



Kogarah Golf Club Redevelopment — Concept & Early Works SSDA (SSD-84467726): Aeronautical Impact Assessment (SSDA.Issue.1)

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**strategic
airspace**

Prepared by Consultants:



Strategic Airspace Pty Limited
ABN: 60 097 857 415

Australia

Tel: +61.2. 8957 2278

Email - Attn: Cathy.PakPoy@StrategicAirspace.com

Client:



Stockland

Stockland Development Pty Ltd
ABN: 71 000 064 835
Level 25, 133 Castlereagh Street
Sydney NSW 2000



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Document Control

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Document Title: **Kogarah Golf Club Redevelopment — Concept & Early Works SSDA (SSD-84467726): Aeronautical Impact Assessment (SSDA.Issue.1)**

Purpose / Abstract: *This Aeronautical Impact Assessment (AIA) has been prepared for Stockland Development Pty Ltd to accompany a State Significant Development Application (SSDA) (SSD-84467726) for a Concept Masterplan and Early Works associated with the Kogarah Golf Club Redevelopment (KGCR) located on land identified as 13-19A Marsh Street, Arncliffe (the site).*

The site is immediately to the west of Sydney Airport, across the Cooks River and for the most part behind the International Terminal building. Located to the north-west of the short cross runway, RWY 07/25 (the closest runway), and to the west of the western parallel runway, RWY 16R/34L, these two runways are the most sensitive in terms of potential impact on protections for flight procedures and related navigation aids.

The Planning Secretary's Environmental Assessment Requirements (SEARs) outline the key areas that must be considered as part of the assessment to be included in the Environmental Impact Assessment (EIS) for the project.

This assessment takes into account the requirements outlined in the SEARs and regulations and documents that safeguard aviation operations, particularly with respect to the proposed development's proximity to Sydney International Airport. These requirements are rooted in the guidelines and criteria of the National Airports Safeguarding Framework (NASF) and the Airports (Protection of Airspace) Regulations 2026 (APAR).

The assessment identified considerations relating to the potential impact of the proposed buildings and future construction activities on protected airspace and the terminal instrument flight procedures as well as operational factors affecting aircraft approaches and landings, including windshear and turbulence, lighting distraction to pilots and wildlife hazard risk. These matters have been assessed from an aviation safeguarding perspective in accordance with the NASF and the APAR. Aircraft noise constraints in relation to the proposed land uses have also been considered.

The report concludes that the proposed development would not adversely impact the safety, regularity or efficiency of Sydney Airport operations. The risk of wildlife to aviation will be reduced as a result of the change of use across the site. The detailed wind shear and turbulence assessment confirmed that the proposed built form that would infringe the Obstacle Limitation Surfaces (OLS), but remain below the limiting terminal instrument flight procedure obstacle protection (ie, PANS-OPS) surfaces currently identified for the site, would not create unacceptable impacts on aircraft operations. The building envelopes proposed at the very north and south of the site will not infringe the prescribed airspace. Eternal lighting constraints will be imposed on the southern half of the site in accordance with the NASF and CASA guidelines. Temporary construction impacts, including crane operations, are considered capable of being managed through appropriate operational controls and consultation with relevant aviation stakeholders.

Taking these factors into consideration, and subject to compliance with any further requirements imposed by Airservices Australia, CASA, Sydney Airport and DITRDCSA, there is no identified technical aviation impediment to approval of the proposed development under the Airports (Protection of Airspace) Regulations 2026, and aviation safeguarding considerations are therefore not considered a barrier to approval of the SSDA.

Contract: -

StratAir Ref: 25.017

Change History

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0.1 Draft	13-May-2026	P. Haubourdin	C. Pak-Poy	First draft of SSDA report (Issue 1) Updates from SSDA TOA report include Wind Shear & Turbulence assessment, standard planning text, SSDA envelope block plan, new Airport (Protection of Airspace) Regulations 2026

Distribution Control

Legend:	Uncont Uncontrolled Document	YSSY Sydney International Airport
Client Stockland Development Pty Ltd	StratAir Strategic Airspace	
SACL Sydney Airport Corporation Ltd	AsA Airservices, Airservices Australia	
CASA Civil Aviation Safety Authority	DITRDCSA Department of Infrastructure, Transport, Regional Development, Communications, Sport & the Arts	

Issue Version	Issue Date	Issue Purpose / Description	Copy No	Copy Recipient
0.1 Draft	13-May-2026	First draft for client review	Uncont	StratAir internal, Client

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1. Introduction & Executive Summary

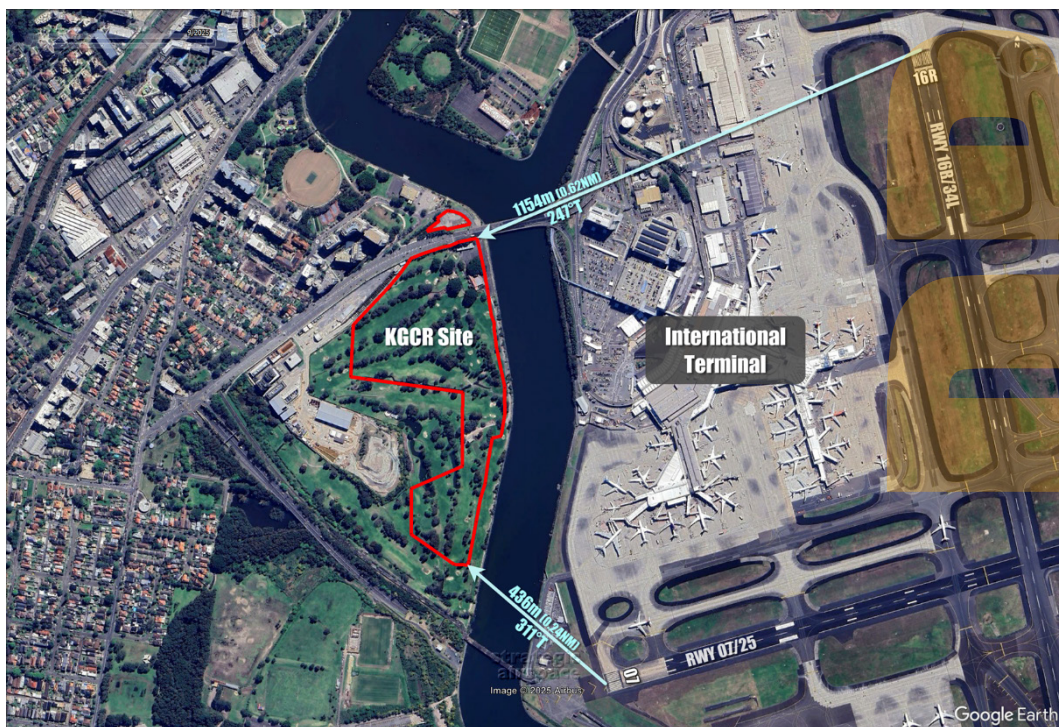
This Aeronautical Impact Assessment (AIA) has been prepared for Stockland Development Pty Ltd to accompany a State Significant Development Application (SSDA) (SSD-84467726) for a Concept Masterplan and Early Works associated with the Kogarah Golf Club Redevelopment (KGCR) located on land identified as 13-19A Marsh Street, Arncliffe (the site).

The vision for the Kogarah Golf Club Redevelopment is to create a world-class precinct that leverages the site's strategic location adjacent to Sydney Airport and strong transport connections by delivering multi-level logistics development, trade-related enterprise and supporting uses with publicly accessible open space. It seeks to deliver state-of-the-art facilities that will redefine the logistics landscape in Australia, setting new benchmarks for scale, efficiency, sustainability and innovation.

The Concept & Early Works SSDA seeks consent for an overarching Concept Masterplan that establishes maximum building envelopes, Gross Floor Area (GFA), land uses, and other parameters through Urban Design Guidelines and technical reporting. It also seeks consent for the carrying out of Early Works to facilitate the initial site preparation and infrastructure works required to support future development and publicly accessible open space.

The site is immediately to the west of Sydney Airport, across the Cooks River and for the most part behind the International Terminal building. Located to the north-west of the short cross runway, RWY 07/25 (the closest runway), and to the west of the western parallel runway, RWY 16R/34L, these two runways are the most sensitive in terms of potential impact on protections for flight procedures and related navigation aids.

Figure 1-1: The Site in relation to Sydney Airport



The SEARs for the Concept & Stage 1 reference Airport Safeguarding as a Key Issue and require consultation with both Sydney Airport & the Commonwealth Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts (DITRDCA) which is responsible for airspace protection and federally leased airports.

Table 1-1: SEARs Compliance Table

SEARs Key Issue (Aviation / Airport)	Response
Airport Safeguarding – details of how the proposal may impact on the operations of Sydney Airport, including potential intrusion into the obstacle limitation surface and consultation with Sydney Airport and the Australian Government Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts (DITRDCSA).	A holistic assessment of all potential impact on the operations of Sydney Airport, based on NASF guidelines is summarised in Table 1-2 below. Consultation with DITRDCSA and aviation stakeholders (including Sydney Airport) will be undertaken as part of the height approval process.

The National Airports Safeguarding Framework (NASF) was used as the basis of assessment to ensure a holistic and comprehensive assessment of all potential factors. The results in summary are:

Table 1-2: NASF Review Assessment Summary

NASF Guideline	Impact / Constraint	Complies	Comment
A Aircraft Noise	95%+ of site: between ANEF 20 & ANEF 25 contours Small portion at the south of the site is between ANEF 25 & ANEF 30	✓	Refer Section 4.1, p13 The vast majority of the site is within the ANEF 20 & ANEF 25 contours. A very small portion of the logistics buildings at the far south of the site falls between the ANEF 25 & ANEF 30 contours. Refer to the results of the separate Noise and Vibration Impact Assessment by Pulse White Noise Acoustics (PWNA) which provides guidelines for implementation during detailed design to ensure appropriate protection from aircraft noise.
B Windshear	Within windshear assessment zones for RWY 16R & RWY 07	✓	Refer Section 4.2, p14 Refer also to the separate Wind Shear and Turbulence Assessment by CPP Wind Engineering Consultants (May 2026)
C Wildlife	Within 3km buffer zone (Area A)	⇒	Refer Section 4.3, p16 Detailed design mitigation measures involving habitat creation and plantings along Cooks River foreshore will be subject to consultation with Sydney Airport to help ensure that wildlife hazard is minimised while aiming to satisfy Bayside Council canopy coverage requirements. Refer also Biodiversity Development Assessment Report by Cumberland Ecology
D Wind Turbines	None	N/A	There are no plans for the installing of wind turbines at the site.
E Lighting Distraction	Whole site within 6km Assessment Area Southern part of the site subject to specific external lighting control zones	✓ ⇒	Refer Section 4.5, p17 External lighting constraints as specified in Table 4-1 (p18) will need to be specified as part of the building & construction specifications.

NASF Guideline	Impact / Constraint	Complies	Comment
F Protected Airspace	Obstacle Limitation Surfaces (OLS) RWY07 Transitional Surface Inner Horizontal Surface Procedures for Air Navigation Service – Aircraft Operations (PANS-OPS) Varying heights	⇒ ✓	Refer Section 4.6, p19 The taller parts of the development will infringe on the Inner Horizontal Surface (IHS), triggering the requirement for APAR approval. The southern part of the site is planned with heights that will remain below the Transitional Surface near the RWY 07 threshold. Novel construction methods will be utilised to ensure that construction of the development will not exceed significantly above the maximum approved heights of the buildings. It is also noted that any construction equipment which would infringe the Transitional Surface will not be granted approval by the Commonwealth unless Sydney Airport indicates their agreement. All structures will be below limiting PANS-OPS surface heights which vary across the site. Innovative construction methods will ensure that all construction activities and equipment will NOT infringe any limiting PANS-OPS surfaces
G Communication, Navigation & Surveillance (CNS)	Outside the predefined Building Restricted Area (BRA) surfaces Within the 1000m runway offset where certain criteria exist	⇒	Refer Section 4.7, p22 While the site sits outside the defined boundaries of the Building Restriction Area (BRA) surfaces, the guidelines indicate that certain developments up to 1000m from the runway centreline may be subject to further assessment by Airservices Australia. As the site lies almost entirely within 1000m from the centreline of RWY 07/25, any building with a "vertical wall facing the runway exceeding 2,000m ² and a height more than 20m above the Localizer ground level" will require assessment by Airservices Australia.
H Strategic Helicopter Landing Sites (SHSL)	None	N/A	Refer Section 4.8, p23 There are no Strategic Helicopter Landing Sites (SHLS) in the vicinity of the site. The proposed development will not interfere with any helicopter traffic to/from the HLSS on Sydney Airport itself (located at the east of the airport, south of the eastern end of the RWY 07/25 cross runway).
I Public Safety Area (PSA)	None	N/A	No impact. Whilst there are currently no defined PSAs for Sydney Airport, if one was to apply the PSA criteria used for Western Sydney International Airport to Sydney Airport, the site would be considered outside (to the north) of a PSA at the western end of the only potentially relevant runway, RWY 07/25.

The aeronautical impact assessment also examines the proposed development in relation to the prescribed airspace of Sydney Airport and the Commonwealth *Airports (Protection of Airspace) Regulations 2026* (APAR) and the potential for approvability of the proposal under these regulations.

The approval authority for any application under the APAR is the Commonwealth Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts (DITRDCA). Primary referral agencies and key stakeholders are Sydney

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Airport, the Civil Aviation Safety Authority (CASA, the regulator), Airservices Australia (the air navigation service provider), and major transport airline operators.

The report concludes that the proposed development itself would not adversely impact the safety, regularity and efficiency of Sydney Airport operations. While portions of the development would penetrate the OLS Inner Horizontal Surface, the proposed permanent building envelopes are expected to remain below the limiting TIFPOP surfaces currently identified for the site. Further, the detailed wind shear and turbulence assessment confirmed that the proposed built form would not result in an unacceptable effect on aircraft operations to the closest runways, RWY07 or RWY16R. The southern parts of the development will be subject to external lighting constraints.

Construction of the majority of the development will necessitate temporary crane operations which would infringe the airport's prescribed airspace. Preliminary information on the proposed construction activities and airspace impact will be provided in an update of or supplement to this AIA to support the application for approval of the relevant envelopes as controlled activities under the APAR.

Following development consent, and at the appropriate time prior to the construction of relevant buildings at the various stages of development, separate applications for the associated construction activities and equipment (based on the detailed construction plans and airspace current at that time) will require approval under the APAR.

Taking these factors into consideration, and subject to compliance with any further requirements imposed by Airservices Australia, there is no technical impediment to approval of the proposed development under the current Airports (Protection of Airspace) Regulations — and therefore, potential aviation impact is not considered a barrier to approval of the SSDA.

2. The Project

2.1 Background

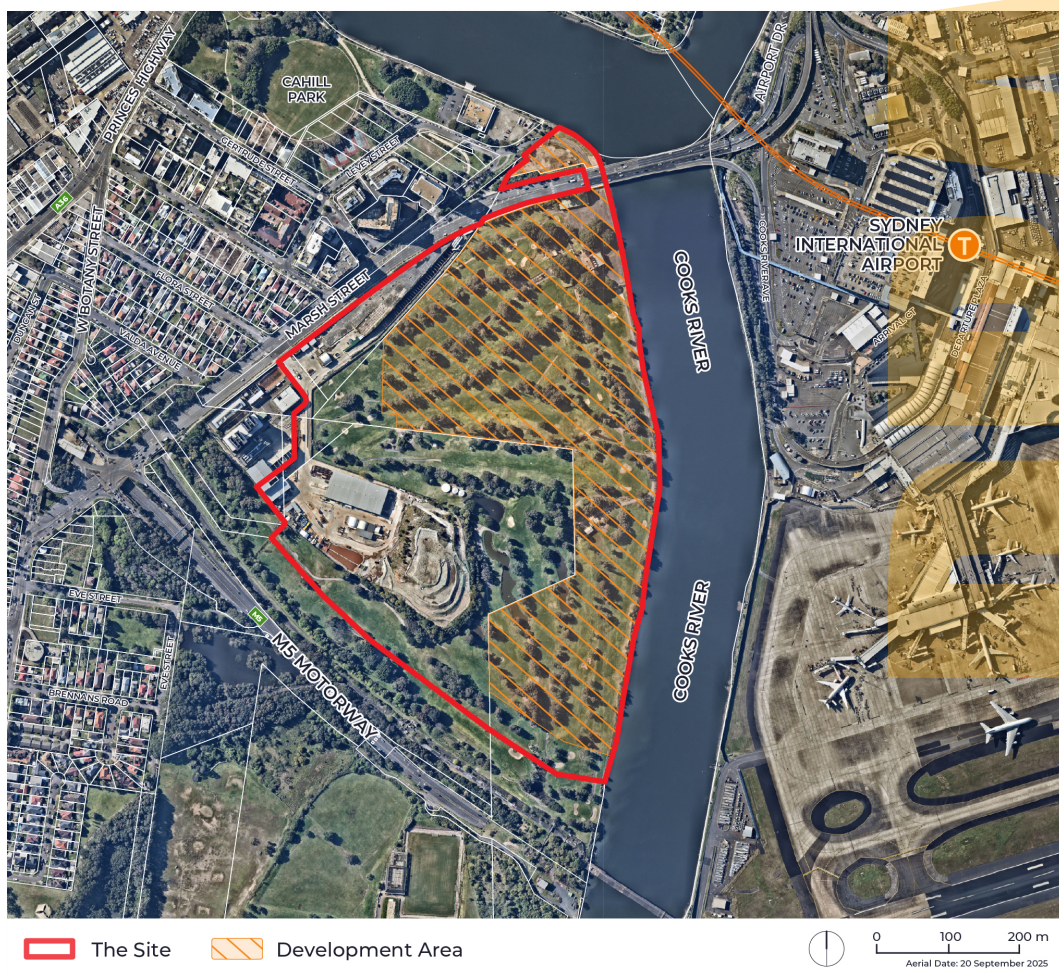
A Planning Proposal (PP-2022-1748) was previously submitted by John Boyd Properties for the Kogarah Golf Club Redevelopment site to amend and integrate planning controls into the Bayside Local Environmental Plan 2021 (Bayside LEP 2021). It sought to deliver refreshed planning controls that prioritise land uses which support the adjacent Sydney Airport, as one of Australia's most important trade gateways.

The Planning Proposal was granted Gateway Determination on 5 August 2022 and publicly exhibited between 24 April 2023 and 6 June 2023. It was determined to proceed to finalisation in March 2024, with the amendments to the Bayside LEP 2021 gazetted on 9 May 2025.

Following gazettal, John Boyd Properties has entered a Joint Venture (JV) with Stockland for the Kogarah Golf Club Redevelopment. The JV will enable the effective development and future management of the strategically significant site for a world-class focused precinct by combining their expertise.

2.2 Site Description

Figure 2-1: Site Aerial Map



Source: Nearmap, edited by Colliers Urban Planning

For: Stockland

The site is identified as 13-19A Marsh Street, Arncliffe within the Bayside Local Government Area (LGA). It is situated to the immediate west of the Cooks River and Sydney Airport, located approximately 6km west of Port Botany and 10km south of the Sydney Central Business District (CBD). It includes frontages on Marsh Street, providing direct access to the M5 Motorway, Sydney Airport and St Peter's Interchange (via the Sydney Gateway).

The site comprises land associated with ten (10) allotments and a total area of approximately 32 hectares. The existing uses include the previous Kogarah Golf Club (vacated in March 2025) accessed via Levey Street and the temporary M6 Stage 1 construction compound accessed directly from Marsh Street.

The development area represents Lot 31 DP1231486 and Lot 100 DP1231954, excluding land subject to future dedication to Bayside Council. It comprises an area of approximately 16.7 hectares and is zoned SP4 Enterprise and C2 Environmental Conservation under the Bayside LEP 2021.

The site is described in Table 2-1 below, with the extent of the site and development area depicted in Figure 2-1 above.

Table 2-1: Site Description

Lot & DP	Address	Ownership
Lot 31 DP 1231486	19 Marsh Street, Arncliffe	Cook Cove Nominees No 1 Pty Ltd as trustee of Cook Cove Property Trust 1
Lot 100 DP 1231954	19A Marsh Street, Arncliffe	Cook Cove Nominees No 2 Pty Ltd as trustee of Cook Cove Property Trust 2
Lot 60 DP 1301057	13 Marsh Street, Arncliffe	Bayside Council
Lot 61 DP 1301057	19 Marsh Street, Arncliffe	
Lot 62 DP 1301057	Marsh Street, Arncliffe	Transport for New South Wales
Lot 63 DP 1301057	Marsh Street, Arncliffe	
Lot 1 DP 329283	Marsh Street, Arncliffe	
Lot 12 DP570900	Marsh Street, Arncliffe	
Lot 102 DP1231954	Marsh Street, Arncliffe	
Lot 103 DP1231954	Marsh Street, Arncliffe	

2.3 Project Description

The Concept & Early Works SSDA seeks consent for the following:

- **Concept Masterplan** to support the staged delivery of the Kogarah Golf Club Redevelopment, including:
 - Maximum building envelopes, including maximum building heights and minimum setbacks;
 - Maximum Gross Floor Area (GFA) up to 343,250m², comprising up to:
 - 3,250m² of GFA (FSR of 1.25:1) on Lot 31 DP 1231486; and
 - 340,000m² of GFA on Lot 100 DP 1231954.
 - Land uses, including the following primary uses:
 - Block 1 – Mixed use (ie, commercial, hotel, serviced apartments, artisan food and drink industry) and advertising structures;
 - Block 2 – Logistics and Mixed use (ie, commercial, hotel, serviced apartments);
 - Block 3A – Logistics;

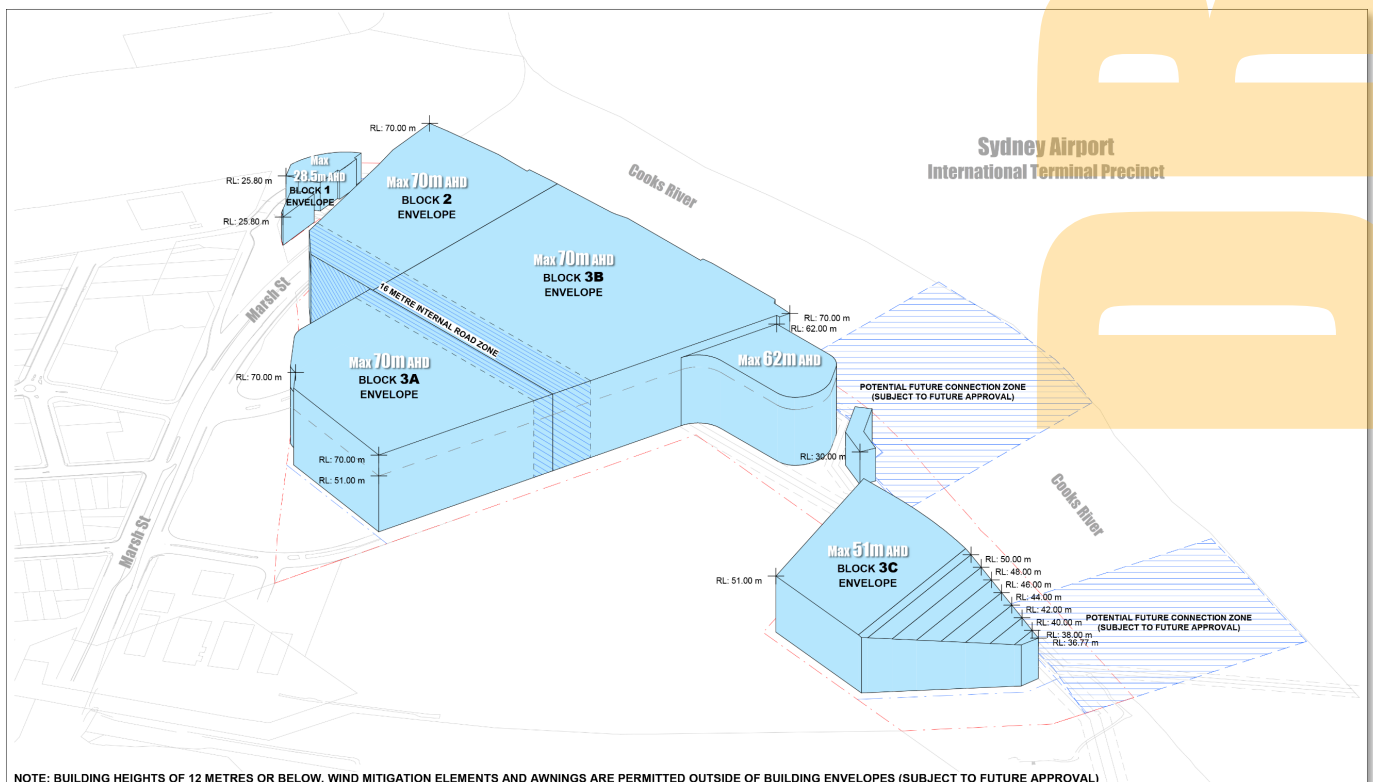
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- Block 3B – Logistics; and
 - Block 3C – Logistics and Data centre.
 - Urban Design Guidelines to guide future development of the built form and public domain; and
 - Strategies and mitigation measures to manage potential environmental impacts.
- **Early Works** to support the future delivery of built form and publicly accessible open space, including:
- Site preparation works, comprising:
 - Demolition of existing structures;
 - Clearing of existing vegetation and removal of existing ponds;
 - Remediation works; and
 - Bulk earthworks, including ground improvement, flood mitigation and foreshore works.
 - Site servicing and infrastructure works, including:
 - Construction of the Flora Street East extension consistent with Item 3 of the executed Voluntary Planning Agreement with Bayside Council;
 - Construction of stormwater infrastructure; and
 - Construction and augmentation of service and utility infrastructure as necessary.
 - Construction of a temporary on-grade parking area.

For a detailed description, refer to the Environmental Impact Statement prepared by Colliers Urban Planning.

2.4 Concept Masterplan & Indicative Reference Schemes

Figure 2-2: SSDA Concept Envelope — Block Plan in 3D



Source: Grimshaw Architects, Drawing A99 7002 (Rev P07), Annotated by StratAir

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For aviation impact assessment, the Concept Masterplan block envelopes — as depicted in Figure 2-2 above — are used as the main reference.

The Concept Masterplan is supported by Indicative Reference Schemes that present as ‘proof of concepts’ within the proposed planning framework. The schemes demonstrate suitable primary land use, built form and public domain outcomes that align with the vision for a world-class precinct that leverages the site’s strategic location adjacent to Sydney Airport and strong transport connections.

The Indicative Reference Schemes consider different potential development outcomes enabled by the Concept Masterplan to support the delivery of the highest and best use at the time of redevelopment. This includes a Logistics scheme and Alternative Uses scheme, which facilitate the potential for four (4) different primary land use outcomes across the Site. The alternative land use outcomes enabled by the Concept Masterplan include an alternative mixed-use outcome on Block 2 and alternative data centre outcome on Block 3C.

The Indicative Reference Schemes are established in Figure 2-3 below, with the Logistics scheme and Alternative Uses scheme prepared by Grimshaw depicted in Figure 2-4 and Figure 2-5.

It is noted that the Indicative Reference Schemes are indicative only and the development of future built form and publicly accessible open space will be subject to future Development Applications. The Indicative Reference Schemes demonstrate the ability to support different potential outcomes, consistent with the proposed framework under the Concept Masterplan including Urban Design Guidelines.

Figure 2-3: Indicative Reference Schemes



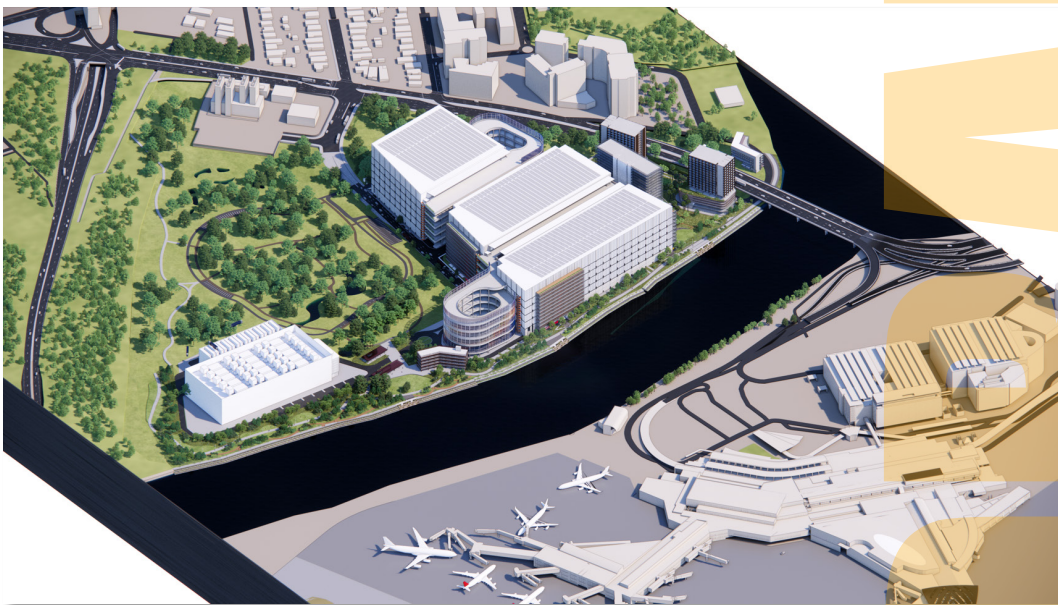
Source: Grimshaw

Figure 2-4: Indicative Reference Scheme — Logistics



Source: Grimshaw

Figure 2-5: Indicative Reference Scheme — Alternative Uses Scheme



Source: Grimshaw

2.5 Site Location & Context

The site is located in the north-west quadrant formed by the northern end of the western parallel runway, RWY 16R/34L, and the extended runway centreline west of the short cross runway, RWY 07/25. The closest and most relevant runway ends are the landing thresholds RWY 16R and RWY 07, as indicated in Figure 2-6 below.

Figure 2-6: Project Site in relation to Sydney Airport & Closest Runways

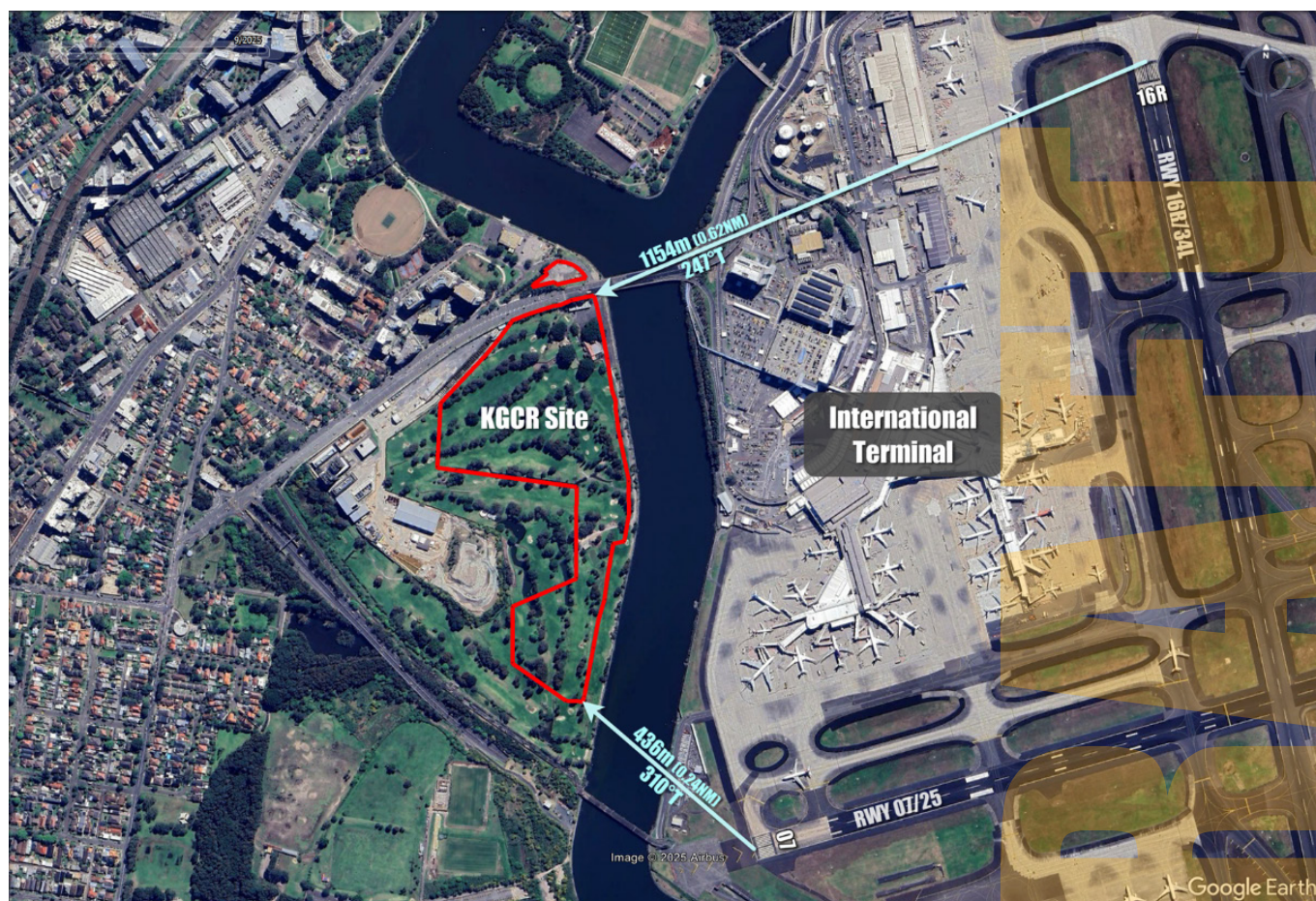


Table 2-2: Site in Relation to Sydney Airport & Relevant Runways

Closest point of the Site to... Reference Point	Distance Metres (m)	Nautical Miles (NM)	Bearing from ... True (°T)	... in Degrees Magnetic (°M)
RWY07 Landing Threshold	436	0.24	310.4	297
RWY16R Landing Threshold	1154	0.62	247.0	234

3. Assessment Criteria

3.1 National Airports Safeguarding Framework (NASF)

The National Airports Safeguarding Framework (NASF) is issued by the Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts. The stated purpose of the NASF is to “*enhance the current and future safety, viability and growth of aviation operations, by supporting and enabling:*

- *the implementation of best practice in relation to land use assessment and decision making in the vicinity of airports and strategic helicopter landing sites;*
- *assurance of community safety and amenity near airports and strategic helicopter landing sites;*
- *better understanding and recognition of aviation safety requirements and aircraft noise impacts in land use and related planning decisions;*
- *the provision of greater certainty and clarity for developers and land owners;*
- *improvements to regulatory certainty and efficiency; and*
- *the publication and dissemination of information on best practice in land use and related planning that supports the safe and efficient operation of airports and strategic helicopter landing sites.”*

While the NASF is a national set of guidelines, it provides the basis for all local/regional regulations in line with the Department’s view that the NASF should “drive improvements in planning outcomes consistently across all jurisdictions and contribute to the improvement of the safety and viability of aviation in Australia”.

3.2 Airports (Protection of Airspace) Regulations (APAR)

The original *Airports (Protection of Airspace) Regulations 1996* framework primarily focused on protecting the prescribed airspace — comprising the Obstacle Limitation Surfaces (OLS) and protection surfaces related to PANS-OPS instrument flight procedures — of a federally-leased airport through a system of controlled activity approvals. Under that regime, developments penetrating prescribed airspace required approval from the Secretary of DITRDCSA, with permanent intrusions into PANS-OPS airspace generally prohibited. The evaluation process, which included consultation with the Civil Aviation Safety Authority (CASA), Airservices Australia and other relevant authorities and stakeholders, considered whether a proposal would interfere with the safety, efficiency or regularity of current and future air transport operations. The framework ensured that proposed buildings, structures, cranes and other activities are assessed for their potential impact on aircraft operations, including obstacle clearance, navigational safety, operational flexibility and future airport development.

The recently published *Airports (Protection of Airspace) Regulations 2026* significantly modernise and expand this framework. The new regulations replace the previous PANS-OPS terminology with the concept of Terminal Instrument Flight Procedure Obstacle Protection (TIFPOP) surfaces and introduce a distinction between “*primary airspace*” and “*secondary*” airspace.

Primary airspace now includes all TIFPOP surfaces together with the more operationally critical OLS surfaces, such as OLS approach, take-off climb and transitional surfaces, as well as any other surface declared to be a primary surface for the relevant airport.

Secondary surfaces comprise the OLS surfaces that can be infringed, subject to approval: these include the Inner Horizontal, Conical and Outer Horizontal surfaces, as well as any surface declared to be a secondary surface for the relevant airport.

The 2026 regulations also materially affect the assessment of building height applications. Under the revised framework, any development proposal that would intrude into primary airspace is classified as a “*sensitive controlled activity*”, and proponents must first obtain permission before even lodging a formal application for approval. Importantly, the regulations now require refusal of any permanent intrusion into primary airspace unless the activity is temporary in nature. In practice, this creates a substantially more restrictive approval pathway for developments affecting operationally critical airspace and places increased emphasis on demonstrating that any intrusion is temporary, operationally manageable, or justified by exceptional circumstances.

The revised regulations also introduce a more differentiated approach to developments affecting secondary airspace, including circumstances where existing terrain already extends into protected surfaces. Overall, the 2026 framework modifies both the terminology and assessment process used under APAR, with a greater degree of procedural distinction between different categories of protected airspace and development impact.

Refer also Section 6 Airspace Height Approval Considerations (p25).

4. Impact Assessment

4.1 Guideline A: Aircraft Noise

The vast majority of the site is within the ANEF 20 & ANEF 25 contours. A very small portion of the Building 3C at the far south of the site falls between the ANEF 25 & ANEF 30 contours.

Figure 4-1: Site in relation to the Sydney Airport Masterplan 2039 ANEF Chart



Source: SACL Masterplan 2039, Map 33, Annotated by StratAir

Figure 4-2: Reference Schemes in relation to the Sydney Airport Masterplan 2039 ANEF Chart Overlay



Source: SACL Masterplan 2039, Map 33, Annotated by StratAir

Section 5.7 of the Noise and Vibration Impact Assessment report¹ provides an assessment of aircraft noise intrusion for the proposed development. Given the potential for noise penetration from aircraft, road traffic, and nearby industrial activity through the building façade, the appropriateness of the intended uses — such as logistics, hotel, office, and

¹ Kogarah Golf Club Redevelopment Noise and Vibration Impact Assessment, Pulse White Noise Acoustics, 28-Nov-2025

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data centre — was reviewed in accordance with the Bayside LEP 2021 and the requirements of AS 2021:2015.

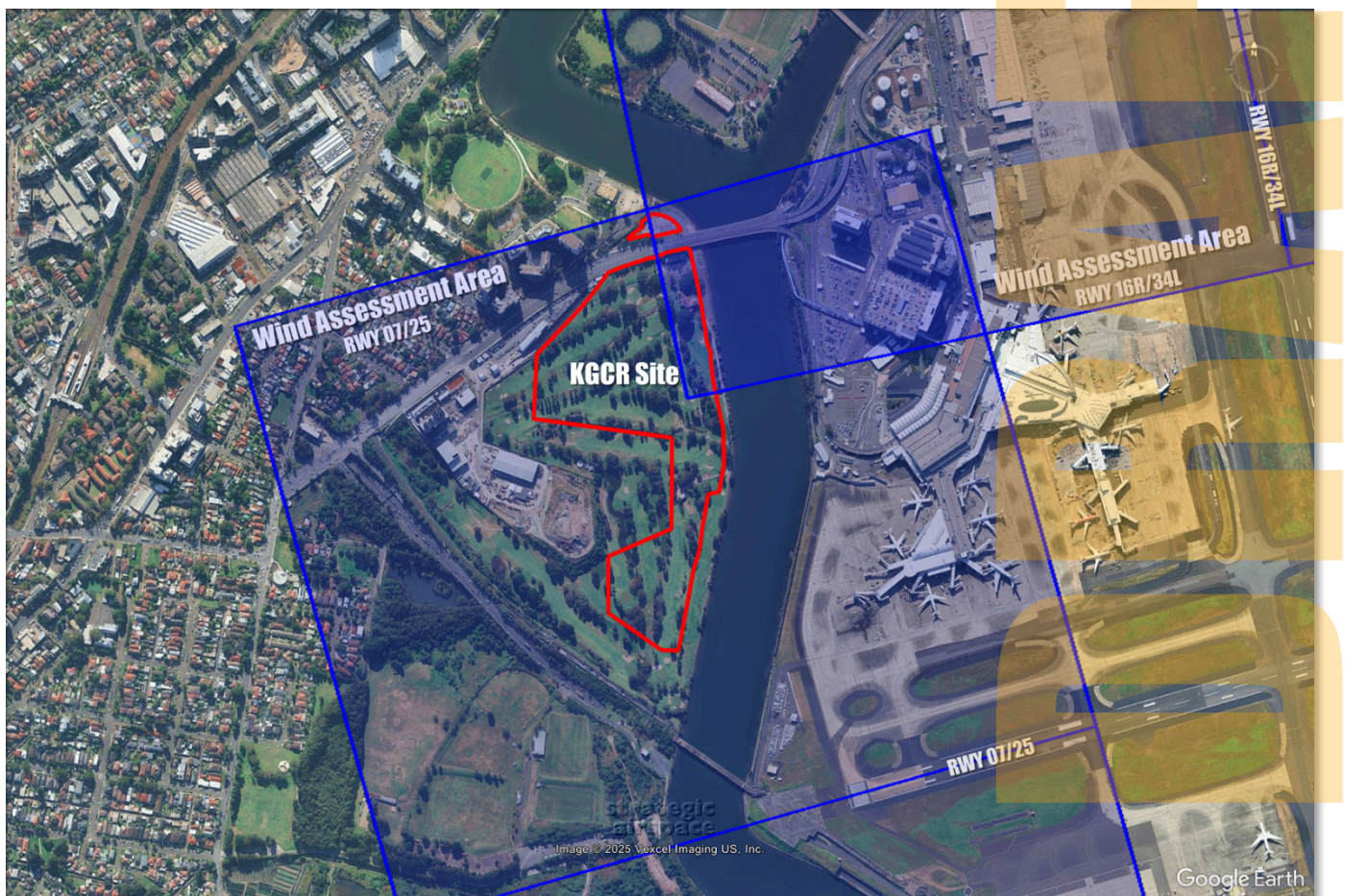
Taking into account the site's distance from the airport runways and the predicted peak aircraft noise levels, the assessment establishes the necessary internal noise limits for each use. It also recommends specific acoustic performance criteria, including required aircraft noise reduction measures and minimum glazing specifications, ensuring the most stringent standards are applied to protect occupant amenity and compliance with regulatory obligations.

The implementation of these guidelines in the final detailed design specifications will ensure that the development complies with the required protections from aircraft noise.

4.2 Guideline B: Windshear & Turbulence

The site and the proposed developments are located within the Windshear and Turbulence Assessment Surfaces defined in the NASF for the landing thresholds of Runways 07 (the western end of RWY 07/25) and 16R (the northern end of RWY 16R/34L — as depicted in the figures below.

Figure 4-3: Site in relation to the Windshear Assessment Areas



Following an earlier qualitative assessment by CPP Wind Engineering Consultants, CPP conducted a wind tunnel study to determine the effect of the proposed Cooks Cove development on wind conditions affecting aircraft operations along the approach flight path to Runway 16R².

2 Wind Shear & Turbulence Assessment (R00, CPP Project 20693) Report, CPP Wind Engineering Consultants, 01-May-2026

For: Stockland

The study found that the proposed development is not expected to adversely affect Runway 07 operations, as the relevant northerly wind directions would typically favour the use of Runways 34L/R due to their greater capacity and more favourable along-wind conditions. The proposed developments on the north-eastern sector of the site, within the assessment area for building induced wind shear and turbulence for Runway 16R penetrates the 1:35 surface.

The proposed development had a minimal impact on the required 3s gust wind speed at anemometer height to exceed the wind shear criteria, which remain in excess of 46 kt at all locations. The 3s gust wind speed at anemometer height to exceed the turbulence criterion remain above the general cross-flight operational wind speed component of 20 kt for wind directions of 235.5° and 258° while exceeding for 213° in both existing and proposed configuration. The minimum value of 24 kt were found at a few locations for wind directions of 213° and 258°. No significant impact on turbulence along the RWY16R centreline was observed.

The results confirm that the built form proposed to a maximum height of RL 70m AHD (ie, Block 2 and Block 3B envelopes) within the RWY16R windshear assessment area does not exceed the established criteria in published guidelines and therefore does not pose a significant risk on airport operational safety and regulations. Furthermore, the existing wind conditions with no development were tested and no significant deviations were observed when comparing pre and post development configurations. On that basis, the proposed built form will not have an unacceptable effect on the safety of existing or future air transport operations into or out of Sydney Airport.

Figure 4-4: Reference Schemes in relation to the Windshear Assessment Areas



4.3 Guideline C: Wildlife

The site is wholly within the 3km wildlife buffer zone defined in the NASF. This is an area defined as being most sensitive to the potential impact by new developments and changed land uses on wildlife hazards and most critically, the risk of bird strikes on aircraft.

Bayside Council, in its October 2023 response to the Planning Proposal, stated that it strives to enhance tree canopy coverage within its LGA and supports the provision of as many trees as feasible. This echoes the NSW Government's directive to increase tree canopy to 40% coverage, that vegetation and landscape planting must be designed to contribute to growth in Bayside's urban forest, provide shade and reduce urban heat, provide amenity, and encourage habitat and food for native fauna, and their preference for ensuring only local native plants are used.

Unfortunately, in this particular location, so close to the airport and especially to the western end of RWY 07/25, these objectives compete with the need to minimise the risk of wildlife strike to aircraft.

This is recognised as a critical safety issue in the Biodiversity Development Assessment Report prepared by Cumberland Ecology. It states that the detailed design mitigation measures involving habitat creation and plantings along the Cooks River foreshore will be subject to consultation with Sydney Airport to help ensure that the wildlife hazard is minimised and that suitable mitigation measures will be put in place.

4.4 Guideline D: Wind Turbines (N/A)

Not applicable.

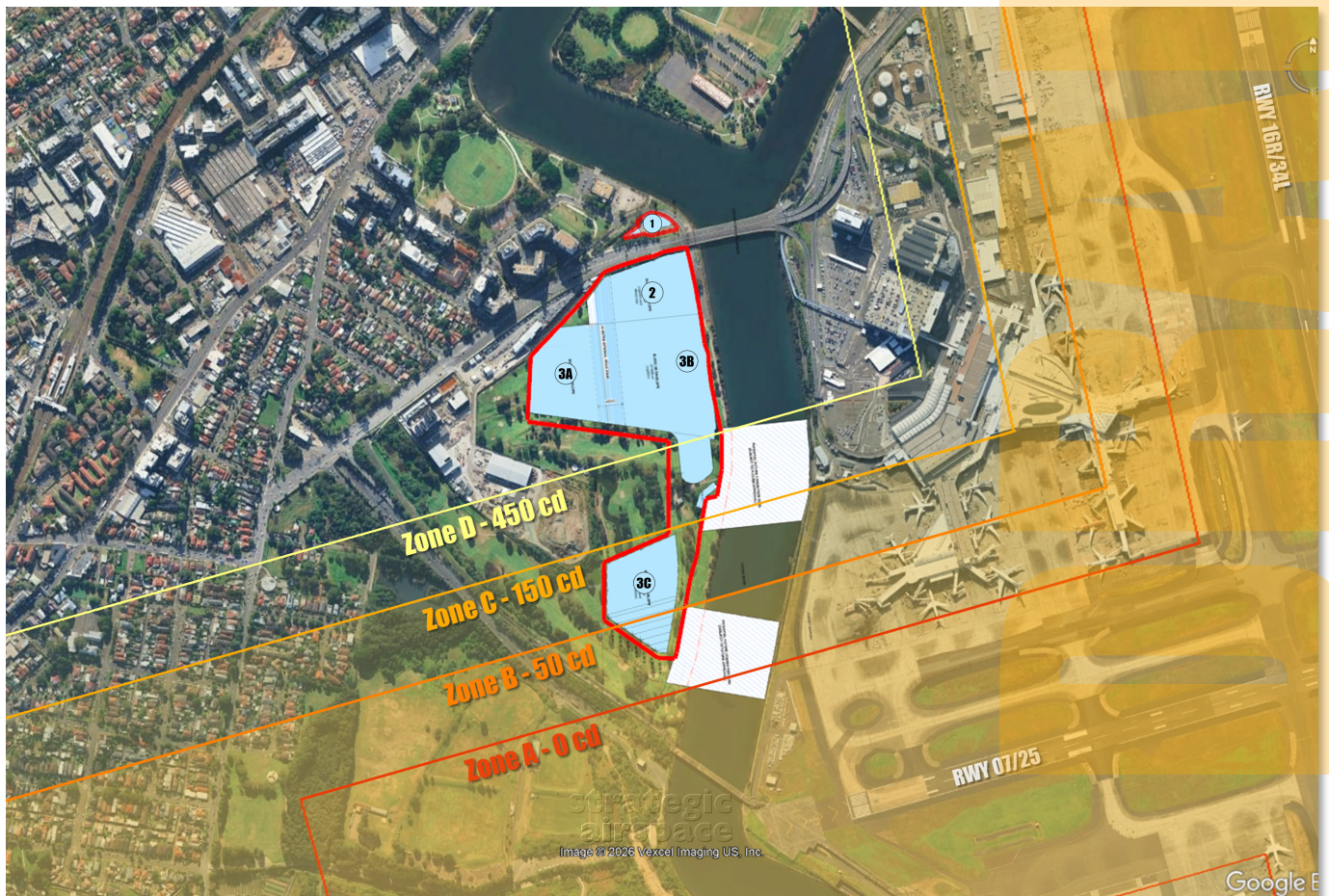
4.5 Guideline E: Lighting Distractions to Pilots

There are two different types of lighting assessment areas: one defined as a radius around the airport, and the other being a set of External Lighting Control Zones (LCZs) based on the runways themselves.

All areas fall within the 6 km lighting assessment radius. The connection with the existing Marsh Street, located to the north of the site, will have no impact. The internal roads situated in the quadrant between the two nearest runways are effectively shielded by the lighting of the international terminal building, as well as the associated apron areas and aircraft parking stands—except for aircraft approaching from the west to RWY 07. In that case, the internal roads remain largely shielded by the proposed development's own buildings.

External Lighting Control Zones are designated areas established to minimise lighting distractions for pilots. These zones regulate the intensity of artificial lighting above a certain angle to prevent glare or light spill that could impair pilot visibility or interfere with safe aircraft operations during approach, landing, and take-off. Each zone is defined by an intensity limit (in candelas, cd) when measured 3° above the horizontal.

Figure 4-5: Site in relation to the External Lighting Control Zones



Source: Grimshaw Architects, Drawing A99 7001 (Rev P08), Airspace & Annotations by StratAir

Only the southern half of the site is affected by the external lighting control zones, related to RWY 07/25 only, as noted in Table 4-1 below and depicted in Figure 4-5 above. The impact of the external lighting control zones in relation to the Reference Schemes is illustrated in Table 4-1 below (p18).

Figure 4-6: Reference Schemes in relation to the External Lighting Control Zones



Table 4-1: Portions of Site Affected by External Lighting Control Zones

Zone	Max Candela at 3° above the Horizontal	Affected Portion of Site & Buildings
A	0	N/A
B	50	Southern tip of site. The very southern corner of Building 3C and related roads and parking areas may potentially be constrained by Zone B intensity limits.
C	150	The majority of the southern portion of the site. Affects the majority, if not all, of Building 3C and related roads and parking areas.
D	450	The vehicle access ramp at the bottom of Block 3B and the central connection portion of the site. Affects all buildings, roads and parking in this area. It may affect the very southern corners of Building 3B, subject to final detailed design.
NIL	N/A	Northern part of the site

All external lighting within the site will be designed and installed to comply with the intensity constraints specified for the relevant external lighting control zone. In particular, external lighting facilities will not exceed the candela limits when measured at 3° above the horizontal for the relevant zone.

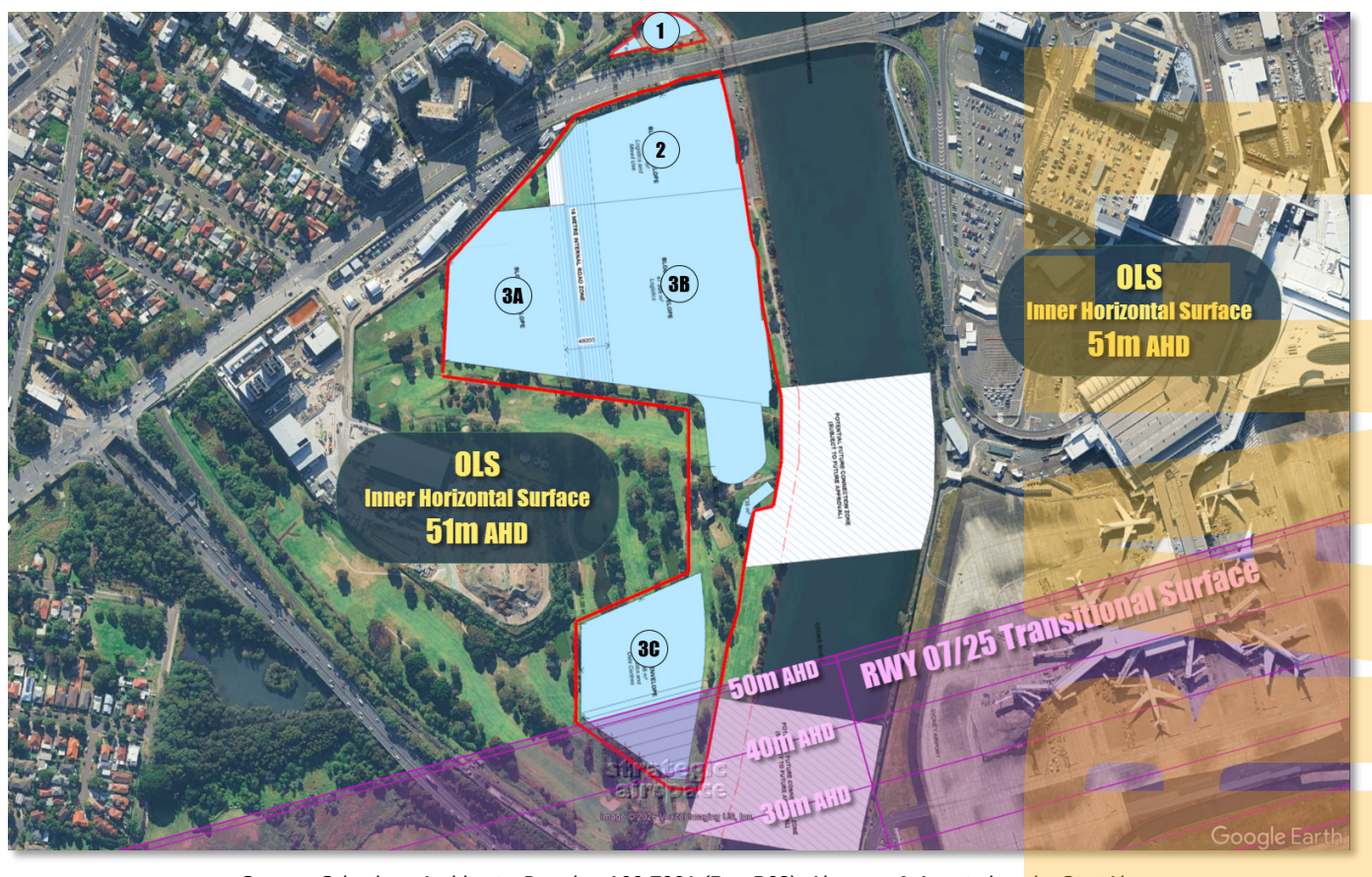
4.6 Guideline F: Protected Airspace

4.6.1 Obstacle Limitation Surfaces (OLS)

The site sits partially under the OLS Transitional Surface for approaches to RWY 07, with most of the site sitting under the Inner Horizontal Surface (IHS).

The transitional surface slopes up until it meets the IHS, which is a flat surface at an elevation of 51m AHD.

Figure 4-7: Site in relation to the Sydney Airport OLS



Source: Grimshaw Architects, Drawing A99 7001 (Rev P08), Airspace & Annotations by StratAir

The location of the site and the SSDA block envelopes in relation to the OLS is depicted in Figure 4-7 above.

The height clearances or infringements (penetrations) of the maximum block envelope elevations in relation to the respective OLS surfaces is summarized in Table 4-2 below.

Table 4-2: The OLS & SSDA Block Envelope Impacts

SSDA Envelope	Max Height Proposed (m AHD)	OLS Surface	OLS Height (m AHD)	Clearance / Penetration (m)
Block 1	25.8	IHS	51.0	25.2
Block 2, Block 3A & Block 3B	70.0	IHS	51.0	-19.0
Vehicle Access Ramps SE of Block 3B	62.0	IHS	51.0	-11.0
Building between Blocks 3B & 3C	30.0	IHS	51.0	21.0

SSDA Envelope	Max Height Proposed (m AHD)	OLS Surface	OLS Height (m AHD)	Clearance / Penetration (m)
Block 3C — Northern Part	51.0	IHS	51.0	0
Block 3C — Southern Part	Slopes down	Transitional	51.0 - 37.5	Clear, below Surface

Note that infringement of the OLS Inner Horizontal Surface — by Blocks 2, 3A and 3B — does not preclude airspace approval of the proposed buildings³.

They are technically approvable if they are below the most constraining of the PANS-OPS surface overhead and it is demonstrated that construction equipment (eg, cranes) and activities will not adversely affect the safety, regularity and efficiency of PANS-OPS instrument flight procedures. That said, approvability may also be subject to acceptability of the final designs and potential construction impact when assessed against other NASF criteria, principally Guideline B: Windshear & Turbulence (refer Section 4.2 above, p14) and Guideline G (Building Restricted Area protections for CNS) (refer Section 4.7 below, p22).

4.6.2 Protection of PANS-OPS Terminal Instrument Flight Procedure Surfaces (TIFPOPs)

A recent redesign of the airspace around the Sydney Basin for the introduction of the Western Sydney International Airport (YSWS) prompted many changes to the procedures for Sydney Kingsford Smith Airport (YSSY)⁴. An initial assessment of the revised procedures indicates that the protection surface for the RNP VNAV PANS-OPS approach procedure to RWY 16R will be the most restrictive TIFPOP surface affecting the site. With a lowest height of 70.59m AHD over the southeastern part of the site, this surface is marginally above the maximum proposed building height and may necessitate a temporary height approval for cranes to be used for construction of the upper levels of the Block 3C buildings.

Detailed modelling and verification are currently in progress and will be incorporated into an update of or supplement to this Aeronautical Impact Assessment (AIA) report to confirm full compliance with aviation safety requirements.

4.6.3 Radar Terrain Clearance Chart (RTCC) Surfaces

The RTCC sector over the site is related to the 1500ft Minimum Vector Altitude (MVA) sector used by ATCs for vectoring aircraft. This results in an RTCC surface height limit of 152.4m AHD.

³ In terms of the APAR 2026, the Inner Horizontal Surface is regarded as a secondary surface. Structures or things which infringe a secondary surface can be approved as Controlled Activities under APAR 2026.

⁴ The new procedures will come into effect coincident with the introduction of the first set of PANS-OPS procedures for Western Sydney Airport. Refer also Appendix 2 – PANS-OPS Procedures (p32).

4.6.4 Other Height Assessment Considerations

The following table provides a brief assessment of other considerations.

Table 4-3: Other Height Limitations Assessed

Procedure	Height Limit (m AHD)	Description
Airlines Engine Out Procedures	N/A	Engine Out procedures (for the most relevant take-off runway ends for these procedures) are designed and maintained by each of the passenger transport aircraft operators in accordance with the relevant regulations and Civil Aviation Order (CAO 20.7.1B). Considering the location of the site, and existing obstacles along the flight paths, these contingency procedures would not be adversely affected by the proposed development. <i>It is also noted that these are not covered by NASF, nor are they explicitly included in the APAR. These are aircraft operator responsibilities only and have been assessed simply for additional context.</i>

4.6.5 Future Construction Considerations

Considering the minimal clearance between the proposed building and the applicable TIFPOP surfaces, cranes may be required to temporarily exceed one or more surfaces during limited stages of the construction process in order to complete works at roof level. Under the APAR 2026, such works would be assessed as a temporary sensitive controlled activities within primary airspace. In this regard, the temporary nature of the crane operations, including the duration, operating heights and construction staging methodology, would form key considerations in the approval process. Subject to consultation with Sydney Airport, CASA and Airservices Australia, temporary crane penetrations may be considered acceptable where it can be demonstrated that the works can be undertaken without significant interference to airport operations and with appropriate mitigations, including management, operational and safety controls, in place.

Refer also to Section 5 Summary of Potential Impact of Construction Activities & Equipment (p24).

4.7 Guideline G: Communication, Navigation and Surveillance (CNS)

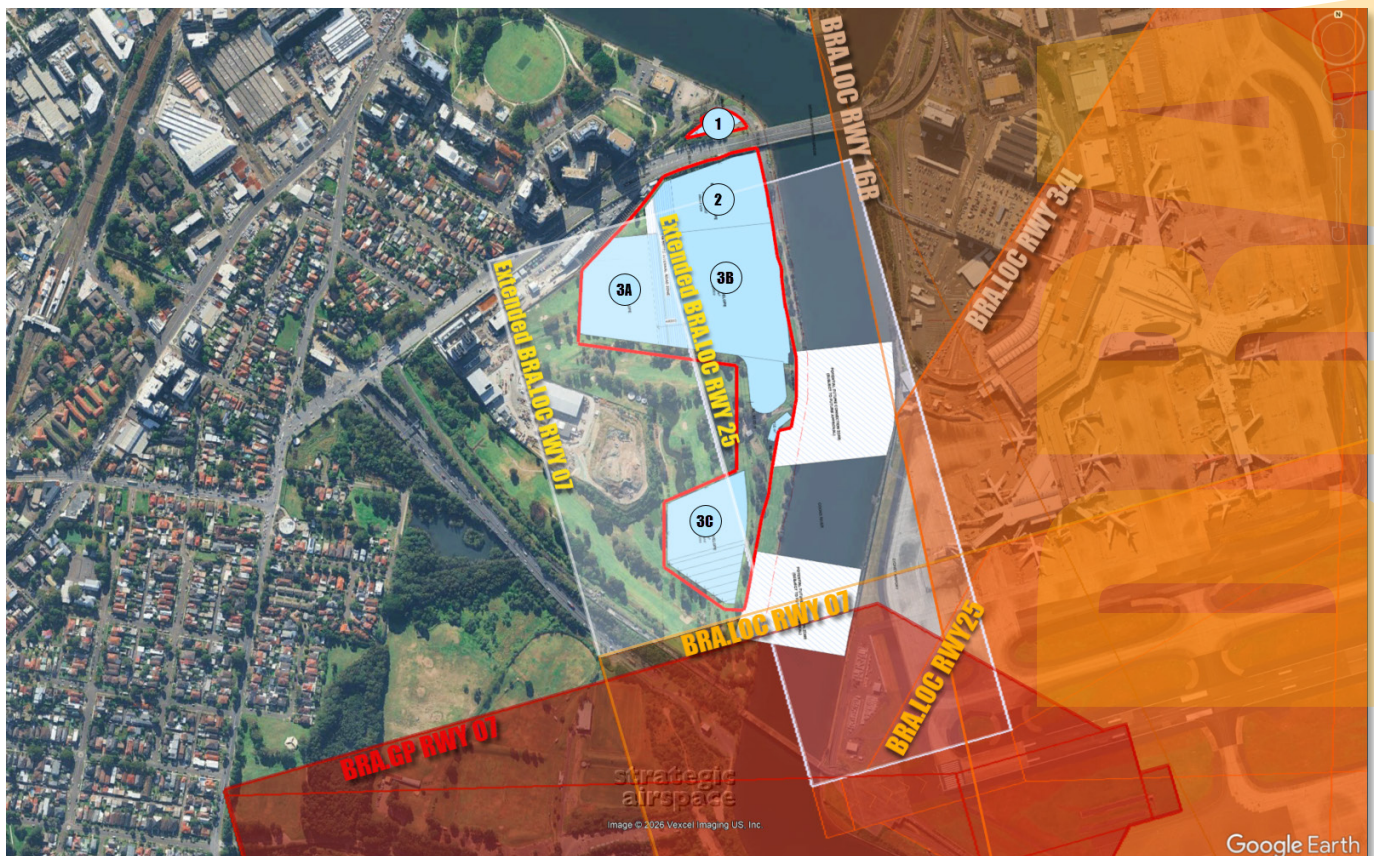
The site is outside all BRA (Building Restricted Areas) surfaces, which are the assessment areas associated with communication, navigation and surveillance equipment.

There are two relevant types of Building Restricted Area (BRA) assessment surfaces defined in the NASF — both BRAs related to the Instrument Landing System (ILS) guidance systems used for precision landings on the closest runways, RWY 07/25 and RWY 16R/34L. The 2 types of BRA are for the Instrument Landing System's Localizer (LOC) and Glidepath (GP), hereafter referred to as BRA.LOC and BRA.GP respectively.

Aside from the defined BRA surfaces, there is an additional general guidance related to the BRAs protecting the localizers (BRA.LOC). The guidance specifies that “*all buildings within 1,000m of the runway centreline, which have a vertical wall facing the runway that exceeds 2,000m² in area and a height more than 20m above the Localizer ground level*” requires assessment by Airservices Australia. The general guidance is relevant to the protection of the localizers for RWYs 07 and 25, which have a BRA surface of only 350m either side of the runway.

Figure 4-8 below illustrates the extent of the 1000m assessment criteria for both RWYs 07 and 25 (annotated as *Extended BRA Localizer RWYxx*)

Figure 4-8: Site in relation to the Sydney Airport BRA Surfaces



Source: Grimshaw Architects, Drawing A99 7001 (Rev P08), Airspace & Annotations by StratAir

Considering the majority of the site is within 1000m from the centreline of RWY 07/25, any large buildings will ultimately require detailed assessment by Airservices Australia

4.8 Guideline H: Strategic Helicopter Landing Sites (SHLS)

The proposed development does not include a provision for any new helicopter landing sites (HLS) within the site.

There are no known Strategic Helicopter Landing Sites (SHLS⁵) in the vicinity of the site. The Sydney Airport helicopter landing sites (HLS) are on the eastern side of the aerodrome, away from the project site. There will be no impact on existing helicopter flight paths to/from the Sydney Airport HLS as the project site will be effectively shielded by the International Terminal Building and other taller apartment buildings at Wolli Creek (to the north of the project site).

4.9 Guideline I: Public Safety Area (SEPP c4.23)

No Public Safety Area (PSA) has been published for Sydney Airport. However, if the PSA parameters applied at Western Sydney Airport were used as a reference, the project site would be located outside of (to the north) of the PSA associated with the western end of RWY 07/25.

⁵ A SHLS is a site declared by a state or territory to be of critical need to the provision of identified services. These may include an HLS associated with a hospital; an elevated HLS, located within a populated area; an HLS subject to instrument flight procedures; or any other facility identified as strategic by State/Territory or Commonwealth government/authorities.

5. Summary of Potential Impact of Construction Activities & Equipment

The concept envelopes have been designed to fulfil the operational and functional requirements of the development whilst also considering the prescribed airspace. That said, Blocks 2, 3A and 3B would infringe the applicable OLS, a secondary surface (refer section 4.6.1 and Table 4-2, p19) and would therefore require approval of an application for these buildings as controlled activities under the APAR. The Block 1 and Block 3C envelopes would not infringe the applicable OLS surfaces.

As noted in section 4.6.5 above (p21), based on preliminary analysis of the PANS-OPS terminal instrument flight procedures, there will be a minimum clearance between the maximum heights of the concept envelopes for Blocks 2, 3A and 3B which infringe the OLS and the applicable TIFPOP surfaces.

During construction, cranes may be required to temporarily exceed the applicable TIFPOP surface during limited stages of the works in order to complete roof-level construction activities and installation of upper building elements. Under the APAR 2026 framework, such temporary crane operations would constitute sensitive controlled activities within primary airspace due to the temporary intrusion into the TIFPOP surface. In this regard, the assessment would consider the extent, duration and frequency of the proposed crane penetrations, together with the proposed construction methodology and the potential impacts on existing and future aircraft operations. Further, any such temporary intrusions approved would most likely be limited in duration.

To minimise impacts on the applicable OLS and TIFPOP surfaces, construction staging measures may be implemented to reduce both the duration and extent of crane penetrations. This may include substantial use of mobile cranes (where boom arms can be extended as required and contracted on short notice), positioning cranes in lower portions of the site where practicable, limiting boom elevations and slew areas when cranes are not actively operating, and progressively transitioning crane operations onto completed upper floor levels as construction advances in order to reduce the required crane height above ground level. Consideration may also be given to the use of smaller crawler cranes or other low-profile lifting methodologies for final roof-level works and façade installation activities where feasible.

Subject to consultation with Sydney Airport, CASA and Airservices Australia, temporary crane penetrations may be capable of being managed through appropriate operational controls, which may include restrictions on crane operating periods or maximum operating heights, obstacle lighting and marking requirements, advance notification procedures, and implementation of construction or airspace management protocols to minimise operational impacts during the construction phase. In addition, Sydney Airport may, where appropriate, agree to the temporary raising of procedure minima for instrument flight procedures that are not frequently utilised, thereby further mitigating any residual operational impacts associated with the proposed crane activities.

5.1 Preliminary Construction Management Plan

Details of the proposed construction methodology, including information on crane types, crane plans, and so forth are pending, and will be provided in an update of or supplement to this AIA report.

6. Airspace Height Approval Considerations

Conditions for approvability of the proposed development expressed in the APAR are based on the maximum development heights of relevant blocks in relation to the prescribed airspace of the airport, as well as other potentially influencing factors (a key one being the feasibility of constructing in terms of impact on airspace operations), the final arbiter being a judgement by Sydney Airport, CASA, Airservices Australia and DITRDCSA as to whether or not the proposal would or would not adversely affect the safety, regularity and efficiency of current and future air transport operations at the airport.

As part of the approval process, applicants are required to provide sufficient information demonstrating that both the permanent development and associated construction activities proposed, including crane operations and temporary construction equipment, would not adversely impact the prescribed airspace or interfere with existing or future aircraft operations. This typically includes assessment of the extent, duration and operational impact of any proposed airspace penetrations, together with supporting technical documentation and proposed construction methodologies and plans. In the case of temporary crane intrusions into TIFPOP airspace, consideration is generally given to whether the activity is temporary in nature and whether it can be undertaken without significant interference to airport operations, potentially subject to operational conditions and/or mitigation measures.

The final decisions on controlled activity applications for the proposed development rests with DITRDCSA, having regard to submissions and advice provided by the airport operator, CASA, Airservices Australia and other relevant stakeholders. Applications for approval must comply with the Airports (Protection of Airspace) Regulations 2026, which commenced on 1 April 2026.

Note also that separate applications for approval of any and all construction equipment that would infringe the prescribed airspace will need to be sought at the appropriate time in advance of construction of the respective parts of the development. Such applications should be supported by contemporary AIAs based on final CMPs for the relevant activities and the airspace relevant at that time.

7. Conclusion

Based on the assessment, the proposed development would not negatively impact the safety and continuity of Sydney Airport operations, subject to observance of the External Lighting Control Zone constraints in building and construction contracts, and acceptance of the potential construction impact by Sydney Airport and Airservices Australia.

While portions of the proposed development would penetrate the Sydney Airport OLS Inner Horizontal Surface and therefore require approval under the Airports (Protection of Airspace) Regulations 2026, the proposed permanent building envelopes will remain below the limiting TIFPOP surfaces currently identified for the site. Temporary crane operations during construction may require separate approval as controlled or sensitive controlled activities within secondary or primary airspace — however such activities are considered capable of being managed through appropriate construction methodologies, operational controls and consultation and cooperation with the relevant aviation stakeholders.

Taking these factors into consideration, and subject to compliance with any further requirements imposed by Airservices Australia with regard to impacts on affected terminal instrument flight procedures during construction, **there is no technical impediment to approval of the proposed development under the APAR** — and therefore, potential aviation impact is not considered a barrier to approval of the SSDA.

APPENDICES

APPENDIX 1 — ABBREVIATIONS

For: **Stockland**

Abbreviations used in this report and/or associated reference documents, and the meanings assigned to them for the purposes of this report are detailed in the following table:

Abbreviation	Meaning
AC	Advisory Circular (document supporting CAR 1998)
ACFT	Aircraft
AD	Aerodrome
AGL	Above Ground Level (Height)
AHD	Australian Height Datum (in Metres); Equivalent to an RL
AHT	Aircraft Height
AIP	Aeronautical Information Publication
Airports Act	Airports Act 1996, as amended
AIS	Aeronautical Information Services
ALARP	As Low As Reasonably Practicable
ALC	Airport Lease Company
Alt	Altitude
AMAC	Australian Mayoral Aviation Council
AMSL	Above Minimum Sea Level
ANEF	Australian Noise Exposure Forecast
ANSP	Airspace and Navigation Service Provider
APCH	Approach
APAR / APARs	Airports (Protection of Airspace) Regulations, 2026 as amended <i>These replaced the APAR 1996 on 1st April 2026</i>
ARP	Aerodrome Reference Point
AsA	Airservices Australia
ASDA	Accelerated Stop Distance Available
ATC	Air Traffic Control(ler)
ATM	Air Traffic Management
BA (Planning)	Building Application or Building Approval (Planning)
CAAP	Civil Aviation Advisory Publication
CAO	Civil Aviation Order
CAR	Civil Aviation Regulation
CASA	Civil Aviation Safety Authority
CASR	Civil Aviation Safety Regulation
Cat	Category
CBD	Central Business District
Cd	Candelas
CEMP	Construction Environmental Management Plan (see also CMP)
CG	Climb Gradient
CMP	Construction Management Plan (see also CEMP)
CNS/ATM	Communications, Navigation, Surveillance / Air Traffic Management
CoS	City of Sydney (Council)
DA (Aviation)	Decision Altitude (Aviation)
DA (Planning)	Development Application or Development Approval (Planning)
DAH	Designated Airspace Handbook
DAP	Departure and Approach Procedures (published by AsA)
DEP	Departure

Abbreviation	Meaning
DER	Departure End of Runway
DEVELMT	Development
DH	Decision Height
DITRDCSA	Department of Infrastructure, Transport, Regional Development, Communications, Sports & the Arts (Commonwealth) (former abbreviations include DIRD, DIRDC, DITCRD, DITRDC, DITRDCA)
DME	Distance Measuring Equipment
Doc nn	ICAO Document Number nn
DoD	Department of Defence
DODPROPS	Dependent Opposite Direction Parallel Runway Operations
DPE	Department of Planning & Environment (NSW). now DPHI
DPHI	Department of Planning, Housing & Infrastructure (NSW), formerly DPE
EIS	Environmental Impact Study
ELEV	Elevation (above mean sea level)
ENE	East North East
ERSA	EnRoute Supplement Australia
ESE	East South East
FAF	Final Approach Fix
FAP	Final Approach Point
Ft	Feet
GDA2020	Geocentric Datum of Australia 2020
GDA94	Geocentric Datum of Australia 1994
GLS	GNSS Landing System – a precision landing system like ILS but based on augmented GNSS using ground and satellite systems.
GNSS	Global Navigation Satellite System
GP	Glide Path
HDA	Housing Development Authority (of the NSW DPHI)
HIAL	High Intensity Approach Light
HLS	Helicopter Landing Site
HOB	Height of Buildings
IAS	Indicated Air Speed
ICAO	International Civil Aviation Organisation
IFR	Instrument Flight Rules
IHS	Inner Horizontal Surface, an Obstacle Limitation Surface
ILS	Instrument Landing System, a precision approach landing system
IMC	Instrument Meteorological Conditions
ISA	International Standard Atmosphere
IVA	Independent Visual Approach
Km	Kilometres
Kt	Knot (one nautical mile per hour)
LAT	Latitude
LDA	Landing Distance Available
LEP	Local Environment Plan (Planning
LLZ / LOC	Localizer
LNAV	Lateral Navigation

For: Stockland

Abbreviation	Meaning
LONG	Longitude
LSALT	Lowest Safe ALTitude
M	Metres
MAPt	Missed Approach Point
MDA	Minimum Descent Altitude
MDH	Minimum Descent Height
MDP	Major Development Plan
MGA2020	Map Grid Australia 2020, based on GDA2020
MGA94	Map Grid Australia 1994, based on GDA94
MOC	Minimum Obstacle Clearance
MOCA	Minimum Obstacle Clearance Altitude
MOS	Manual Of Standards, published by CASA
MP	Master Plan
MSA	Minimum Sector Altitude
MVA	Minimum Vector Altitude
NASF	National Airports Safeguarding Framework
NDB	Non-Directional Beacon
NE	North East
NM	Nautical Mile (= 1.852 km)
nnDME	Distance from the DME (in Nautical Miles)
NNE	North North East
NNW	North North West
NOTAM	NOTice to AirMen
OAR	Office of Airspace Regulation
OCA	Obstacle Clearance Altitude (in this case, in AMSL)
OCH	Obstacle Clearance Height
ODPROPS	Opposite Direction Parallel Runway OPERations
OHS	Outer Horizontal Surface, an Obstacle Limitation Surface
OLS	Obstacle Limitation Surface, defined by ICAO Annex 14; refer also CASA MOS Part 139
PANS-OPS	Procedures for Air Navigation – Operations, ICAO Doc 8168; refer also CASA MOS Part 173 See also TIFP and TIFPOP
PAPI	Precision Approach Path Indicator (a form of VGSI)
PBN	Performance Based Navigation
PRM	Precision Runway Monitor
RAAF	Royal Australian Air Force
REF	Reference
RL	Relative Level
RNAV	aRea NAVigation
RNP	Required Navigation Performance
RNP AR	Required Navigation Performance – Authorisation Required
RPT	Regular Public Transport
RTCC	Radar Terrain Clearance Chart (refer also MVA)
RWY	Runway
SACL	Sydney Airport Corporation Limited

For: Stockland

Abbreviation	Meaning
SHLS	Strategic Helicopter Landing Site
SID	Standard Instrument Departure
SODPROPS	(Independent) Simultaneous Opposite Direction Parallel Runway Operations
SSD	State Significant Development
SSDA	State Significant Development Application
SSP	State Significant Precinct
SSR	Secondary Surveillance Radar
STAR	STandard Arrival
SYD	Sydney International Airport
TAR	Terminal Approach Radar
TAS	True Airspeed
TC	Tower Crane
TfNSW	Transport for NSW
THR	THReshold (of Runway)
TIFP	Terminal Instrument Flight Procedure (generally relates to a PANS-OPS instrument flight procedure)
TIFPOP	Terminal Instrument Flight Procedure Obstacle Protection — a surface equivalent to the obstacle protection surface of a PANS-OPS procedure designed under CASR MOS Part 173 design criteria. Introduced in the Airports (Protection of Airspace) Regulations 2026
TMA	TerMinal Area
TNA	Turn Altitude
TODA	Take-off Distance Available
TORA	Take-Off Runway Available
VFR	Visual Flight Rules
VIS	Visual
VMC	Visual Meteorological Conditions
V _n	Aircraft critical velocity reference
VNAV	Vertical Navigation
VNC	Visual Navigation Chart
VOR	Very high frequency Omni-directional Range
VSS	Visual Segment Surface
VTC	Visual Terminal Chart
WAM	Wide-Area Multilateration
WGS84	World Geodetic System 1984
WNW	West North West
WSW	West South West
WSA Co	Western Sydney Airport Co Ltd, operators of WSI
WSI	Western Sydney International (Nancy-Bird Walton) Airport
YSSY	ICAO Identifier for Sydney International Airport
YSWS	Western Sydney International Airport ICAO 4-letter airport code for the airport

APPENDIX 2 – PANS-OPS PROCEDURES

For: Stockland

PANS-OPS Instrument Flight Procedures (TIFPs) for Sydney Airport (SYD / YSSY)

The versions of the TIFPs consulted during airspace assessment were sourced from the Australian AIP Amendment 187, effective from 09-Jul-2026 to 02-Sep-2026, current as of the date of this report — as indicated in Table 7-1 below.

As noted above, virtually all procedures for Sydney Airport have undergone change as a result of the impact of the introduction of new procedures for Western Sydney Airport (WSI / YSWs) to come into effect on same date.

Table 7-1: Appendix: PANS OPS Instrument Flight Procedure Charts for YSSY
(AIP Amendment 187 – Effective 09-Jul-2026 to 02-Sep-2026)

SYDNEY/KINGSFORD SMITH (YSSY)

Chart	Effective Date	(Amdt No)
AERODROME CHART - PAGE 1	09-Jul-2026	(Am 187)
AERODROME CHART - PAGE 2	09-Jul-2026	(Am 187)
AERODROME GROUND MOVEMENT CHART	09-Jul-2026	(Am 187)
APRON CHART - DOMESTIC PAGE 1	19-Mar-2026	(Am 186)
APRON CHART - DOMESTIC PAGE 2	04-Sep-2025	(Am 184)
APRON CHART - DOMESTIC PAGE 3	28-Nov-2024	(Am 181)
APRON CHART - DOMESTIC PAGE 4	19-Mar-2026	(Am 186)
APRON CHART - INTERNATIONAL PAGE 1	09-Jul-2026	(Am 187)
APRON CHART - INTERNATIONAL PAGE 2	09-Jul-2026	(Am 187)
STANDARD DOMESTIC TAXI ROUTES - ARRIVALS	16-Jun-2022	(Am 171)
STANDARD DOMESTIC TAXI ROUTES - DEPARTURES	16-Jun-2022	(Am 171)
NOISE ABATEMENT PROCEDURES PAGE 1	07-Nov-2019	(Am 161)
NOISE ABATEMENT PROCEDURES PAGE 2	21-Mar-2024	(Am 178)
NOISE ABATEMENT PROCEDURES PAGE 3	21-Mar-2024	(Am 178)
NOISE ABATEMENT PROCEDURES PAGE 4	13-Jun-2024	(Am 179)
NOISE ABATEMENT PROCEDURES PAGE 5	13-Jun-2024	(Am 179)
NOISE ABATEMENT PROCEDURES PAGE 6	27-Nov-2025	(Am 185)
NOISE ABATEMENT PROCEDURES PAGE 7	07-Nov-2019	(Am 161)
NOISE ABATEMENT PROCEDURES PAGE 8	01-Dec-2022	(Am 173)
NOISE ABATEMENT PROCEDURES PAGE 9	07-Nov-2019	(Am 161)
NOISE ABATEMENT PROCEDURES PAGE 10	07-Nov-2019	(Am 161)
AIRPORT EFFICIENCY PROCEDURES	07-Nov-2019	(Am 161)
IVA USER GUIDE PAGE 1	07-Nov-2019	(Am 161)
IVA USER GUIDE PAGE 2	07-Nov-2019	(Am 161)
PRM USER INSTRUCTIONS	17-Jun-2021	(Am 167)
SID SYDNEY FOUR DEPARTURE (RADAR)	09-Jul-2026	(Am 187)
SID ANKUB ONE DEPARTURE (NON-JET) (RNAV)	09-Jul-2026	(Am 187)
SID AVMOV ONE DEPARTURE (RNAV)	09-Jul-2026	(Am 187)
SID KADOM TWO (JET) (RNAV)	09-Jul-2026	(Am 187)
SID RWY 07 FISHA ONE (JET) (RNAV)	09-Jul-2026	(Am 187)
SID RWY 16L ABBEY THREE (JET) (RNAV)	09-Jul-2026	(Am 187)
SID RWY 16L KEVIN SEVEN (RNAV)	09-Jul-2026	(Am 187)
SID RWY 16R GROOK TWO (RNAV)	09-Jul-2026	(Am 187)
SID RWY 34L TONTO ONE DEPARTURE (RNAV)	09-Jul-2026	(Am 187)
SID RWY 34R MARUB SEVEN (JET) (RNAV)	09-Jul-2026	(Am 187)
SID RWY 34R OLSEM ONE (JET) (RNAV)	09-Jul-2026	(Am 187)
SID STUIE ONE (JET) (RNAV)	09-Jul-2026	(Am 187)

Chart	Effective Date	(Amdt No)
STAR AKMIR ONE ARRIVAL (RNAV)	09-Jul-2026	(Am 187)
STAR BOREE FIVE ALPHA ARRIVAL (RNAV)	09-Jul-2026	(Am 187)
STAR BOREE FIVE PAPA ARRIVAL (RNAV)	09-Jul-2026	(Am 187)
STAR MARLN SIX ARRIVAL (RNAV)	09-Jul-2026	(Am 187)
STAR MEPIL FOUR ARRIVAL (RNAV)	09-Jul-2026	(Am 187)
STAR RIVET FIVE ARRIVAL (RNAV)	09-Jul-2026	(Am 187)
RNP RWY 07	09-Jul-2026	(Am 187)
ILS OR LOC RWY 07	09-Jul-2026	(Am 187)
GLS RWY 07	09-Jul-2026	(Am 187)
RNP RWY 16L	09-Jul-2026	(Am 187)
ILS OR LOC RWY 16L - PAGE 1	09-Jul-2026	(Am 187)
ILS RWY 16L - PAGE 2	12-Jun-2025	(Am 183)
GLS RWY 16L	09-Jul-2026	(Am 187)
RNP RWY 16R	09-Jul-2026	(Am 187)
ILS OR LOC RWY 16R - PAGE 1	09-Jul-2026	(Am 187)
ILS RWY 16R - PAGE 2	12-Jun-2025	(Am 183)
GLS RWY 16R	09-Jul-2026	(Am 187)
RNP RWY 25	09-Jul-2026	(Am 187)
ILS OR LOC RWY 25	09-Jul-2026	(Am 187)
GLS RWY 25	09-Jul-2026	(Am 187)
RNP RWY 34L	09-Jul-2026	(Am 187)
ILS OR LOC RWY 34L - PAGE 1	09-Jul-2026	(Am 187)
ILS RWY 34L - PAGE 2	12-Jun-2025	(Am 183)
GLS RWY 34L	09-Jul-2026	(Am 187)
RNP RWY 34R	09-Jul-2026	(Am 187)
ILS OR LOC RWY 34R - PAGE 1	09-Jul-2026	(Am 187)
ILS RWY 34R - PAGE 2	12-Jun-2025	(Am 183)
GLS RWY 34R	09-Jul-2026	(Am 187)

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