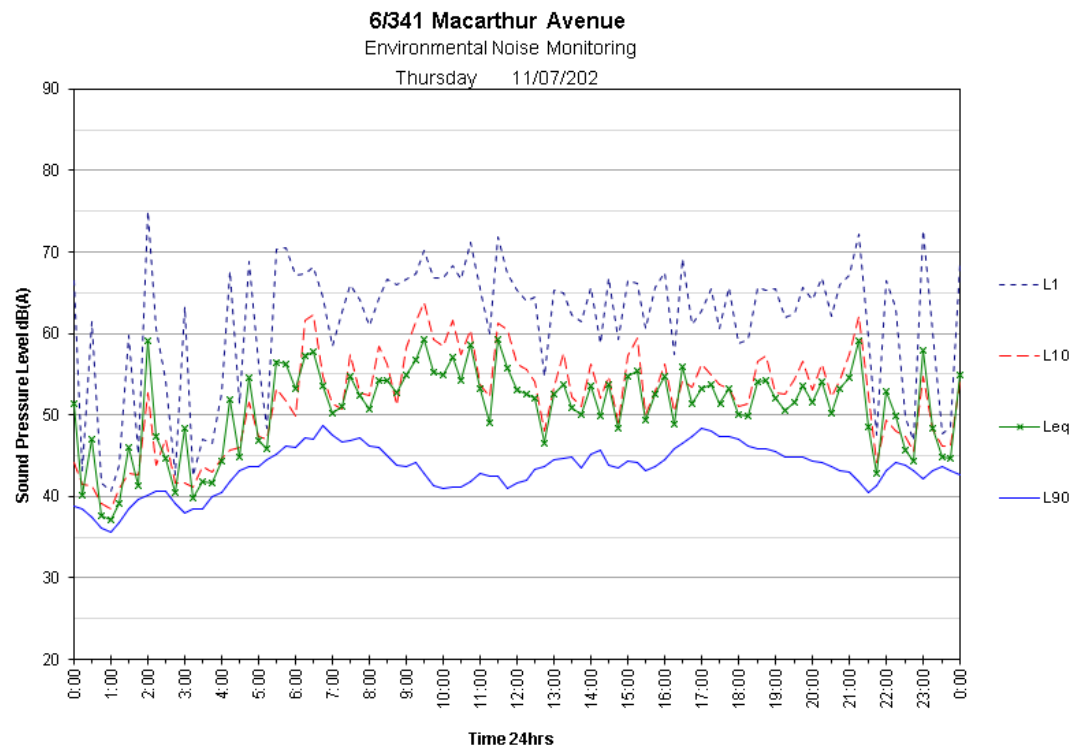
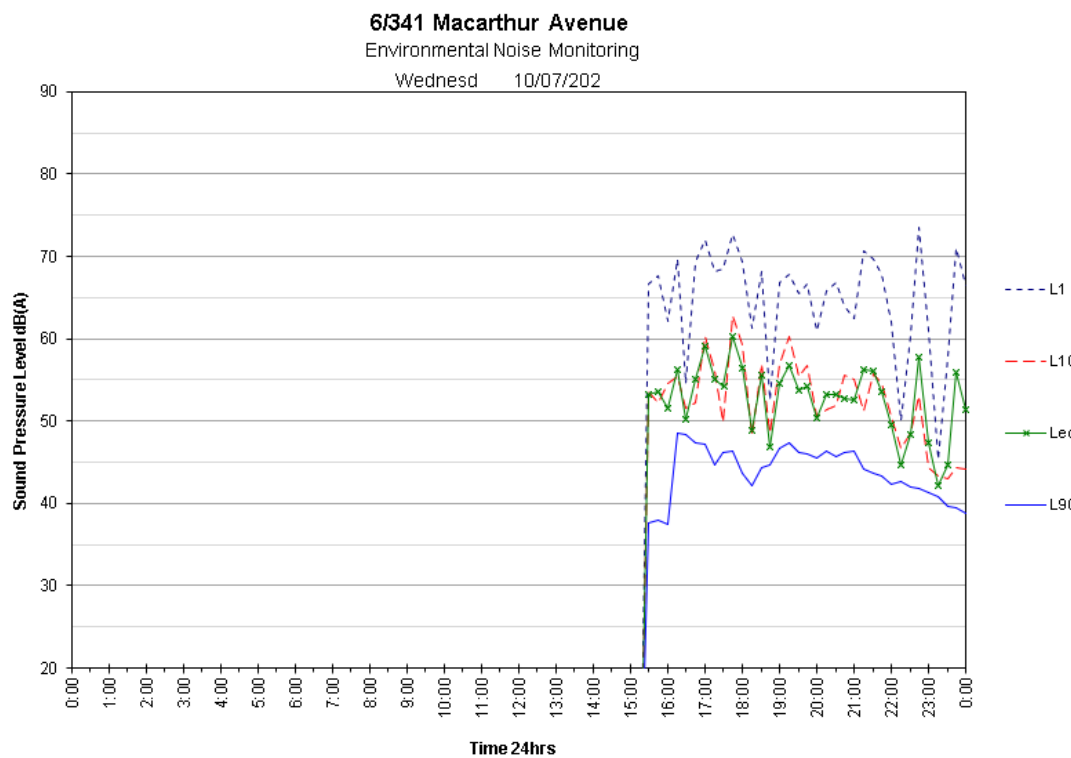
NOTE: LANDSCAPE & PLANTING INDICATIVE ONLY. REFER LANDSCAPE ARCHITECT DRAWING FOR MORE INFORMATION

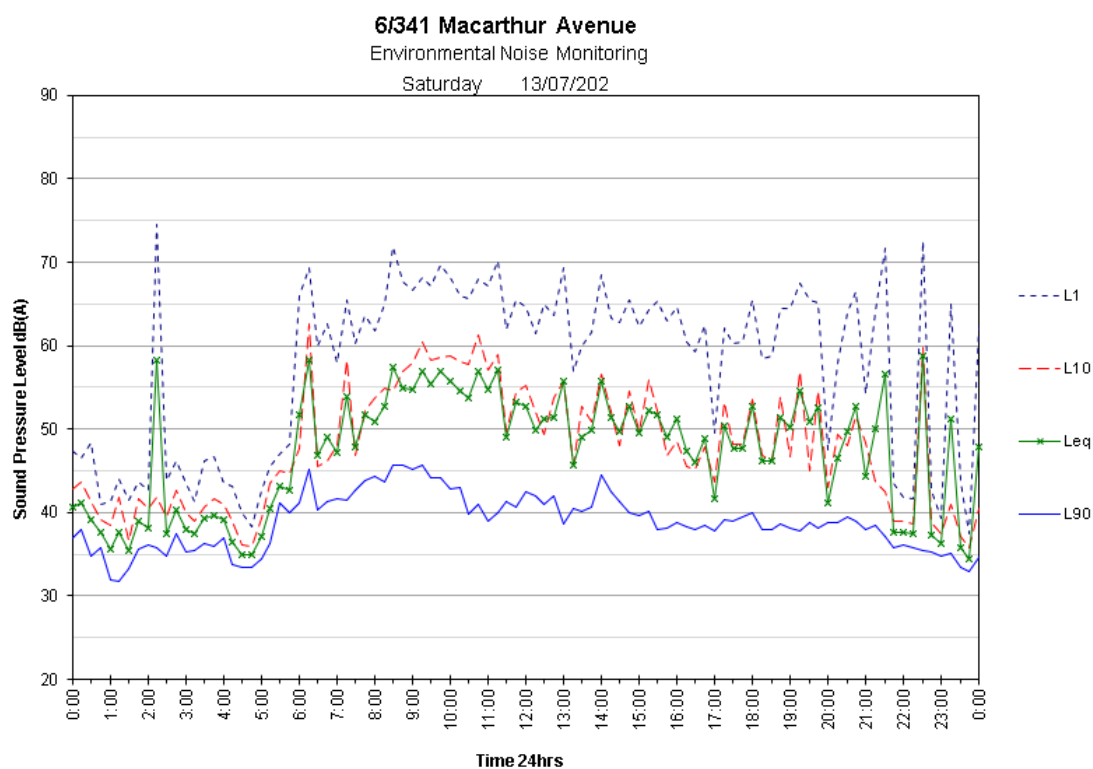
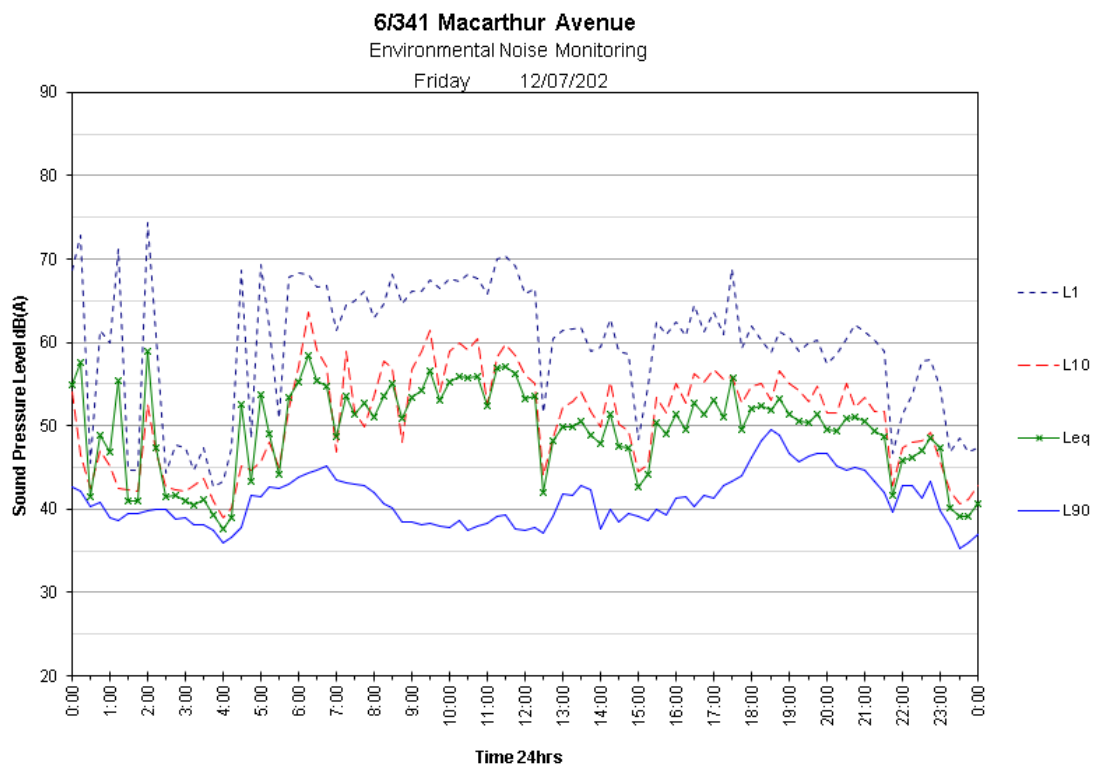


1 BUILDING ELEVATION - BUILDING 2 - EAST
SCALE 1:250 @ A3

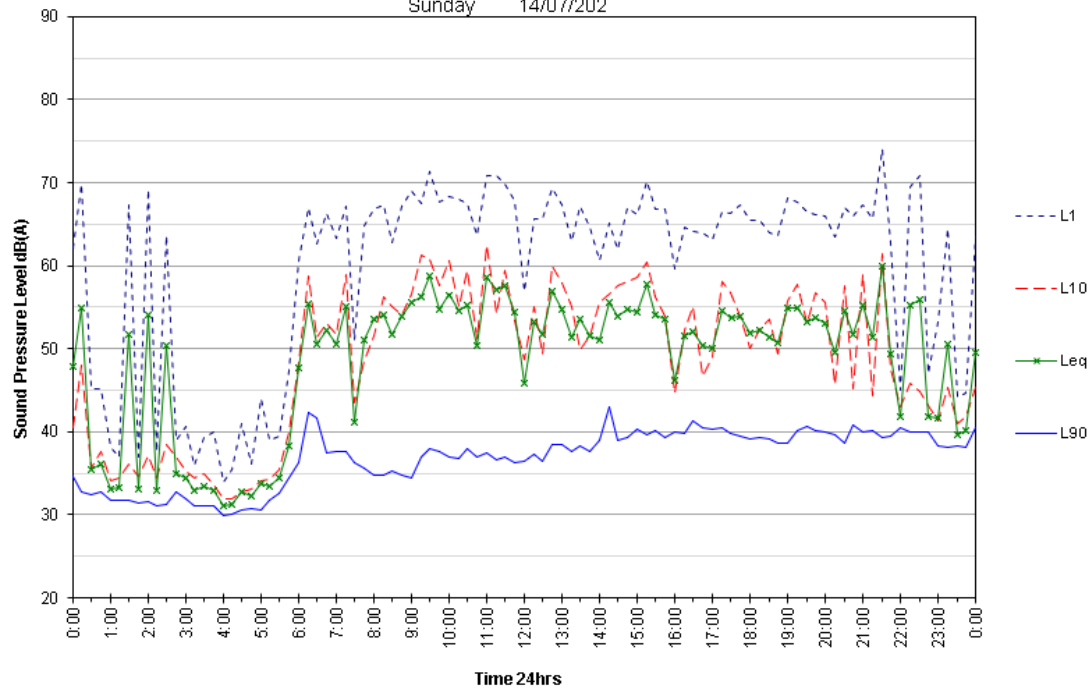
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SCALE As Indicated @ A3 SIZE

11.2 Noise Monitoring Charts





6/341 Macarthur Avenue
Environmental Noise Monitoring
Sunday 14/07/202



6/341 Macarthur Avenue
Environmental Noise Monitoring
Monday 15/07/202

