



REPORT

Acoustics

Sunshine Coast Airport - North Precinct Masterplan Acoustics
Sunshine Coast Airport

CONFIDENTIAL

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1 EXECUTIVE SUMMARY

This document covers the acoustic design items of the proposed Sunshine Coast Airport North Precinct Masterplan. The North Precinct features several varying uses and is located next to areas of high noise levels, including the airport runway (to the south and southeast) and traffic noise along David Low Way (to the northeast). Existing residential receivers were also identified along and close to the eastern boundary of the site which would be sensitive to any noise emissions from the development.

Both noise intrusion into the site and noise emissions from the site have been outlined within this document and compared against the relevant legislative criteria applicable to the site. Recommendations have been made to ensure that the development can meet all relevant acoustic criteria. Key recommendations are as follows:

- Noise mitigation measures may be required along the eastern boundary with the sensitive residential receivers. This will depend on the ultimate land uses along the eastern boundary and location/distance from any sensitive receivers.
- Activities and equipment which generate high noise levels (e.g. large outdoor HVAC equipment or industrial uses which generate significant noise) are recommended to be located toward the western side of the site.
- If habitable rooms or private open spaces are located at ground level of the buildings with accommodation close to David Low Way, noise barriers may be required to reduce traffic noise. These do not need to be located along the boundary but are required to block noise to the ground level habitable rooms or private open spaces of these buildings.
- Some considerations are also required to account for noise intrusion from aircraft noise present at high angles due to airport activities. These include:
 - HVAC systems of the buildings on the site may need to be considered and additional acoustic treatments installed to account for aircraft noise
 - Roof constructions of buildings may need to be increased above what would be typical for buildings of a similar use not located around aircraft flight paths

Note that these are highly dependent on the exact use and location of the buildings on the site. The actual approach to acoustic mitigation is to be further evaluated at the Development Application stage.

2 SITE DESCRIPTION

The Sunshine Coast Airport North Precinct is located to the northeastern corner of the larger Sunshine Coast Airport PDA. The location of the North Precinct relative to the other precincts at Sunshine Coast Airport is shown in Figure 1.



FIGURE 1: PRECINCT PLAN, WITH NORTH PRECINCT (5A AND 5B) SHOWN SHADED IN RED AND SECTION OF DAVID LOW WAY TO EAST OF SITE SHOWN IN BLUE

The North Precinct is bounded by other Sunshine Coast Airport areas to the west and south (including the main runway to the south), a Community Facilities Zone to the north, and a mixture of Low Density Residential, Tourist

Accommodation, and a Local Centre Zone to the east. The zoning of the areas immediately around the North Precinct are shown in Figure 2.

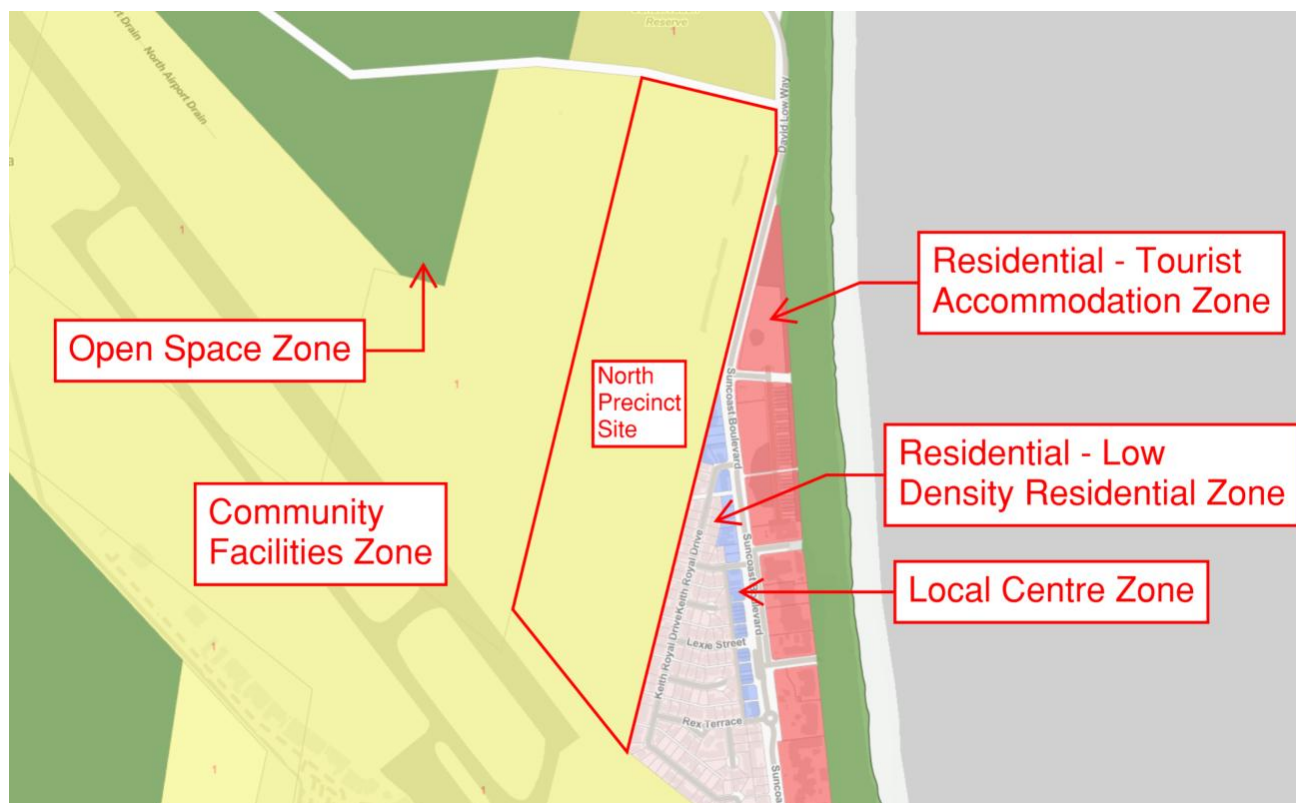


FIGURE 2: ZONING AROUND THE NORTH PRECINCT SITE

The current proposal is based on the Structural Plan included in Appendix A. This is a work in progress document, but it is expected that the North Precinct will feature various sub-precincts, including the following uses:

- North – Tourism and Accommodation
 - Resort Complex
 - Short Term Accommodation (STA)
 - Multi Dwelling
 - Retirement Living
 - Entertainment/Catering
- Central – Mixed Use
 - Entertainment/Catering
 - Commercial Business Uses
 - Retail
 - Indoor Sports & Recreation
- South – Employment
 - Low Impact Industry
 - Research & Technology
 - Service Industry
 - Warehouse
 - Commercial Business
 - Air Services
 - Aviation
 - Indoor Sports & Recreation

2.1 REFERENCE DOCUMENTATION

This report has been prepared based on the following documents:

- Sunshine Coast Airport North Precinct Structural Plan, prepared by RPS dated 22 July 2026
- *Strategic airports and aviation facilities state interest*, prepared by the Queensland Government dated May 2021 VS 1.0
- State Development Assessment Provisions (SDAP) State Code 1: *Development in a state-controlled road environment*, prepared by the Queensland Government dated 27 April 2026, Version 3.6
- Queensland Development Code (QDC) Mandatory Part MP4.4 *Buildings in a transport noise corridor*, prepared by the Queensland Government dated 17 August 2015
- Environmental Protection (Noise) Regulation 2019, prepared by the Queensland Government

3 CRITERIA

Several acoustic criteria apply to the site. These are presented in the sections below.

3.1 NOISE IMPACTS ON SITE – AIRCRAFT NOISE

The *Strategic airports and aviation facilities state interest* document prepared by the Queensland Government provides guidelines which can be used as a benchmark to assess nearby facilities (including acoustic criteria). Measure 3 of the document lists the following acoustic criteria:

Development for the following land uses within the respective ANEF contours are designed and constructed to attenuate aircraft noise by achieving the indoor design sound levels specified below:

(a) In the 20- 25 ANEF contour:

- (i) Accommodation activity (excluding nature-based tourism, resort complex, rooming accommodation and short-term accommodation)
- (ii) Relocatable home park
- (iii) Childcare centre
- (iv) Educational establishment
- (v) Hospital
- (vi) Health care service

(b) In the 25- 30 ANEF contour:

- (i) Hotel where providing accommodation
- (ii) Rooming accommodation
- (iii) Short-term accommodation
- (iv) Resort complex
- (v) Nature based tourism

(c) In the 20- 30 ANEF contour:

- (i) Community activity
- (ii) Place of worship

(d) In the 25- 35 ANEF contour:

- (i) Office

(e) In the 30- 40 ANEF contour:

- (i) Low impact industry.

Indoor design sound levels:

LAND USE / DEFINED TERM	LOCATION WITHIN DEVELOPMENT	INDOOR DESIGN SOUND LEVEL DB(A)
Accommodation activity (excluding rooming accommodation and short- term accommodation)	Sleeping areas	50
	Other habitable	55

LAND USE / DEFINED TERM	LOCATION WITHIN DEVELOPMENT	INDOOR DESIGN SOUND LEVEL DB(A)
Hotel where providing accommodation Rooming accommodation such as hostels Short-term accommodation	Sleeping areas	55
Educational establishment Childcare centre	Libraries, study areas, sleeping areas	50
	Teaching areas, assembly areas	55
Hospital Health care service	Wards, theatres, treatment and consulting rooms	50
	Laboratories	65
Community activity Place of worship	Internal areas	50
Office	Private offices, conference rooms	55
	Open offices	65
Low impact industry	Inspection, analysis, precision work	75
	Light machinery, assembly, bench work	80

These generally align with the AS 2021:2015 standard¹ for building siting and construction around airports.

3.2 NOISE IMPACTS ON SITE – TRAFFIC NOISE

For developments around state roads, the State Development Assessment Provisions (SDAP) State Code 1: *Development in a state-controlled road environment* and the Queensland Development Code (QDC) Mandatory Part MP4.4 apply to the site.

The SDAP State Code 1 outlines requirements for noise levels onto the land adjacent to a state-controlled road or type 1 multi-modal corridor, which is applicable to David Low Way. The Performance and Acceptable Outcomes are listed below.

TABLE 1: SUMMARY OF SDAP STATE CODE 1 PERFORMANCE OUTCOMES AND ACCEPTABLE OUTCOMES

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES
Material Change of Use (accommodation activity)	
Ground floor level requirements adjacent to a state-controlled road or type 1 multi-modal corridor	

¹ The AS 2021:2015 *Acoustics – Aircraft noise intrusion – Building siting and construction* standard outlines recommendations for building siting around areas which are expected to experience aircraft noise

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES
PO39 Development minimises noise intrusion from a state-controlled road or railway in private open space.	AO39.1 Development provides a noise barrier or earth mound which is designed, sited and constructed: 1. to achieve the maximum free field acoustic levels in reference table 2 (item 2.2) for private open space at the ground floor level; 2. in accordance with: a. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise) department of Transport and Main Roads 2013; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020 OR AO39.2 Development achieves the maximum free field acoustic level in reference table 2 (item 2.2) for private open space by alternative noise attenuation measures where it is not practical to provide a noise barrier or earth mound.
PO40 Development (excluding a relevant residential building or relocated building) minimises noise intrusion from a state-controlled road in habitable rooms at the façade.	AO40.1 Development (excluding a relevant residential building or relocated building) provides a noise barrier or earth mound which is designed, sited and constructed: to achieve the maximum building facade acoustic level in reference table 1 (item 1.1) for habitable rooms; in accordance with: a. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (road Traffic Noise), Department of Transport and Main Roads 2013" b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019 c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020. OR AO40.2 Development (excluding a relevant residential building or relocated building) achieves the maximum building facade acoustic level in reference table 1 (item 1.1) for habitable rooms by alternative noise attenuation measures where it is not practical to provide a noise barrier or earth mound.

PERFORMANCE OUTCOMES	ACCEPTABLE OUTCOMES
PO41 Habitable rooms (excluding a relevant residential building or relocated building) are designed and constructed using materials to achieve the maximum internal acoustic level in reference table 3 (item 3.1).	No acceptable outcome is provided

Note that the criteria listed in Table 1 are applicable to the ground level of the residential buildings or private open space, this is not applicable to elevated levels.

The relevant levels reference in the tables are produced below:

TABLE 2: MAXIMUM BUILDING FAÇADE ACOUSTIC LEVELS (TABLE 1 OF SDAP STATE CODE 1)

APPLICABLE USE	ACOUSTIC LEVELS
1.1: Accommodation activity	a. ≤ 60 dB(A) L10 (18 hour) façade corrected (measured L90 (8 hour) free field between 10pm and 6am ≤ 40 dB(A)) OR b. ≤ 63 dB(A) L 10 (18 hour) façade corrected (measured L90 (8 hour) free field between 10pm and 6am > 40 dB(A))

TABLE 3: MAXIMUM FREE FIELD ACOUSTIC LEVELS (TABLE 2 OF SDAP STATE CODE 1)

APPLICABLE USE	ACOUSTIC LEVELS
2.1: Private open space for residential lots	a. ≤ 60 dB(A) L10 (18 hour) façade corrected (measured L90 (8 hour) free field between 10pm and 6am ≤ 40 dB(A)) OR b. ≤ 63 dB(A) L 10 (18 hour) façade corrected (measured L90 (8 hour) free field between 10pm and 6am > 40 dB(A))
2.2: Private open space for an accommodation activity (including lots created for a future accommodation activity)	

Private open space is defined under the SDAP as "an outdoor space for the exclusive use of occupants of a dwelling". It is understood that this does not refer to an open communal or public space (such as a garden or park) but instead refers to open areas within an accommodation unit, such as an open balcony.

The QDC MP4.4 list out requirements for habitable rooms of residential buildings located in transport noise corridors to control noise intrusion. The relevant requirements are listed in Table 4.

TABLE 4: SUMMARY OF QDC MP4.4 REQUIREMENTS APPLICABLE

NOISE CATEGORY	MINIMUM TRANSPORT NOISE REDUCTION (DB (A)) REQUIRED FOR HABITABLE ROOMS	COMPONENT OF BUILDING'S EXTERNAL ENVELOPE	MINIMUM RW REQUIRED FOR EACH COMPONENT
Category 2 (63-67 dB LA10,18hr for state-controlled roads and designated local government roads)	30	Glazing	35 (where total area of glazing for a habitable room is greater than 1.8m ²)
			32 (where total area of glazing for a habitable room is less than or equal to 1.8m ²)
		External walls	41
		Roof	38
		Floors	45
		Entry doors	33

3.3 NOISE EMISSIONS

Nearby receivers to the north, south, and west are generally not sensitive receivers, with a Community Facilities Zone to those sides of the site boundary (it is also noted that the western and southern boundaries are to other airport precincts), however a section of the eastern boundary borders a Residential – Low Density Residential Zone. This is shown in Figure 3.

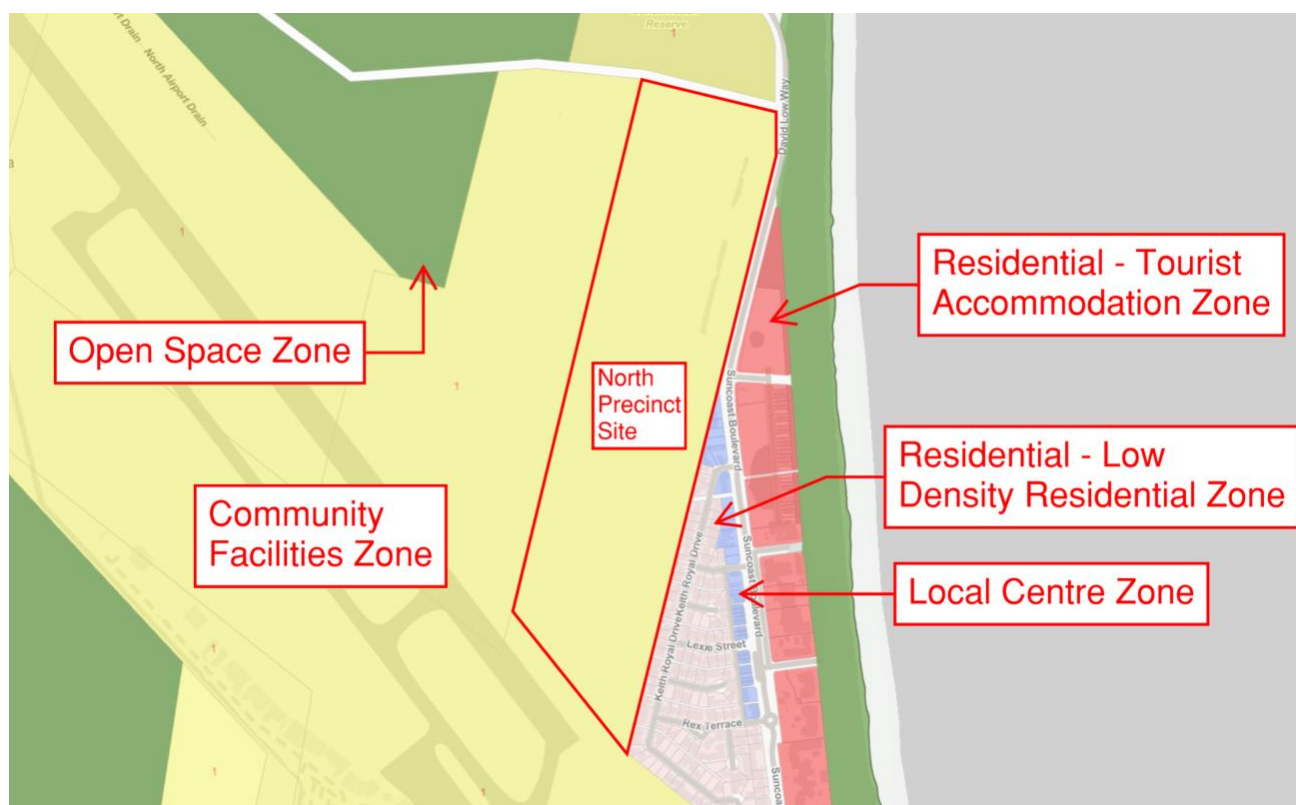


FIGURE 3: ZONING AROUND SITE

Noise emissions from the site from sources such as outdoor plant equipment or on-site activities will need to meet the relevant noise criteria. These are defined by the Queensland Environmental Protection (Noise) Policy (EP(N)R) 2019, relevant limits have been listed in Table 5.

TABLE 5: EP(N)R 2019 NOISE CRITERIA

SENSITIVE RECEPTOR	TIME OF DAY	ACOUSTIC QUALITY OBJECTIVES (MEASURED AT THE RECEPTOR) DB(A)			ENVIRONMENTAL VALUE
		LAeq,adj,1hr	LA10,adj,1hr	LA1,adj,1hr	
Residence (for outdoors)	daytime and evening	50	55	65	Health and wellbeing
Commercial and retail activity (for indoors)	when the activity is open for business	45			Health and wellbeing, in relation to the ability to converse

4 EXISTING ENVIRONMENT

Noise loggers were installed from 06/02/2026 to 13/02/2026 at the several locations shown in Figure 4. For the purposes of this stage of the design, the average and maximum noise levels have been presented and discussed for the 3 loggers located at the northeastern, southeastern, and southwestern corners of the site.



FIGURE 4: LOCATIONS OF NOISE LOGGERS

A summary of the noise levels for the measurement period is presented in Table 6.

TABLE 6: SUMMARY OF NOISE LOGGER MEASUREMENTS

LOGGER LOCATION	METRIC	DAY (07:00 – 18:00)	EVENING (18:00 – 22:00)	NIGHT (22:00 – 07:00)
L1	dB LAeq	65	63	57
	dB LAmax	84	79	75
	dB LA10	67	66	60
	dB LA90	56	56	50
L2	dB LAeq	62	59	48
	dB LAmax	86	83	69
L3	dB LAeq	60	56	46
	dB LAmax	82	79	67

5 NOISE ASSESSMENT

A noise assessment was carried out on the North Precinct site with recommendations made to ensure that the proposed development will be compliant with all relevant acoustic criteria applicable to the site.

5.1 NOISE IMPACTS ON SITE – AIRCRAFT NOISE

Due to the location of the site, the development will be exposed to significant amounts of aircraft noise and other noise from airport related activities (predominantly aircraft takeoffs and landings). This was noted to be particularly high towards the southern boundary where the site borders the active airport areas and runway.

Noise levels from the airport reaching the boundary of the North Precinct are expected to be up to 86 dB L_{Amax} . This level is close to the 75-80 dB L_{Amax} recommended in the AS 2021 standard for low impact industry expected to be located near the south of the site.

The *Strategic airports and aviation facilities state interest* document suggests the following limitations on the proposed development areas based on the ANEF contours of the airport (Figure 5), with commentary on each included *italicised*:

- Long-term residential accommodation areas to be located outside of any ANEF 25 (or higher) zone.
 - *These can be located in most areas of the site outside of the far southern end of the North Precinct.*
- Short-term accommodation (including hotels and similar) areas to be located outside of any ANEF 30 (or higher) zone.
 - *These can be located in all but the very southern end of the North Precinct.*
- Retail and commercial areas to be located outside of any ANEF 35 (or greater) zone.
 - *Retail and commercial developments can be located anywhere within the North Precinct site and are not constrained by acoustics.*
- Light industrial areas to be located outside of any ANEF 40 (or greater) zone.
 - *Note that due to the size of aircraft serving Sunshine Coast Airport, no ANEF 40 or greater zones exist in the area.*

These are based on the ANEF contours, included as Figure 5 below. Based on these and the current approximate plans for areas where each of the uses are proposed, we expect that acoustics will not constrain where the boundaries of the accommodation/retail/light industrial areas will be on the site. The current proposed structural plan for the North Precinct follows these suggested limitations.

We understand that these contours may also be conservative as newer aircraft are understood to be quieter so the zones where development can happen may be increased when the ANEF contours are updated.

5.1.1 RECOMMENDATIONS

Generally there are no major constraints on the location of the sub-precinct boundaries from an acoustic perspective due to the relatively low noise levels produced by the aircraft serving Sunshine Coast Airport. The main limitations for the development are for long-term accommodation (which must be located outside the ANEF 25+ area) and short-term accommodation (which must be located outside the ANEF 30+ area). These limits are located to the southern end of the site which are not where the proposed developments are placed in the current Structural Plan.

HVAC systems which are open to the external environment (e.g. outdoor supply air or extract fans) may require treatment above the typical measures required to treat mechanical noise due to aircraft noise. Depending on the mechanical plant selected, there is a possibility that aircraft noise may be greater than noise produced by the mechanical systems.

Building facades and rooves may need to have more a more substantial construction than typical for buildings of a similar use not located near an airport, however this will depend on the specific use and location of each building. This is also not expected to be significant considering the relatively low noise levels produced by the aircraft serving Sunshine Coast Airport.

Note that all assessments involving aircraft noise are done assuming that the ANEF contours (presented in Figure 5) are accurate and aircraft measured during the measurement period are representative of the loudest aircraft expected to operate at Sunshine Coast Airport.



FIGURE 5: ANEF CONTOURS FOR SUNSHINE COAST AIRPORT

5.2 NOISE IMPACTS ON SITE – TRAFFIC NOISE

Traffic noise was identified as another source of noise impacting the site. Noise levels from traffic along David Low Way were found to be significant and reasonably consistent through a 24 hour period, particularly during the day and evening hours.

As it is expected that the use of the area bordering David Low Way will be accommodation, SDAP State Code 1 PO40 is applicable. This requires that any ground level private open spaces (understood to be only applicable

to open areas attached to the accommodation) and accommodation property façades are exposed to ≤ 63 dBA $L_{A10,18hr}$ as the levels are greater than 40 dBA $L_{A90,8hr}$ between the hours of 10pm and 6am. This is lower than the measured 67 dBA L_{A10} and will require some consideration regarding the location of the accommodation properties facing David Low Way (or the construction of a noise barrier/earth mound to reduce noise levels).

In addition to this, the QDC MP4.4 requires any residential building within a Transport Noise Corridor must meet a prescribed façade acoustic performance. Based on the 67 dBA L_{A10} measured, a minimum 30 dBA reduction is required from transport noise for habitable rooms. The following façade performance also applies:

- Glazing: **Rw 35** (total Glazing for habitable room is greater than 1.8m²) OR **Rw 32** (total glazing for habitable room is less than or equal to 1.8m²)
- External walls: **Rw 41**
- Roof: **Rw 38**
- Floors: **Rw 45**
- Entry doors: **Rw 33**

5.2.1 RECOMMENDATIONS

Due to the high traffic noise from David Low Way, the accommodation properties adjacent to the road will need to be considered. If any ground level habitable spaces and/or private open spaces are located in accommodation buildings close to David Low Way, noise levels at the façade will need to be controlled to meet the requirements set out in the SDAP State Code 1. This can be done in the following ways:

- Constructing a noise barrier or earth mound to protect property façades from traffic noise along the eastern boundary with David Low Way. A solid barrier with no gaps which blocks line of sight from ground level to the traffic would be required for this of minimum 10kg/m² surface density. Some possible barriers include:
 - Earth mound
 - Fence made of solid material of minimum 10 kg/m² surface density (e.g. timber, sheet steel, plywood, blockwork, etc.)

This barrier is not required to be located along the boundary of the site and is only required to protect any ground level habitable spaces and/or private open spaces. This can be a localised barrier located near the façade extending only for the length required to reduce noise of that particular section of the façade from traffic noise.

Note that although a hedge or similar barrier constructed of plants or other greenery is not suitable due to the fact that they do not form a solid barrier, these could be installed on top of a solid barrier to reduce the visual impact of a fence.

- Locating any ground level habitable spaces and/or private open space façades further back from the property to reduce noise levels to 63 dBA L_{A10} . This will limit any façades with these spaces to be approximately 30m+ from the eastern boundary of the site.

The above is only required if there are no habitable spaces and/or private open spaces located on ground level.

The building façades along the eastern boundary will also need to meet the minimum construction requirements per the QDC MP4.4 (listed above in the Discussion section). Lightweight and masonry/concrete façades can be used with glazing, however a construction of high surface mass or density is expected to be required to adequately reduce traffic noise into the internal areas.

5.3 NOISE EMISSIONS

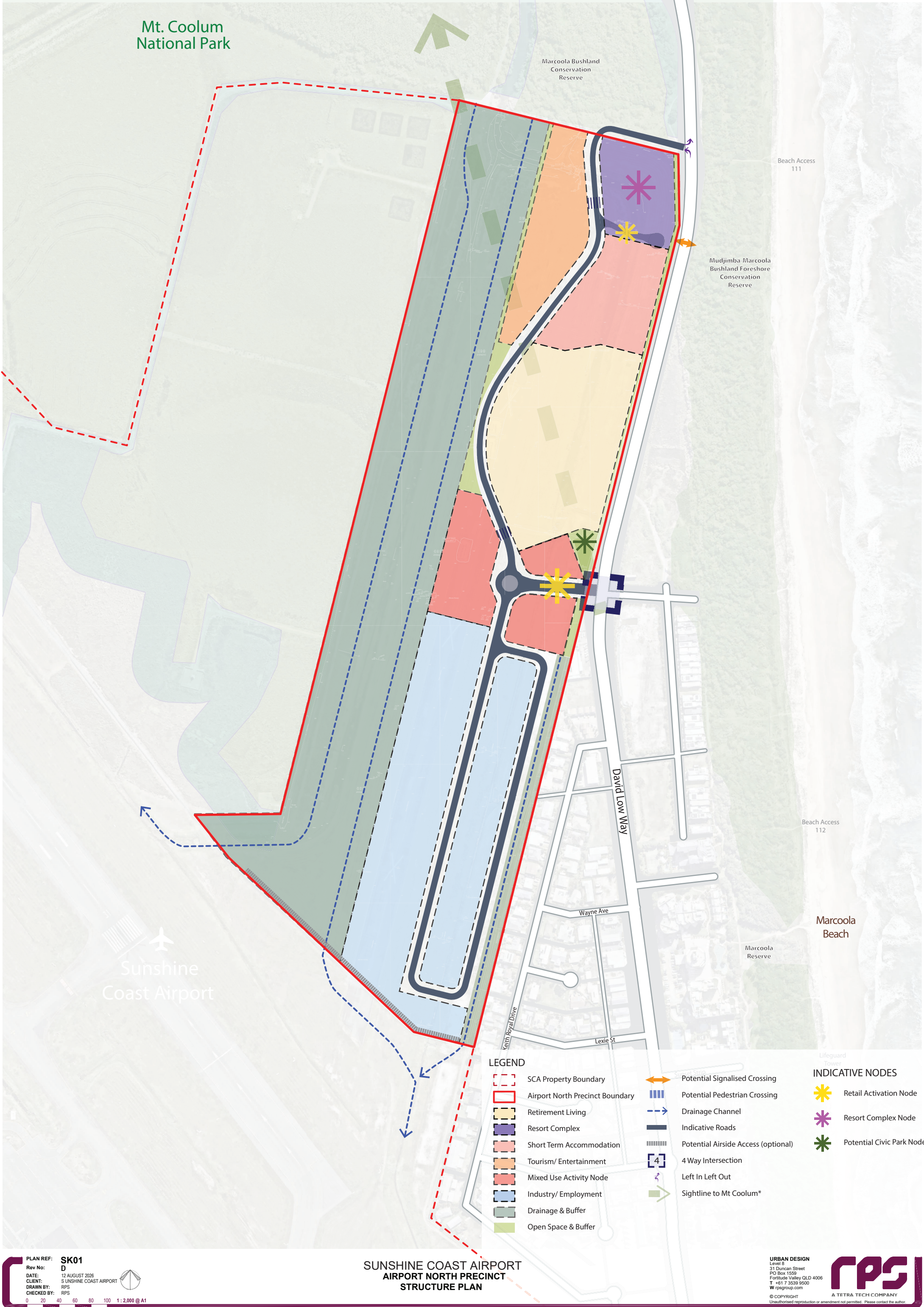
During site visits, it was noted that there were several residential properties along the eastern boundary of the site. These are all expected to be sensitive to existing noise and will need to meet the EP(N)R limits as listed in Table 5.

5.3.1 RECOMMENDATIONS

Activities of high noise emissions (e.g. plant equipment) should generally be located away from the eastern boundary to the residential properties if possible.

A noise barrier is also recommended to be considered to the eastern boundary to the residential properties due to the potential of high noise from normal activities and the short distance to the boundary. Although this will not reduce existing aircraft noise, it will reduce noise effects from any new activities from the North Precinct which could be the subject of complaints.

APPENDIX A – NORTH PRECINCT STRUCTURAL PLAN



CONTACT US

AUSTRALIA

ADELAIDE

T: +61 8 8290 6800
E: adelaide@ndy.com

BRISBANE

T: +61 7 3120 6800
E: brisbane@ndy.com

CANBERRA

T: +61 2 6295 1788
E: canberra@ndy.com

GOLD COAST

T: +61 7 5512 1235
E: goldcoast@ndy.com

MELBOURNE

T: +61 3 9862 6800
E: melbourne@ndy.com

PERTH

T: +61 8 9281 6800
E: perth@ndy.com

SYDNEY

T: +61 2 9928 6800
E: sydney@ndy.com

CANADA

VANCOUVER

T: +1 604 734 9338
E: vancouver@ndy.com

NEW ZEALAND

AUCKLAND

T: +64 9 307 6596
E: auckland@ndy.com

WELLINGTON

T: +64 4 471 0151
E: wellingtonadmin@ndy.com

UNITED KINGDOM

LONDON

T: +44 20 7553 9494
E: london@ndy.com

IRELAND

DUBLIN

T: +353 1 264 6995
E: dublin@ndy.com

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