

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV-2025-NSH-4177

Date: 30/01/2026



acousticworks)))

Proposed Residential Development
Lot 17.2 Hamilton
17 Karakul Road, Hamilton

ACOUSTIC REPORT



Client:

Silverstone Developments
ATTN: Imogen Laracy

Reference:

2025479 R01E Lot 17.2 17 Karakul Road Hamilton ENV
ACN.docx

Date Issued:

15 December 2025

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
03/12/25	R01A	David Dadd	Greg Pearce	GP
04/12/25	R01B	David Dadd	Greg Pearce	GP
04/12/25	R01C	David Dadd	Greg Pearce	GP
15/12/25	R01D	David Dadd	Greg Pearce	GP
17/12/25	R01E	Marco Scoca	Greg Pearce	GP

Disclaimer

Reports produced by Acoustic Works are prepared for a particular Client’s objective and are based on a specific scope, conditions and limitations, as agreed between Acoustic Works and the Client. Under no circumstances shall information and/or report(s) prepared by Acoustic Works be used by other parties other than the Client without first obtaining written permission from Acoustic Works.

TABLE OF CONTENTS

1.Introduction	5
2.Site Description	5
2.1 Site Location	5
2.2 Proposal	6
2.3 Acoustic Environment	6
3.Equipment	6
4.Receivers, Industrial and Noise Monitoring Locations	7
4.1 Receiver Locations.....	7
4.2 Industrial Land Use Locations	8
4.3 Unattended Ambient Noise Monitoring.....	9
4.4 Attended Aircraft Noise Measurements	9
4.5 Attended Offsite Industrial Noise Measurements	9
5.Measured Noise Levels	10
5.1 Meteorological Conditions.....	10
5.2 Ambient Noise Levels.....	10
6.Noise Criteria.....	11
6.1 Brisbane City Council (BCC) - Environmental Noise Criteria.....	11
6.1.1 Intrusive Noise and Acoustic Amenity	11
6.1.2 Night-Time Noise	12
6.1.3 Mechanical Plant.....	13
6.2 Aircraft Noise	13
7.Environmental Assessment	15
7.1 Onsite Activities.....	15
7.2 Offsite Industrial Activities.....	16
8.Aircraft Assessment.....	18
8.1 Attended Aircraft Noise Measurements	18
9.Recommendations.....	19
9.1 Unit Façade Construction	19
9.1.1 Unit Glazing.....	19
9.1.2 Unit Wall Construction.....	19
9.1.3 Unit Roof Construction	19
9.2 Gym Façade Construction.....	20
9.2.1 Gym Glazing.....	20
9.2.2 Gym Wall Construction	20
9.2.3 Gym Roof/Ceiling Construction.....	21
9.2.4 Gym Entry Doors	21
9.4 Onsite Activities.....	22
9.4.1 Onsite Mechanical Plant.....	22
10. Conclusion	23
11. Appendices	24
11.1 Development Plans.....	24
11.2 Noise Monitoring Charts.....	39

TABLE INDEX

<i>Table 1: Meteorological Conditions – Brisbane</i>	10
<i>Table 2: Measured Ambient Noise Levels – All Time Periods</i>	10
<i>Table 3: Noise (Planning) Criteria</i>	11
<i>Table 4: Noise (Planning) Criteria – Multiple Dwelling Code</i>	11
<i>Table 5: Intrusive Noise Criteria</i>	12
<i>Table 6: Acoustic Amenity Criteria</i>	12
<i>Table 7: Night-time Noise Criteria</i>	12
<i>Table 8: Applicable Night-time Noise Criteria</i>	12
<i>Table 9: Applicable Noise Criteria</i>	13
<i>Table 10: Aircraft Noise Internal Criteria</i>	14
<i>Table 11: Average Noise Levels from Site Activities</i>	15
<i>Table 12: Lmax Noise Levels from Site Activities</i>	16
<i>Table 13: Offsite Industrial Noise Levels</i>	16
<i>Table 14: Noise Levels from Offsite Industrial Activities</i>	17
<i>Table 15: Noise Levels from Offsite Industrial Activities (Vaxxas)</i>	17
<i>Table 16: Measured Aircraft Noise Levels</i>	18
<i>Table 17: Glazing Treatments for Aircraft Noise Impacts</i>	19
<i>Table 18: Gym Glazing Treatments</i>	20
<i>Table 19: Gym Wall Construction</i>	20
<i>Table 20: Gym Roof Construction</i>	21
<i>Table 21: Gym Entry Door Construction</i>	21

FIGURE INDEX

<i>Figure 1: Site Location (Not to Scale)</i>	5
<i>Figure 2: Receivers and Noise Monitoring Locations</i>	7
<i>Figure 4: Site Location – ANEF Contour</i>	14

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 17 Karakul Road, Hamilton. To facilitate the assessment, noise monitoring and attended measurements were 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

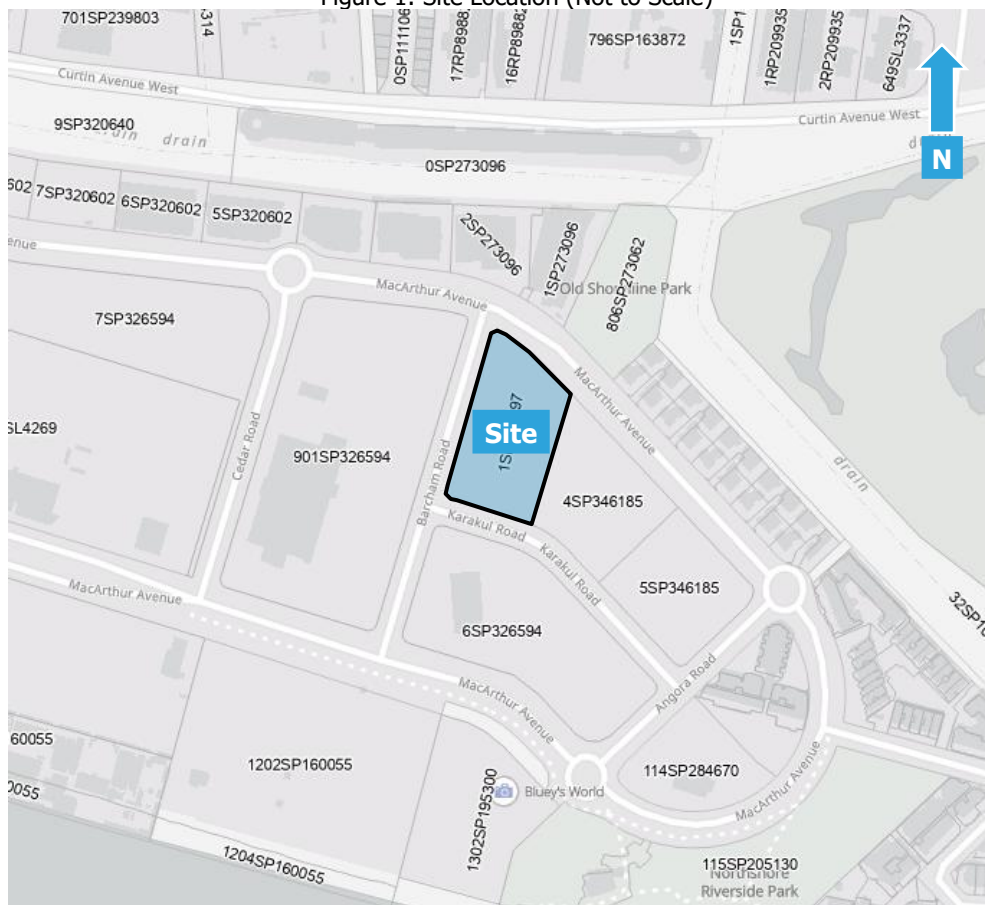
2.1 Site Location

The site is described by the following:

Lot 17.2 Hamilton
17 Karakul Road, Hamilton
Lot 1 on SP337697

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 northeast and across Angora Road to the southeast.

2.2 Proposal

The proposal is to construct two residential apartment buildings as follows:

- Basement:
 - 262 car parking spaces including 23 visitor spaces and bin storage.
- Ground floor:
 - Residential apartments.
 - Indoor and outdoor communal areas, pool, gymnasium, sauna room, steam room, loading area and amenities.
- Levels 1 to 6:
 - Residential apartments.
- Rooftop:
 - External services, internal recreation rooms, roof terrace and barbeque area (south building only).

Refer to the Appendices for development plans.

2.3 Acoustic Environment

The surrounding area is primarily affected local road traffic, commercial/industrial 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. A multi storey residential development is proposed at 330 Macarthur Avenue to the east of the site (emerging community zone).
3. A multi storey residential development is proposed at 260 Macarthur Avenue to the south of the site (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.

Figure 2: Receivers and Noise Monitoring Locations



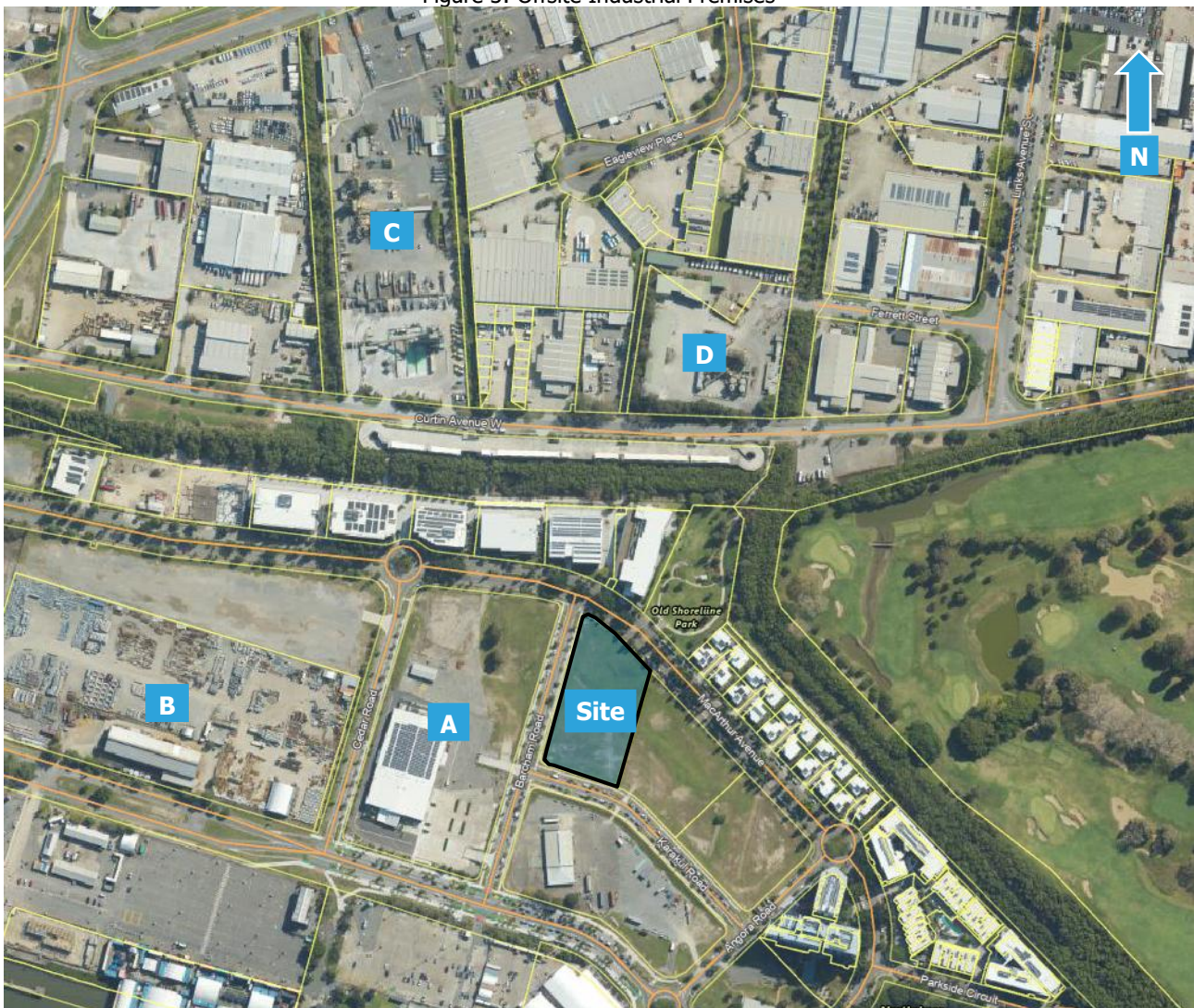
4.2 Industrial Land Use Locations

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 northeast 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)	$L_{eq,9hr \text{ night}} + 5$ dB(A)	$L_{eq,9hr \text{ night}} + 10$ 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 $L_{Aeq,9h \text{ night}}$ 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

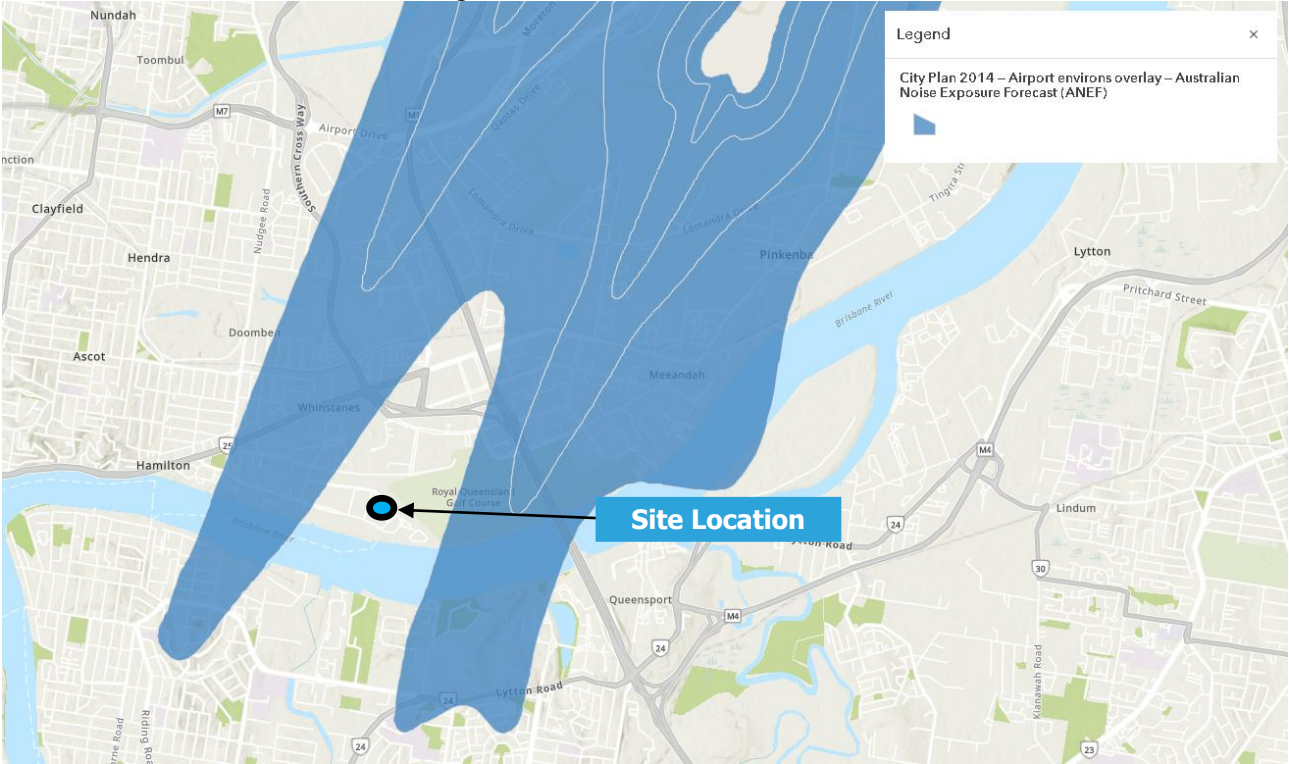
6.2 Aircraft Noise

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	60dB(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

The average maximum 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																						
	1. 341 Macarthur Avenue (NE) 2. 330 Macarthur Avenue (E) 3. 260 Macarthur Avenue (S)																						
	Description	Source @1 m 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	Intrusive Compliance LAeq			Amenity Compliance LAeq		
																		Day	Eve	Night	Day	Eve	Night
1	Criteria																	45	45	41	55	50	45
	Car door closure	75	2	77	200	100	50	2	82			-20		-38.276				Yes	Yes	Yes	Yes	Yes	Yes
	Car passby	69		69	200	100	50	15	82			-20		-38.276				Yes	Yes	Yes	Yes	Yes	Yes
	Car start	74	2	76	200	100	50	2	82			-20		-38.276				Yes	Yes	Yes	Yes	Yes	Yes
	Gym activities	80		80	11	4	9	3600	101			-24		-40.086	16	16	16	Yes	Yes	Yes	Yes	Yes	Yes
	Recreation area - Include pool	78		78	11	4		3600	88					-38.89	39	39		Yes	Yes	n/a	Yes	Yes	n/a
	Rooftop recreation area	75		75	11	4	9	3600	132			-5		-42	28	28	28	Yes	Yes	Yes	Yes	Yes	Yes
	Waste collection	94	2	96	1			240	103			-20		-40.257	14			Yes	n/a	n/a	Yes	Yes	Yes
	Deliveries	85	2	87	1			60	103			-20		-40.257				Yes	n/a	n/a	Yes	n/a	n/a
Total														39	39	28	Yes	Yes	Yes	Yes	Yes	Yes	
2	Criteria																	45	45	41	55	50	45
	Car door closure	75	2	77	200	100	50	2	54			-20		-34.648	2	4		Yes	Yes	Yes	Yes	Yes	Yes
	Car passby	69			200	100	50	15	54			-20		-34.648				Yes	Yes	Yes	Yes	Yes	Yes
	Car start	74	2	76	200	100	50	2	54			-20		-34.648	1	3		Yes	Yes	Yes	Yes	Yes	Yes
	Gym activities	80		80	11	4	9	3600	74			-24		-37.385	19	19	19	Yes	Yes	Yes	Yes	Yes	Yes
	Recreation area - Include pool	78		78	11	4		3600	46					-33.255	45	45		Yes	Yes	n/a	Yes	Yes	n/a
	Rooftop recreation area	75		75	11	4	9	3600	76			-5		-38	32	32	32	Yes	Yes	Yes	Yes	Yes	Yes
	Waste collection	94	2	96	1			240	85			-15		-39	20			Yes	n/a	n/a	Yes	Yes	Yes
	Deliveries	85	2	87	1			60	85			-15		-39	5			Yes	n/a	n/a	Yes	n/a	n/a
Total														45	45	32	Yes	Yes	Yes	Yes	Yes	Yes	
3	Criteria																	45	45	41	55	50	45
	Car door closure	75	2	77	200	100	50	2	78			-20		-37.842				Yes	Yes	Yes	Yes	Yes	Yes
	Car passby	69			200	100	50	15	78			-20		-37.842				Yes	Yes	Yes	Yes	Yes	Yes
	Car start	74	2	76	200	100	50	2	78			-20		-37.842				Yes	Yes	Yes	Yes	Yes	Yes
	Gym activities	80		80	11	4	9	3600	85			-24		-38.588	17	17	17	Yes	Yes	Yes	Yes	Yes	Yes
	Recreation area - Include pool	78		78	11	4		3600	71			-20		-37.025	21	21		Yes	Yes	n/a	Yes	Yes	n/a
	Rooftop recreation area	75		75	11	4	9	3600	40			-5		-32	38	38	38	Yes	Yes	Yes	Yes	Yes	Yes
	Waste collection	94			1			240	99			-20		-39.913				Yes	n/a	n/a	Yes	Yes	Yes
	Deliveries	85	2	87	1			60	99			-20		-39.913				Yes	n/a	n/a	Yes	n/a	n/a
Total														38	38	38	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.

7.1.2 Night-time Noise

The maximum noise source levels were determined based on onsite measurements and previous assessments of similar activities.

Table 12: Lmax Noise Levels from Site Activities

Receiver	Receivers											LAMax Compliance
	1. 341 Macarthur Avenue (NE) 2. 330 Macarthur Avenue (E) 3. 260 Macarthur Avenue (S)											
	Description	Source @1m dB(A)	Correction dB(A)*	Corrected dB(A)	Distance (m)	No Barrier (height (m))	Barrier screening dB	Building TL or shield dB	Room Correction dB	Dist atten. @-6dB/dd	Absolute Lmax dBA	
1	Criteria										60	
	Car door closure	82	2	84	82		-20			-38.276	35	Yes
	Car passby	76		76	82		-20			-38.276	27	Yes
	Car start	81	2	83	82		-20			-38.276	34	Yes
	Gym activities	87		87	101		-24			-40.086	32	Yes
	Rooftop recreation area	82		82	132		-5			-42	44	Yes
	Total										48	Yes
2	Criteria										60	
	Car door closure	82	2	84	54		-20			-34.648	38	Yes
	Car passby	76		76	54		-20			-34.648	30	Yes
	Car start	81	2	83	54		-20			-34.648	37	Yes
	Gym activities	87		87	74		-24			-37.385	35	Yes
	Rooftop recreation area	82		82	76		-5			-38	48	Yes
	Total										54	Yes
3	Criteria										60	
	Car door closure	82	2	84	78		-20			-37.842	35	Yes
	Car passby	76		76	78		-20			-37.842	27	Yes
	Car start	81	2	83	78		-20			-37.842	34	Yes
	Gym activities	87		87	85		-24			-38.588	33	Yes
	Rooftop recreation area	82		82	40		-5			-32	54	Yes
	Total										54	Yes

*Correction due to tonality and impulsiveness as per AS1055:2018.

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

7.2 Offsite Industrial Activities

Table 13 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 13: Offsite Industrial Noise Levels

Attended Noise Monitoring Location	Activity	Measured LAeq Noise Levels	Measured LAMAX Noise Levels	Measurement Distance from Source (m)	Measured LAeq Corrected to 1m	Measured LAMAX Corrected to 1m
C.P. Plating (eastern boundary)	Loading/unloading trucks with forklift	54	69	51	89	103
Vaxxas (eastern boundary)	Mechanical plant	55	68	79	93	106
Boral Concrete and Boral Asphalt (southern boundary)	Trucks entering and existing, conveyor belt, silo and car movements	67	81	29	96	111
Brisbane Cityworks (southern boundary)	Trucks entering and existing	67	87	10	87	107

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, Acoustic Amenity & Night Time L_{max}

The industrial noise source levels and predicted impacts at the nearest onsite unit are shown in Table 14 as follows. The maximum noise source levels were determined based on onsite attended measurements specified in Table 13.

Table 14: Noise Levels from Offsite Industrial Activities

Receiver	Source																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
----------	--------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

*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 15: Noise Levels from Offsite Industrial Activities (Vaxxas)

Source	Source																								LAMax Compliance									
	1. Vaxxas Biomedical Facility	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	Source AbsL _{max} -Leq dB	Source AbsL _{max} -Leq dB	Leq adj.1 Text. dB(A) Day	Leq adj.1 Text. dB(A) Eve	Leq adj.1 Text. dB(A) Night	Average L _{max} dBA	Absolute L _{max} dBA	Intrusive Compliance LAeq				Amenity Compliance LAeq								
																						Day	Eve	Night		Day	Eve	Night						
	Description																																	
1	Criteria																					45	45	41	55	50	45	60						
	Car door closure	75	2	77	200	100	50	2	91					-39	6	9	18	13	19	44	47	Yes	Yes	Yes	Yes	Yes	Yes	Yes						
	Car passby	69		69	200	100	50	15	91					-39	6	9	19	14	20	45	8	Yes	Yes	Yes	Yes	Yes	Yes							
	Car start	74	2	76	200	100	50	2	91					-39	6	9	17	12	18	13	12	7	Yes	Yes	Yes	Yes	Yes							
	Truck manoeuvring	86		86	50	25	10	30	82					-38	6	9	34	29	35	30	27	22	54	Yes	Yes	Yes	Yes							
	Truck reverse	92	2	94	50	25	10	30	82					-38	6	9	42	37	43	38	35	30	62	Yes	Yes	Yes	No							
	Truck passby	82		82	50	25	10	30	82					-38	6	9	30	25	31	26	24	19	50	Yes	Yes	Yes	Yes							
	Forklift loading/unloading	82		82	50	25	10	240	82					-38	6	9	39	34	40	35	32	27	50	Yes	Yes	Yes	Yes							
	Forklift reverse	89	2	91	50	25	10	30	82					-38	6	9	39	34	40	35	32	27	59	Yes	Yes	Yes	No							
	Deliveries	85	2	87	1		60	82						-38	7	9	21	16			56	58	Yes	n/a	n/a	Yes	Yes							
	Waste collection (collection of industrial waste bin)	93		93	1		40	82						-38	6	9	25	20			61	64	Yes	n/a	n/a	Yes	No							
	Total																				45	40	46	41	39	62	65	Yes	No	n/a	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. This is on the condition the recommendations in Section 9 are implemented, which are predicted to provide a 25dB reduction from outside to inside.

Compliance with EPP 2019 Acoustic Quality Objectives is predicted for both living (criteria 35dB(A)) and sleeping (criteria of 30dB(A)), with the predicted internal noise level of 20dB for the day and evening and 14dB(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 16.

Table 16: 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 75.9dBA 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 17, 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 17: Glazing Treatments for Aircraft Noise Impacts

Level	Location		Rw Rating	Glazing	Acoustic Seals
	Unit	Room			
G to 5	Northern Building Units	Living Kitchen Dining	31	6.38mm laminated	yes
		Bedrooms	34	10.38mm laminated	yes
	Southern Building Units	Living Kitchen Dining	31	6.38mm laminated	yes
		Bedrooms	34	10.38mm laminated	yes
6	Northern Building Units	Living Kitchen Dining	31	6.38mm laminated	yes
		Bedrooms	34	10.38mm laminated	yes
	Southern Building Units	Living Kitchen Dining	31	6.38mm laminated	yes
		Bedrooms	34	10.38mm laminated	yes

Any locations not identified in the Table 17 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, 90mm timber stud with 75mm glasswool batts (density 11kg/m³) and 2 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 Gym Façade Construction

9.2.1 Gym Glazing

The minimum glazing treatments presented in Table 18 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 18: Gym Glazing Treatments

Location	R_w Ratings			Glazing Thickness	Acoustic Seals
	Wall	Roof	Glazing		
Gym	35	35	31	6.38mm	Yes

9.2.2 Gym Wall Construction

The wall 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: Gym 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 Gym Roof/Ceiling Construction

The roof/ceiling construction recommendations are included in Table 20 below. Note that these are not the only allowable methods of construction for the development, and alternative constructions to achieve the required Rw ratings may also be provided.

Table 20: Gym Roof Construction

Roof Rw	Minimum Roof Treatments
35	Sheet metal roof backed with anticon insulation, plasterboard ceiling at least 13mm thick fixed to ceiling grid with 50mm fibreglass insulation in the resulting cavity.

9.2.4 Gym Entry Doors

Table 21: Gym Entry Door Construction

Door Rw	Minimum Gym 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 Alternative Ventilation

We recommend that the proposed gym and units presented in Table 17 have the provision for an alternative ventilation system similar to air-conditioning or mechanical ventilation to allow doors and windows to be closed and compliance with AS3671 and NCC requirements.

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 shall be limited to the day and evening periods, between 7am and 10pm.
- All gym doors and windows are to be closed during operation.
- Deliveries and waste collection shall be limited to the daytime period, between 7am and 6pm.
- Amplified music within the gym is to be limited to 80dB(A) measured at 1 metre from the speaker.
- 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

Based on the predicted noise levels and subjective assessment of the site and surrounds, noise impacts at the nearest onsite receiver locations are predicted to comply with the assessment criteria. 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.

10. Conclusion

An aircraft and environmental noise assessment was conducted for the proposed residential development to be located at 17 Karakul Road, Hamilton. The development is predicted to satisfy all the relevant noise assessment requirements on the condition that the recommendations in Section 9 are implemented.

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

Report Prepared By



David Dadd (B. Applied Sc., MAAS)

Acoustic Consultant

acousticworks)))

11. Appendices

11.1 Development Plans

MEANJIN | LOT 17 STREET NAME, HAMILTON, QLD 4007

725046SILVERSTONE-HAMILTON

* **Gross Floor Area (GFA)** is calculated as per Brisbane City Council (BCC) definition and includes internally enclosed spaces such as circulation spaces, apartment areas and common areas including recreation space. Calculation excludes landscaped planters, balconies, vertical spaces and circulation including lift cores and stair wells. Also excluded are basement areas located below natural ground line and areas on grade for the purposes of manoeuvring and parking vehicles, plant and mechanical areas.

* **Plot ratio** - Ratio of the gross floor area of a building on a site to the area of the site.
Where the development includes dedication of land to be for a new roadway, the site area for calculating the plot ratio does not include the land to be dedicated for the new roadway.

Outdoor Amenities - Includes Landscaping and Courtyard

PLUS STUDIO

DA002 | DEVELOPMENT APPLICATION

SCALE @ A3 SIZE

MEANJIN | LOT 17 STREET NAME: HAMILTON, OLD 4003

DIAGRAMS & ANALYSIS



SILVERSTONE-HAMILTON



SILVERSTONE-HAMILTON



PLUS STUDIO



PLUS STUDIO

DA600 | DEVELOPMENT APPLICATION

SCALE 1:1000 @ A3 SIZE

MEANING LOT STREET NAME HAMILTON OLD 4007

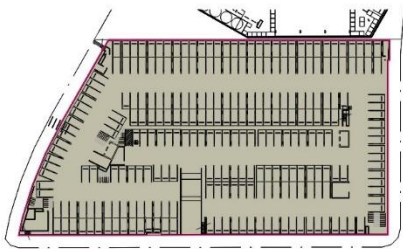
72048

SILVERSTONE HAMILTON

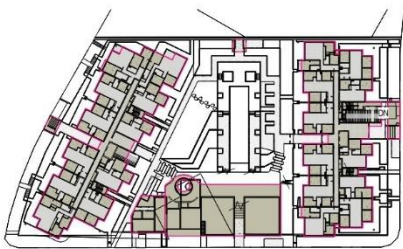
PLUSSTUDIO

DIAGRAMS & ANALYSIS

AREA PLANS - SITE COVER



1 SITE COVER - BASEMENT 01
SCALE 1:1000 @ A3



2 SITE COVER - GROUND LEVEL
SCALE 1:1000 @ A3



3 SITE COVER - LEVEL 01-06
SCALE 1:1000 @ A3



4 SITE COVER - ROOFTOP
SCALE 1:1000 @ A3

SITE COVER - BASEMENT		
SITE AREA REMAINING	1056.2 m²	13%
SITE COVER	6923.6 m²	87%

SITE COVER - GROUND		
SITE AREA REMAINING	4495.5 m²	56%
SITE COVER	3471.7 m²	44%

SITE COVER - LEVEL 01-06		
SITE AREA REMAINING	4774.7 m²	60%
SITE COVER	3205.1 m²	40%

SITE COVER - ROOFTOP		
SITE AREA REMAINING	7265.5 m²	92%
SITE COVER	624.0 m²	8%

PLUSSTUDIO

DA602 | DEVELOPMENT APPLICATION

SCALE 1:1000 @ A3 SIZE

MEANING LOT STREET NAME HAMILTON OLD 4007

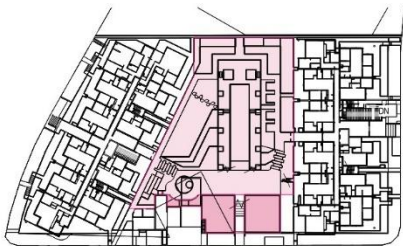
72048

SILVERSTONE HAMILTON

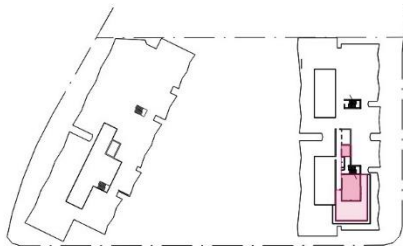
PLUSSTUDIO

DIAGRAMS & ANALYSIS

AREA PLANS - COMMUNAL SPACE



1 COMMUNAL OPEN SPACE - GROUND LEVEL
SCALE 1:1000 @ A3



2 COMMUNAL OPEN SPACE - ROOFTOP
SCALE 1:1000 @ A3

COMMUNAL SPACE		
GROUND LEVEL	COMMUNAL EXTERNAL	2000.6 m²
GROUND LEVEL	COMMUNAL INTERNAL	312.8 m²
ROOF - T1	COMMUNAL EXTERNAL	181.1 m²
ROOF - T1	COMMUNAL INTERNAL	67.9 m²
		2562.3 m²

PLUSSTUDIO

DA603 | DEVELOPMENT APPLICATION

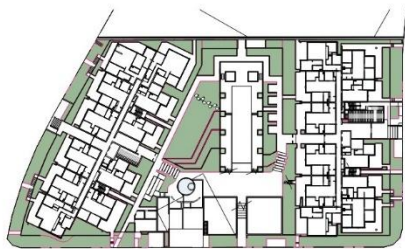
SCALE 1:1000 @ A3 SIZE

DIAGRAMS & ANALYSIS

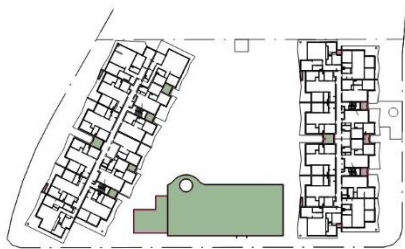
AREA PLANS - LANDSCAPE

PLUS
STUDIO

LANDSCAPE AREA	
GROUND LEVEL	2477.0m²
LEVEL 01	699.4m²
LEVEL 02	67.4m²
LEVEL 03	67.4m²
LEVEL 04	67.4m²
LEVEL 05	67.4m²
LEVEL 06	67.4m²
ROOF - T1	277.1m²
	5641.1m²



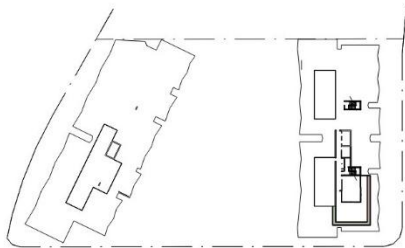
1 LANDSCAPE - GROUND LEVEL
SCALE 1:1000 @ A3



2 LANDSCAPE - LEVEL 01
SCALE 1:1000 @ A3



3 LANDSCAPE - LEVEL 02-06
SCALE 1:1000 @ A3



4 LANDSCAPE - ROOFTOP
SCALE 1:1000 @ A3

DA604 | DEVELOPMENT APPLICATION

SCALE 1:1000 @ A3 SIZE

FLOOR PLANS - BASEMENT

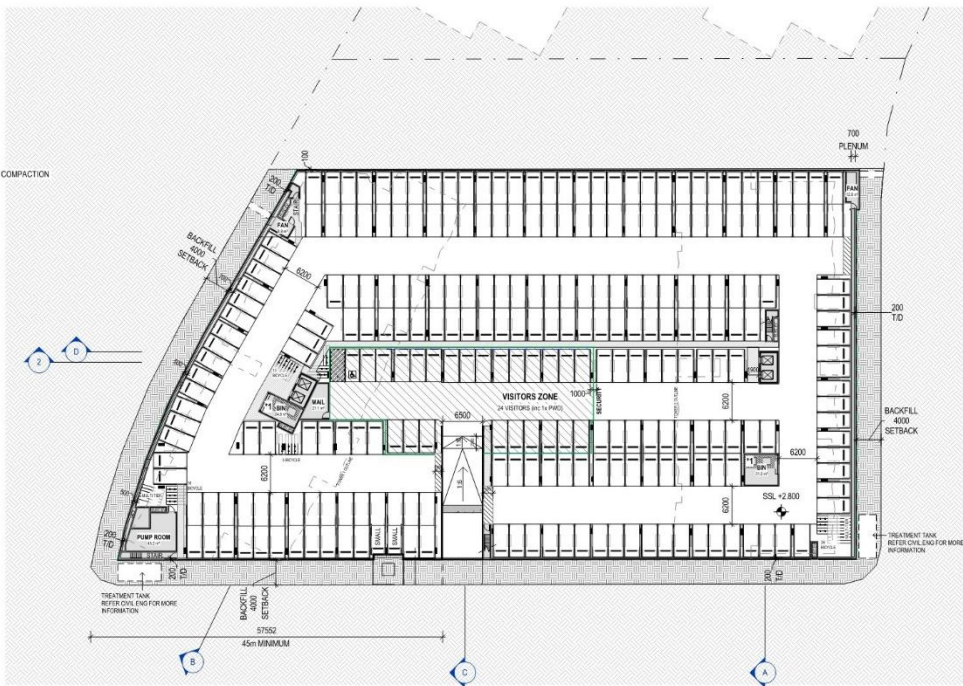
PLUS
STUDIO

CAR SCHEDULE

VISITOR	1 = 23
PWD	1 = 1
RESIDENTS	
TANDEM	1 = 140
STANDARD	1 = 66
SMALL CAR	1 = 2

GRAND TOTAL 1 = 262

NOTE:
"1" = DUAL REFUSE CHUTE 3:1 COMPACTION
TO GENERAL WASTE ONLY"



DA099 | DEVELOPMENT APPLICATION

SCALE 1:500 @ A3 SIZE

MEANLIN | LOT 17 STREET NAME, HAMILTON, OLD 4007



SILVERSTONE • HAMILTON

PLUS STUDIO

DA100 | DEVELOPMENT APPLICATION

SCALE 1:500 @ A3 SIZE

MEANJIN | LOT 17 STREET NAME, HAMILTON, OLD 4007



SILVERSTONE-HAMILTON

PLUS STUDIO

DA101 | DEVELOPMENT APPLICATION

SCALE 1:500 @ A3 SIZE

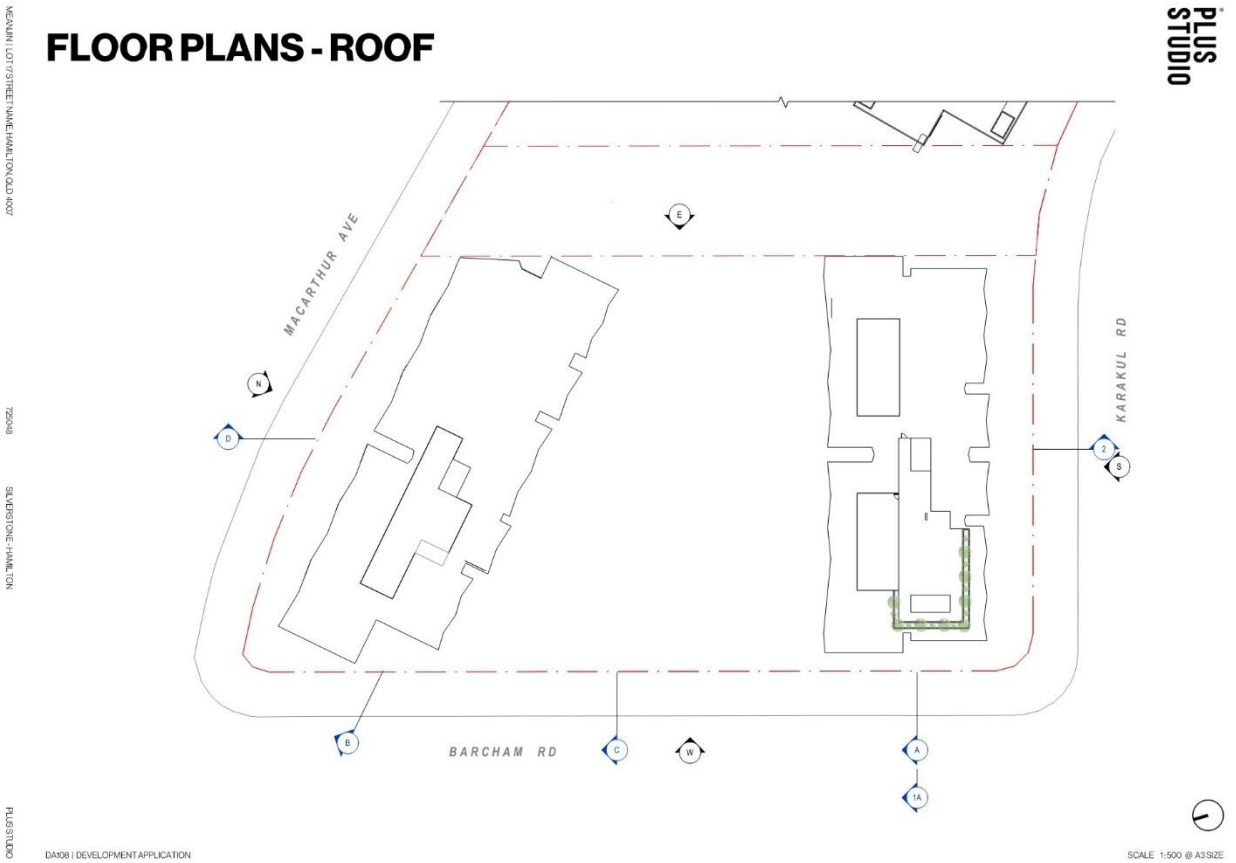
FLOOR PLANS - LEVEL 02-06



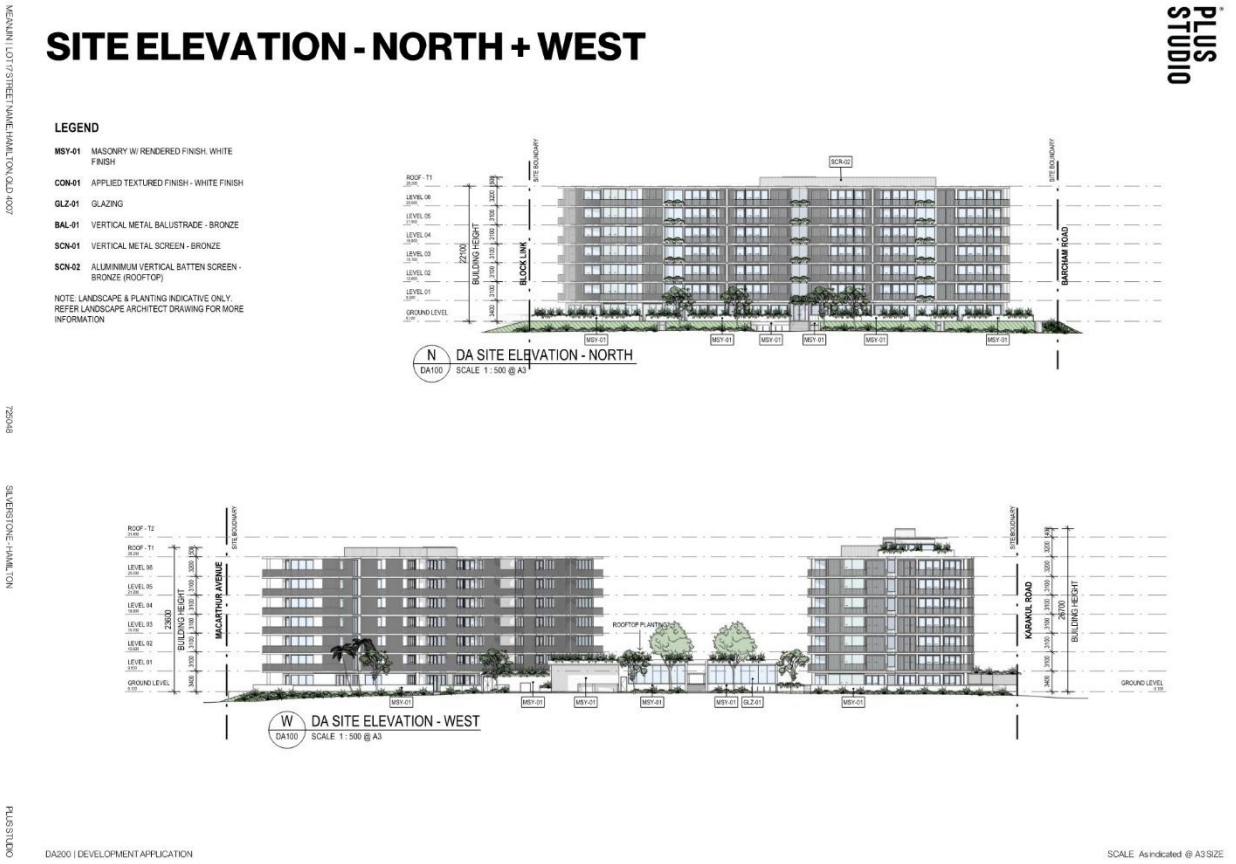
FLOOR PLANS - ROOFTOP



FLOOR PLANS - ROOF

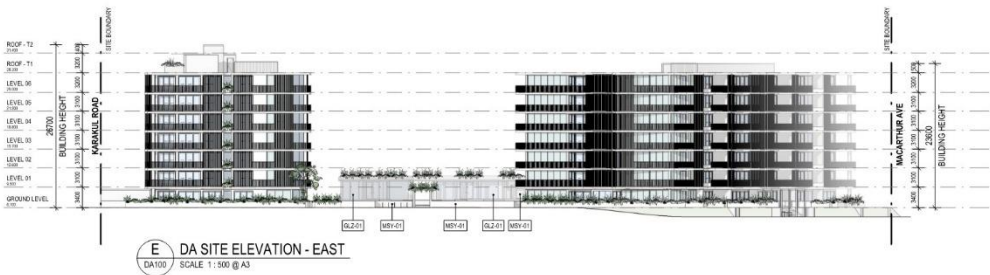


SITE ELEVATION - NORTH + WEST



SITE ELEVATION - SOUTH + EAST

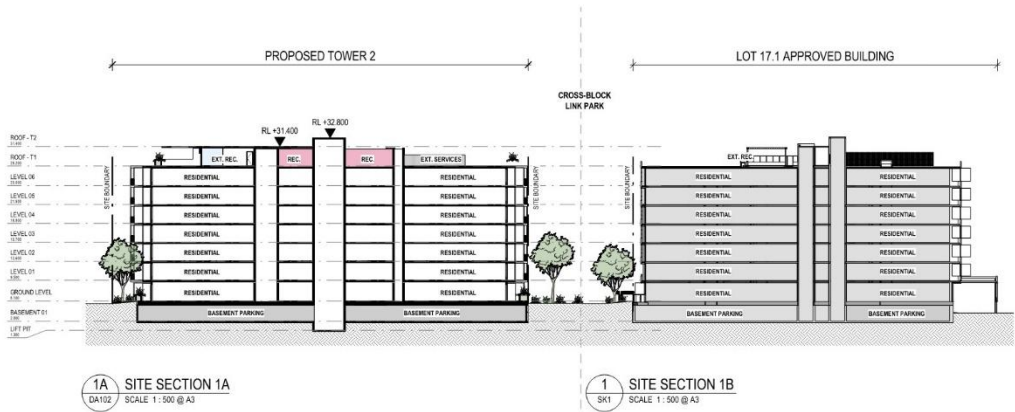
- LEGEND
- MSY-01 MASONRY W/ RENDERED FINISH - WHITE FINISH
 - CON-01 APPLIED TEXTURED FINISH - WHITE FINISH
 - GLZ-01 GLAZING
 - BAL-01 VERTICAL METAL BALUSTRADE - BRONZE
 - SCN-01 VERTICAL METAL SCREEN - BRONZE
 - SCN-02 ALUMINUM VERTICAL BATTEN SCREEN - BRONZE (ROOFTOP)
- NOTE: LANDSCAPE & PLANTING INDICATIVE ONLY. REFER LANDSCAPE ARCHITECT DRAWING FOR MORE INFORMATION



DA201 | DEVELOPMENT APPLICATION

SCALE: As indicated @ A3 SIZE

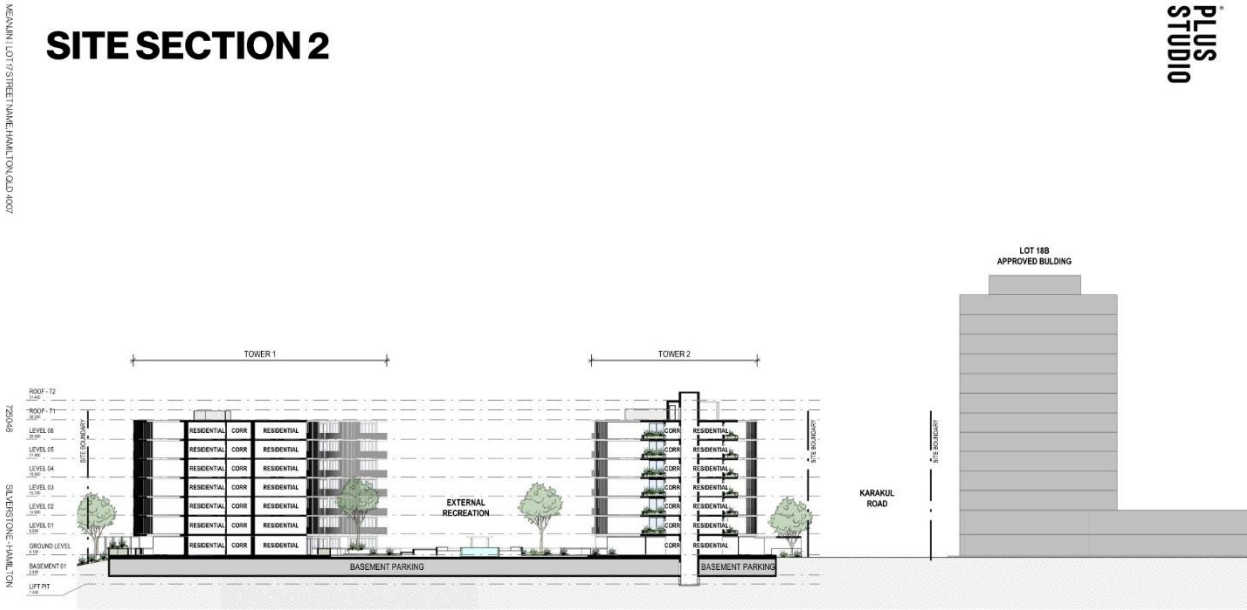
SITE SECTION 1



DA224 | DEVELOPMENT APPLICATION | ISSUE 11 20 NOV 2025

SCALE: 1:500 @ A3 SIZE

SITE SECTION 2



PLUSSTUDIO

DA225 | DEVELOPMENT APPLICATION | ISSUE 1 | 20 NOV 2025

SCALE 1:500 @ A3 SIZE

BUILDING ELEVATION - TOWER 01 - NORTH

LEGEND

- MSY-01 MASONRY W/ RENDERED FINISH - WHITE FINISH
- CON-01 APPLIED TEXTURED FINISH - WHITE FINISH
- GLZ-01 GLAZING
- BAL-01 VERTICAL METAL BALUSTRADE - BRONZE
- SCN-01 VERTICAL METAL SCREEN - BRONZE
- SCN-02 ALUMINUM VERTICAL BATTEN SCREEN - BRONZE (ROOFTOP)

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

MEANINI LOT 17 STREET NAME HAMILTON QLD 4007



PLUSSTUDIO

DA2200 | DEVELOPMENT APPLICATION

SCALE As indicated @ A3 SIZE

BUILDING ELEVATION - TOWER 01 - WEST

- LEGEND
- MSY-01 MASONRY W/ RENDERED FINISH - WHITE FINISH
 - CON-01 APPLIED TEXTURED FINISH - WHITE FINISH
 - GLZ-01 GLAZING
 - BAL-01 VERTICAL METAL BALUSTRADE - BRONZE
 - SCN-01 VERTICAL METAL SCREEN - BRONZE
 - SCN-02 ALUMINUM VERTICAL BATTEN SCREEN - BRONZE (ROOFTOP)
- NOTE: LANDSCAPE & PLANTING INDICATIVE ONLY. REFER LANDSCAPE ARCHITECT DRAWING FOR MORE INFORMATION.



N.W DA BUILDING ELEVATION - TOWER 1 - WEST
SCALE 1:200 @ A3

DA1201 | DEVELOPMENT APPLICATION

SCALE As indicated @ A3 SIZE

BUILDING ELEVATION - TOWER 01 - SOUTH

- LEGEND
- MSY-01 MASONRY W/ RENDERED FINISH - WHITE FINISH
 - CON-01 APPLIED TEXTURED FINISH - WHITE FINISH
 - GLZ-01 GLAZING
 - BAL-01 VERTICAL METAL BALUSTRADE - BRONZE
 - SCN-01 VERTICAL METAL SCREEN - BRONZE
 - SCN-02 ALUMINUM VERTICAL BATTEN SCREEN - BRONZE (ROOFTOP)
- NOTE: LANDSCAPE & PLANTING INDICATIVE ONLY. REFER LANDSCAPE ARCHITECT DRAWING FOR MORE INFORMATION.



N.S DA BUILDING ELEVATION - TOWER 1 - SOUTH
SCALE 1:200 @ A3

DA1202 | DEVELOPMENT APPLICATION

SCALE As indicated @ A3 SIZE

BUILDING ELEVATION - TOWER 01 - EAST

LEGEND

- MSY-01 MASONRY W/ RENDERED FINISH - WHITE FINISH
- CON-01 APPLIED TEXTURED FINISH - WHITE FINISH
- GLZ-01 GLAZING
- BAL-01 VERTICAL METAL BALUSTRADE - BRONZE
- SCN-01 VERTICAL METAL SCREEN - BRONZE
- SCN-02 ALUMINUM VERTICAL BATTEN SCREEN - BRONZE (ROOFTOP)

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



N.E DA BUILDING ELEVATION - TOWER 1 - EAST
SCALE 1:200 @ A3

DA203 | DEVELOPMENT APPLICATION

SCALE As indicated @ A3 SIZE

BUILDING ELEVATION - TOWER 02 - NORTH

LEGEND

- MSY-01 MASONRY W/ RENDERED FINISH - WHITE FINISH
- CON-01 APPLIED TEXTURED FINISH - WHITE FINISH
- GLZ-01 GLAZING
- BAL-01 VERTICAL METAL BALUSTRADE - BRONZE
- SCN-01 VERTICAL METAL SCREEN - BRONZE
- SCN-02 ALUMINUM VERTICAL BATTEN SCREEN - BRONZE (ROOFTOP)

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



S.N DA BUILDING ELEVATION - SOUTH BUILDING - NORTH
SCALE 1:200 @ A3

DA2200 | DEVELOPMENT APPLICATION

SCALE As indicated @ A3 SIZE

BUILDING ELEVATION - TOWER 02 - WEST

- LEGEND
- MSY-01 MASONRY W/ RENDERED FINISH - WHITE FINISH
 - CON-01 APPLIED TEXTURED FINISH - WHITE FINISH
 - GLZ-01 GLAZING
 - BAL-01 VERTICAL METAL BALUSTRADE - BRONZE
 - SCN-01 VERTICAL METAL SCREEN - BRONZE
 - SCN-02 ALUMINUM VERTICAL BATTEN SCREEN - BRONZE (ROOFTOP)
- NOTE: LANDSCAPE & PLANTING INDICATIVE ONLY. REFER LANDSCAPE ARCHITECT DRAWING FOR MORE INFORMATION.



DA2202 | DEVELOPMENT APPLICATION

SCALE As indicated @ A3 SIZE

BUILDING ELEVATION - TOWER 02 - SOUTH

- LEGEND
- MSY-01 MASONRY W/ RENDERED FINISH - WHITE FINISH
 - CON-01 APPLIED TEXTURED FINISH - WHITE FINISH
 - GLZ-01 GLAZING
 - BAL-01 VERTICAL METAL BALUSTRADE - BRONZE
 - SCN-01 VERTICAL METAL SCREEN - BRONZE
 - SCN-02 ALUMINUM VERTICAL BATTEN SCREEN - BRONZE (ROOFTOP)
- NOTE: LANDSCAPE & PLANTING INDICATIVE ONLY. REFER LANDSCAPE ARCHITECT DRAWING FOR MORE INFORMATION.



DA2202 | DEVELOPMENT APPLICATION

SCALE As indicated @ A3 SIZE

BUILDING ELEVATION - TOWER 02 - EAST

- LEGEND
- MSY-01 MASONRY W/ RENDERED FINISH - WHITE FINISH
 - CON-01 APPLIED TEXTURED FINISH - WHITE FINISH
 - GLZ-01 GLAZING
 - BAL-01 VERTICAL METAL BALUSTRADE - BRONZE
 - SCN-01 VERTICAL METAL SCREEN - BRONZE
 - SCN-02 ALUMINUM VERTICAL BATTEN SCREEN - BRONZE (ROOFTOP)
- NOTE: LANDSCAPE & PLANTING INDICATIVE ONLY. REFER LANDSCAPE ARCHITECT DRAWING FOR MORE INFORMATION.

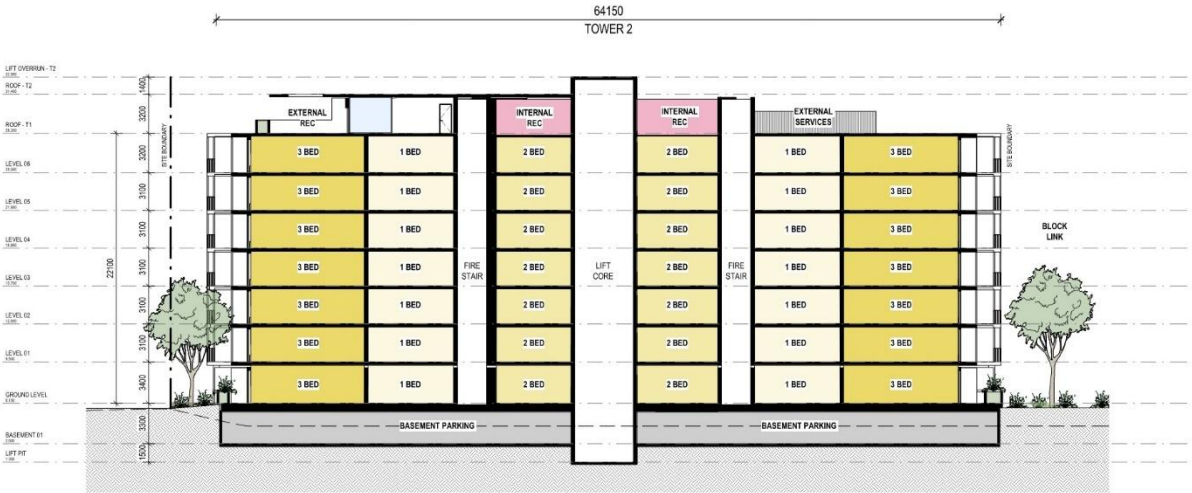


S.E. DA BUILDING ELEVATION - TOWER 2 - EAST
SCALE 1:200 @ A3

DA2203 | DEVELOPMENT APPLICATION

SCALE As indicated @ A3 SIZE

SECTION A



DA220 | DEVELOPMENT APPLICATION | ISSUE 11 20 NOV 2025

SCALE 1:250 @ A3 SIZE

SECTION B

PLUS
STUDIO

MEANING LOT 17 STREET NAME HAMILTON QLD 4007

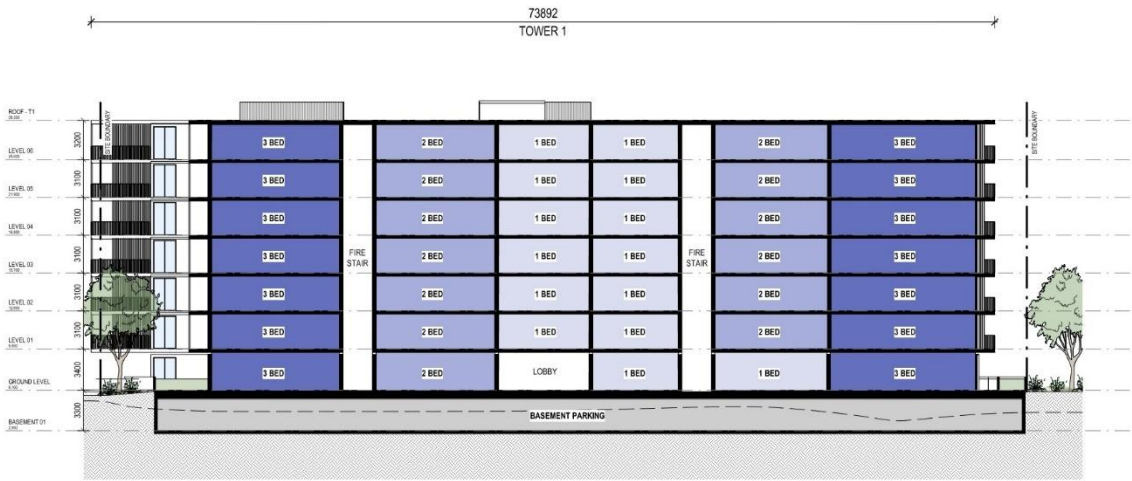
725048

SILVERSTONE-HAMILTON

PLUSSTUDIO

DA221 | DEVELOPMENT APPLICATION | ISSUE 1 | 20 NOV 2025

SCALE 1:250 @ A3 SIZE



SECTION C

PLUS
STUDIO

MEANING LOT 17 STREET NAME HAMILTON QLD 4007

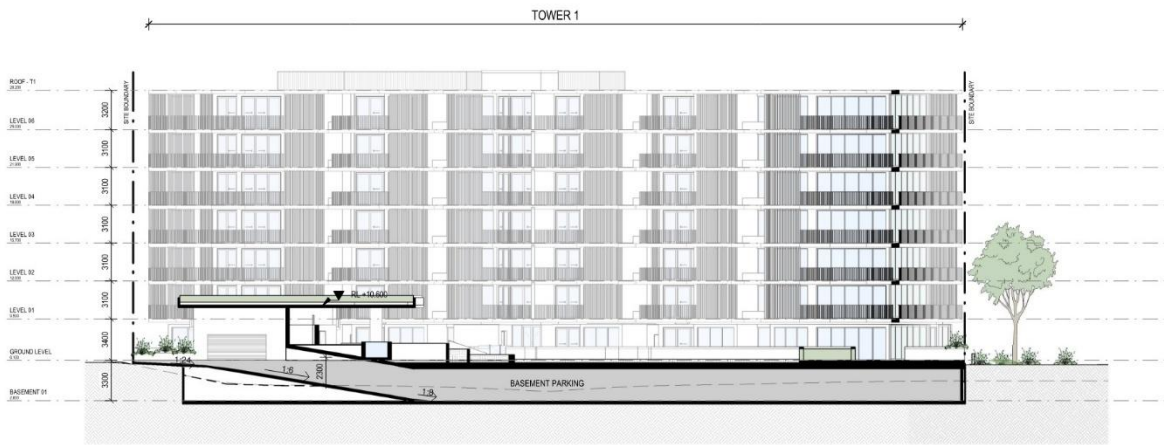
725048

SILVERSTONE-HAMILTON

PLUSSTUDIO

DA222 | DEVELOPMENT APPLICATION | ISSUE 1 | 20 NOV 2025

SCALE 1:250 @ A3 SIZE



SECTION D

MEANIN LOT 17 STREET NAME HAMILTON OLD 4007

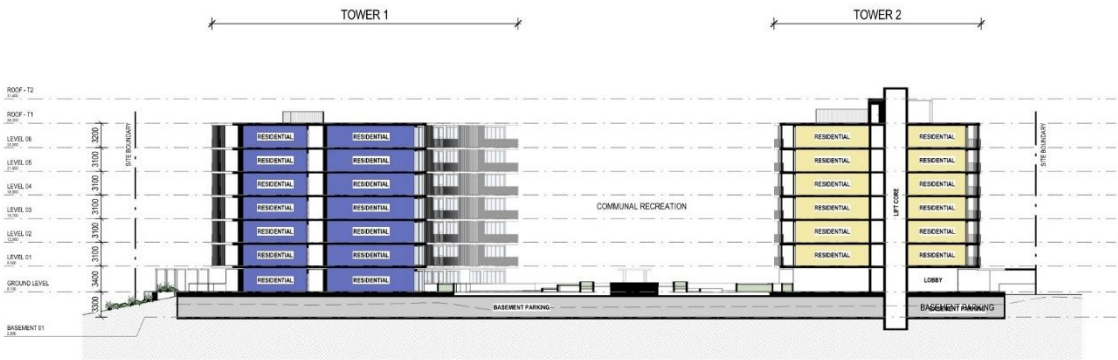
72048

SILVERSTONE-HAMILTON

PLUSSTUDIO

DA223 | DEVELOPMENT APPLICATION | ISSUE 1 | 20 NOV 2025

SCALE 1:400 @ A3 SIZE



MATERIAL SCHEDULE

MEANIN LOT 17 STREET NAME HAMILTON OLD 4007

72048

SILVERSTONE-HAMILTON

PLUSSTUDIO

DA800 | DEVELOPMENT APPLICATION

- LEGEND
- MSY-01 MASONRY W/ RENDERED FINISH - WHITE FINISH
 - CON-01 APPLIED TEXTURED FINISH - WHITE FINISH
 - GLZ-01 GLAZING
 - BAL-01 VERTICAL METAL BALUSTRADE - BRONZE
 - SCN-01 VERTICAL METAL SCREEN - BRONZE
 - SCN-02 ALUMINUM VERTICAL BATTEN SCREEN - BRONZE (ROOF PLANT)



SCALE 1:100 @ A3 SIZE

11.2 Noise Monitoring Charts

