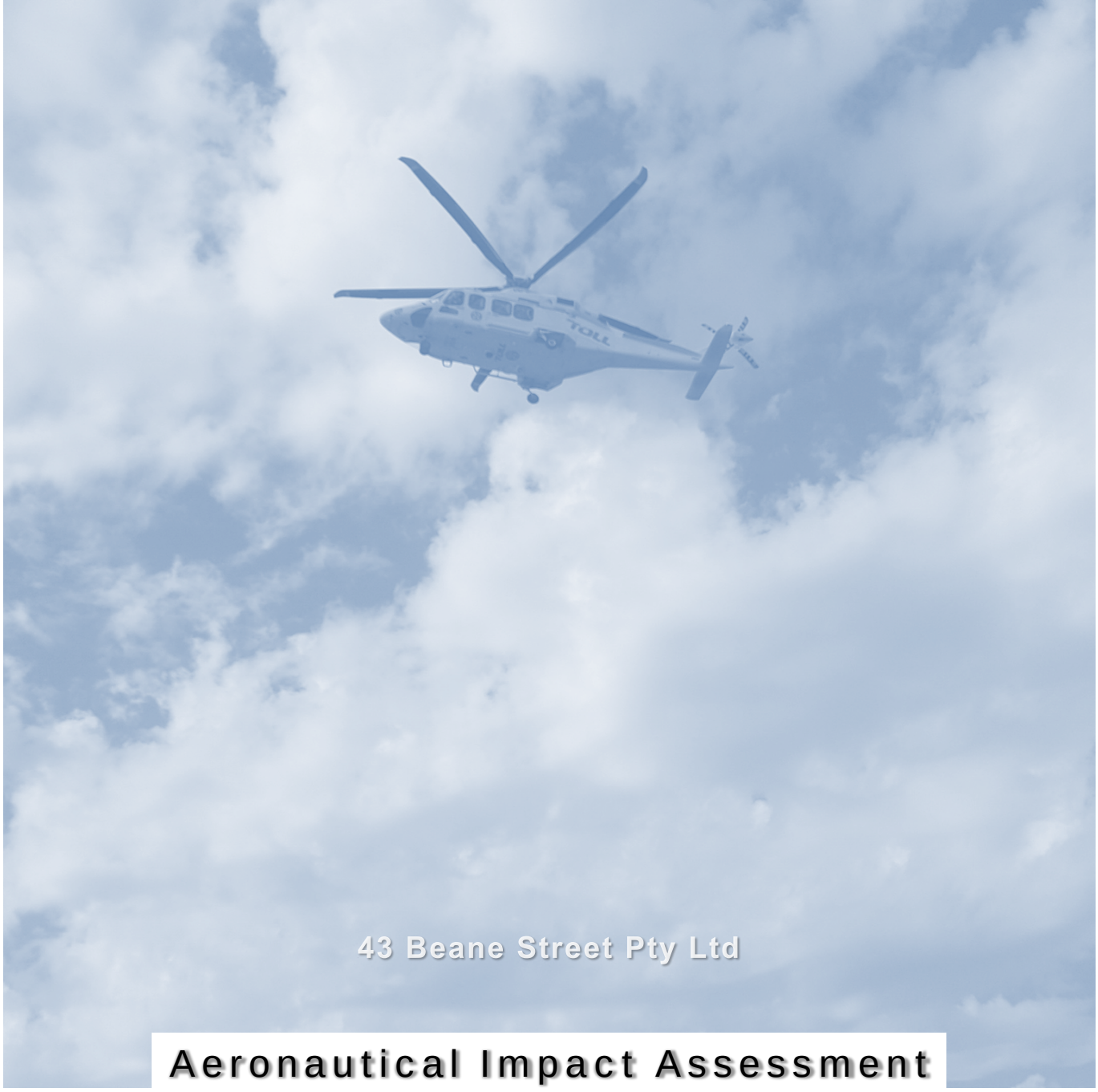

43 Beane Street Pty Ltd

Aeronautical Impact Assessment — 43-45 Beane St, Gosford

Report 1.0

10-Jun-2025

strategic airspace

Prepared by Consultants:

Strategic Airspace Pty Limited
ABN: 60 097 857 415

1A Bundarra Rd, Bellevue Hill NSW 2023
Australia

Tel: +61 2 **8957 2278**

Email - Attn: Cathy.PakPoy@StrategicAirspace.com

Client:

43 Beane Street Pty Ltd
ABN: 48 645 510 489

43 Beane Street
Gosford NSW 2250

Document Control

Document Number: **25.007-02-001** *Version:* 1.0

Document Title: **Aeronautical Impact Assessment — 43-45 Beane St, Gosford**

Purpose / Abstract: *Strategic Airspace (StratAir) has been engaged by 43 Beane Street Pty Ltd to conduct an Aeronautical Impact Assessment (AIA) for a proposed development at 43-45 Beane Street and 2 Keevers Lane, Gosford, NSW (the site). The AIA is intended to support a State Significant Development Application (SSDA) — application number SSD-83538214 — for a mixed-use residential development which includes affordable housing.*

This study examines the impact of the development on the helicopter landing site (HLS) of the nearby Gosford Hospital, as required by the Planning Secretary's Environmental Assessment Requirements (SEARs). The development site is approximately 444m (0.24NM) east-southeast of the Gosford Hospital helipad (YXGS).

This report assesses Prescribed Airspace and operational airspace height constraints over the site, with a focus on the helicopter operations to/from the Gosford Hospital HLS.

The development comprises two (2) main buildings, referred to as Building A and Building B. The tower building (Building A) is assessed using a height of 110.0m Australian Height Datum (AHD), which is based on the top height of the building including any overruns and rooftop features and rounded up to the nearest metre to allow for any construction tolerance. The low-rise building in the south of the site, Building B, is of no impact to airspace.

The findings include the following:

- *The development is outside the prescribed airspace of the closest airports — thus it is not subject to the Airports (Protection of Airspace) Regulations 1996 and does not require any Commonwealth airspace height approvals.*
- *The development site is clear of (outside the Obstacle Limitation Surfaces (OLS) for the published visual approach and departure routes to/from the HLS. Further, whilst it is within the coverage extent of a Visual Approach Area (VAA) associated with the helicopter 'RNP 340' PANS-OPS instrument flight approach procedure to the HLS, the top of Tower Building A is well below the VAA surface height and therefore would not necessitate any changes to that procedure.*
- *The proposed crane required for construction has also been assessed for potential impact on the PANS-OPS procedure: it too would be below the VAA of the helicopter RNP 340 procedure and thus have no adverse impact on safe use of the procedure during construction.*

Given the above, the development based on the proposal herein would not adversely affect the safety, regularity or efficiency of current and future visual and instrument flights to/from the Gosford Hospital HLS.

On this basis, the report concludes that from an aviation perspective the proposed mixed-use development is suitable and warrants planning approval.

Contract: - *StratAir Ref:* 25.007

Change History

Version	*Versn Date*	*Version By*	*QA By*	*Version / Change Description*
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0.2 Draft	02-Jun-2025	P. Haubourdin & C. Pak-Poy	C. Pak-Poy	Amended draft, including crane information
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Distribution Control

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	APT	Sydney Airport	*StratAir*	Strategic Airspace
	SACL	Sydney Airport Corporation Ltd	*Airservices*	Airservices Australia
	CASA	Civil Aviation Safety Authority	*DITRDCA*	Department of Infrastructure, Transport, Regional Development, Communications & the Arts

Issue Version	*Issue Date*	*Issue Purpose / Description*	*Copy No*	*Copy Recipient*
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1. Executive Summary

Strategic Airspace (StratAir) has been engaged by 43 Beane Street Pty Ltd to conduct an Aeronautical Impact Assessment (AIA) for a proposed development at 43-45 Beane Street and 2 Keevers Lane, Gosford, NSW (the site). The AIA is intended to support a State Significant Development Application (SSDA) — application number SSD-83538214 — for a mixed-use residential development which includes affordable housing.

The objective of this study is to document the impact of the development on the helicopter landing site (HLS) of the nearby Gosford Hospital. The site is approximately 444m (0.24NM) east-southeast of the Gosford Hospital helipad (YXGS, see Figure 1-1 below).

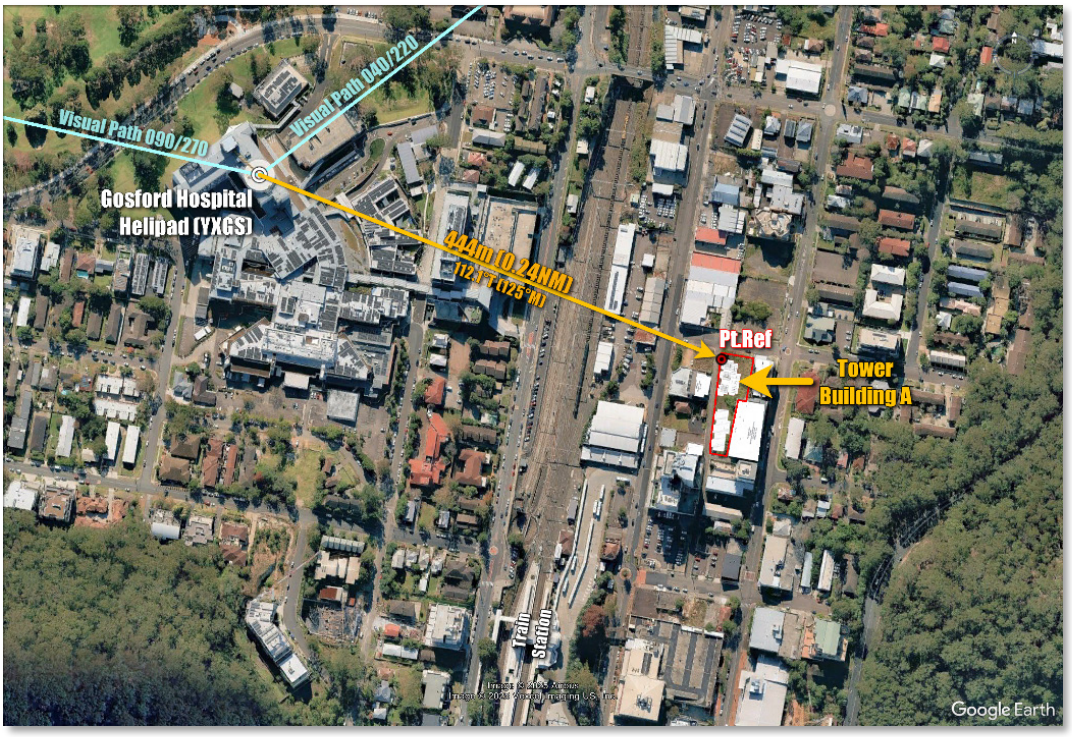


Figure 1-1 — Site Location in relation to Gosford Hospital Helipad

The study also confirmed that the site is outside the normally protected airspace of any of the nearest airports — thus it is not subject to the Airports (Protection of Airspace) Regulations 1996 and does not require any Commonwealth airspace height approvals.

The development comprises two (2) main buildings, referred to as Building A and Building B. The tower building (Building A) is assessed using a height of 110.0m Australian Height Datum (AHD), which is based on the top height of the building including any overruns and rooftop features and rounded up to the nearest metre to allow for any construction tolerance. The low-rise building in the south of the site, Building B, is of no impact to airspace.

The location of the buildings within the site and their top design heights are shown in Figure 1-2 below and a 3D visualisation of the development is depicted in Figure 3-3 (p8) to provide additional context.

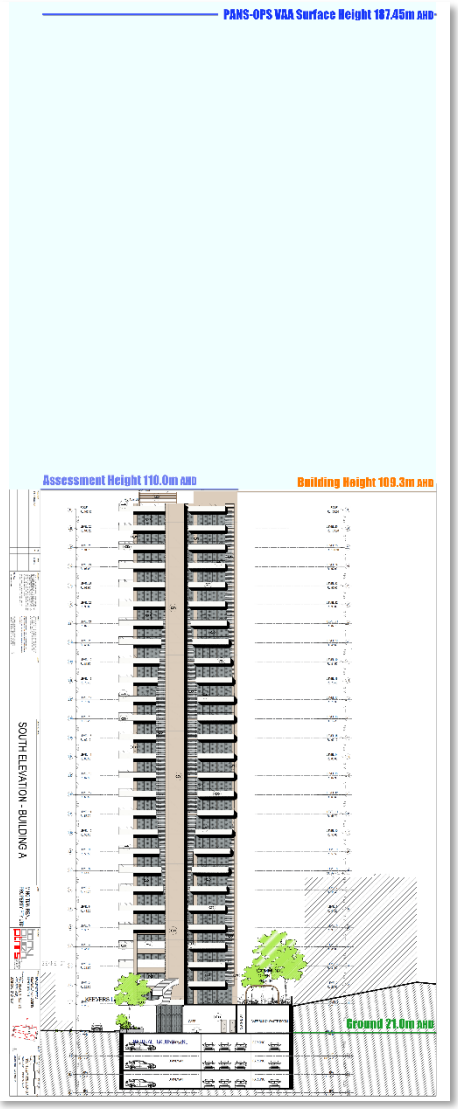
Source: Tony Owen Ptnrs (A106: ROOF PLAN – OPTION 2), Annotated by StratAir

Figure 1-2 — Roof Plan & Maximum Heights

The critical airspace constraints over the site are summarised in the following table, and the building assessment height in relation to the limiting airspace is also depicted as a visual height impact in Figure 1-3 below.

Table 1-1 — Analysis Summary — Key Airspace Height Constraints

Height Limits (m AHD)	*Height Limit Detail*	*Comment*
187.45	RNP 340 VAA Surface	EFFECTIVE HEIGHT CONSTRAINT The height constraint applies across the site. At the proposed maximum elevation of the building, it would be 77.45m clear of (below) this limiting height — and so will have no impact on the instrument approach to the Gosford Hospital HLS. Similarly, the proposed tower crane required for construction would have no impact on the helicopter procedure. Refer Section 5 Crane Considerations & Table 5-1 (p16).
N/A or Higher	Other PANS-OPS Surfaces & the RTCC Surface	Above the most limiting surface, other constraining surfaces include the MSA and RTCC surfaces.



Source:Tony Owen Ptnrs (A202: SOUTH ELEVATION BUILDING A), Annotated by StratAir

Figure 1-3 — Visual Height Impact Summary (Tower Building A)

To conclude:

- The tallest building, Tower Building A, is well clear of the published visual approach and departure paths to/from the hospital HLS.
- Tower Building A is >77m below the most limiting surface associated with the RNP 340 PANS-OPS instrument flight procedure to the HLS, the Visual Approach Surface (VAA).
- Whilst not required for SSDA consent, an assessment of the potential construction impact on helicopter airspace has also been conducted, with the result being that the planned crane will also not adversely affect the standard visual approaches nor the PANS-OPS procedure. As safety mitigations, it is proposed that:
  - The Hospital Helicopter Operations contact & Helicopter Operators be advised in advance of the crane location, height and operating duration.
  - Any such crane be required to have obstacle warning lights installed.

In summary, the proposed development will not adversely affect the safety of Helicopter Emergency Management Services (HEMS) operations to the Gosford Hospital HLS.

This report concludes that the proposed mixed-use development is suitable and warrants planning approval without any airspace-related mitigation measures.

Mitigation measures are however proposed for the crane required for construction of Tower Building A.

2. Introduction

Strategic Airspace (StratAir) has been engaged by 43 Beane Street Pty Ltd to conduct an Aeronautical Impact Assessment (AIA) for a proposed development at 43-45 Beane Street and 2 Keevers Lane, Gosford, NSW (the site). The AIA is intended to support a State Significant Development Application (SSDA) — application number SSD-83538214 — for a mixed-use residential development which includes affordable housing.

The site is approximately 444m (0.24NM) east-southeast of the nearby Gosford Hospital helipad (YXGS, see Figure 1-1 above).

The key objective of this study is to document the impact of the development on the helicopter landing site (HLS) of the Gosford Hospital, and to demonstrate that if granted planning approvable the development would not adversely affect the ongoing usability or safety as a landing site for the helicopter emergency flights operating at that facility.

The AIA also considers the potential impact of cranes to demonstrate the feasibility of constructing the development without causing an adverse impact on operational airspace during construction.

Source: Tony Owen Ptnrs (A106: ROOF PLAN – OPTION 2), Annotated by StratAir

Figure 2-1 — Site Location Plan

The development comprises two (2) main buildings, referred to as Building A and Building B. The tower building (Building A) is the focus of the assessment as it is significantly taller (and closer to the hospital helipad) than the low-rise Building B.

2.1 The Development Proposal

The purpose of the development proposal is to deliver a high-quality mixed-use development which includes affordable accommodation to Gosford.

2.2 Site Location & Legal Descriptors

The site is located on the corner of Beane Street and Keevers Lane, Gosford, as depicted in Figure 1-2 above. The legal descriptions of the site are Lots 8, 9 and 14 in Deposited Plan 18726 within Central Cost.

2.3 Planning Secretary's Environmental Assessment Requirements (SEARs)

Whilst the industry-specific Housing SEARs themselves did not specifically list aviation impact as an Issue and Assessment Requirement, the SEARs cover letter issued on 14th May 2025 included this as the second of three additional requirements — specifically:

> 2. Assess the impacts of the development on the helicopter landing site associated with Gosford Hospital.

3. Aeronautical Impact Context

3.1 Site Location Relative to Gosford Hospital Helipad

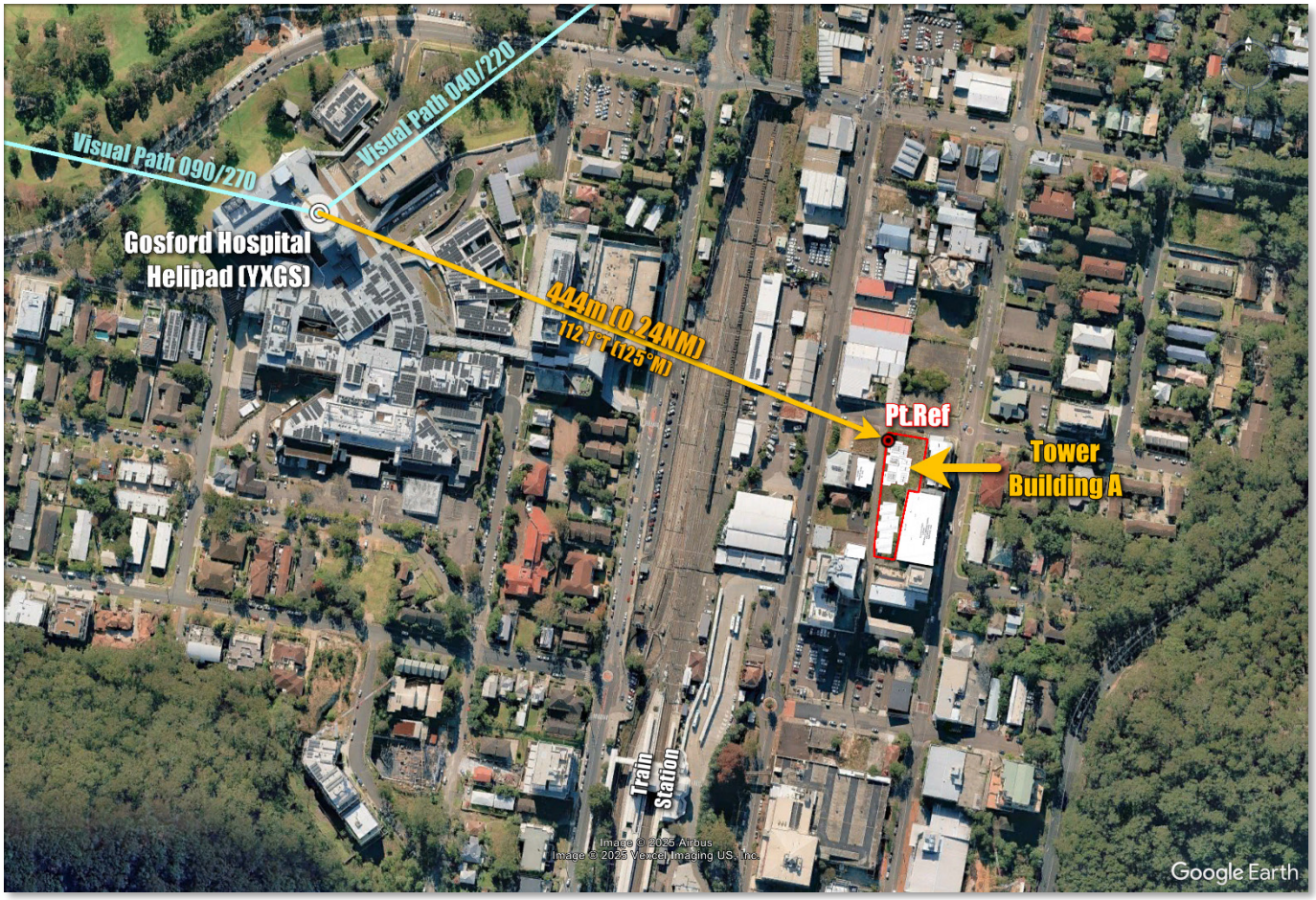


Figure 3-1 — Proposed Development Site in relation to Gosford Hospital Helipad

The site is located approximately 0.4 km (0.24 Nautical Miles (NM)) east-south-east of the Helipad Reference Point (ARP) of Gosford Hospital's helipad (YXGS), as shown in Figure 3-1 above.

The distance and bearing to the Helipad Reference Point (ARP) are detailed in Table 3-1 below.

Table 3-1 — Project Reference Point Location in Relation to Gosford Hospital Helipad

Airport Feature	*Elev (ft)*	*Elev (m)*	*Distance (m)*	*Dist (NM)*	*Bearing (°T)*	*Brg (°M)*
Helipad Reference Point (HRP)	210	**64**	**444**	**0.24**	**112.1**	**125**

3.2 Building Heights

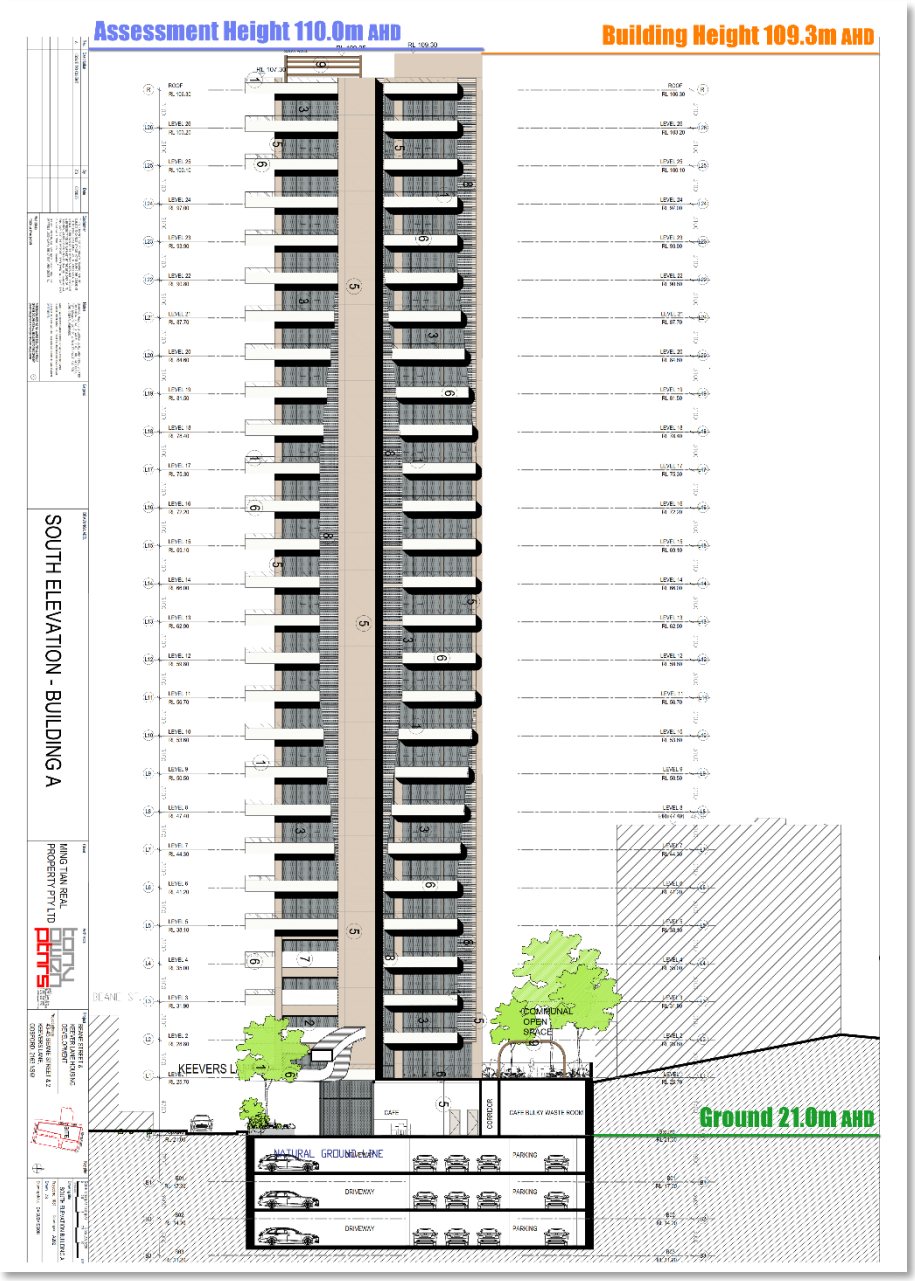
The development comprises two buildings: a tall tower building, Building A, and the low-rise Building B. The relative massing of the two buildings in relationship to each other are shown in the visualisation in Figure 3-3 and the heights are detailed in Table 3-2 below.

Table 3-2 — Building Design Heights

Building Zone	*Max Design Height RL (m AHD)*	*Max Height AGL* (m AHD)*
Tower Building A	**109.3**	88.3
Building B	**41.1**	20.1

** Height Above Ground Level (AGL). The ground elevation is 21.0m AHD.*

For the aviation assessment purposes — given the nature of the development and the relatively constrained site and the height difference between the two buildings— we have used a single maximum assessment height for the site of 110.0m AHD, which is rounded up from the maximum design height annotated for the tallest tower on the architectural DA plans as provided by the proponent (refer also Table 3-3 below).



Source:Tony Owen Ptnrs (A202: SOUTH ELEVATION BUILDING A), Annotated by StratAir

Figure 3-2 — Tower Building & Assessment Heights in Elevation

Source:Tony Owen Ptnrs (A150: Perspectives), Annotated by StratAir

Figure 3-3 — Building Massing in 3D (Viewed from the South-West)

3.3 Key Reference Points used for Analysis

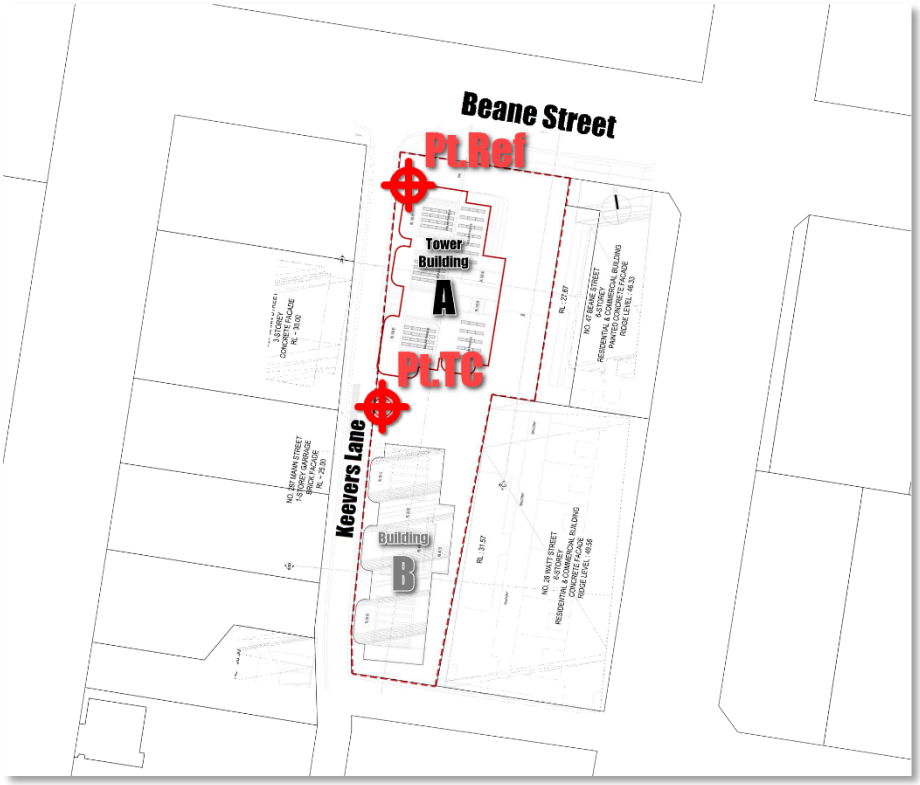
Due to the significant difference in height between the two buildings, the low-rise building is considered insignificant in this assessment as any restrictions applicable to the higher tower will be far more restrictive than for the lower tower. A single reference point is chosen at the northwestern corner of Tower Building A at a point nearest to the Gosford Hospital helipad.

An additional reference point is established for assessment of crane impact during construction, which is discussed in section 5 (p16).

Table 3-3 — Assessment Reference Point Coordinates

Key Reference Points	*Point*	*Assessment Heights (m AHD*)*	*WGS84 Geographic Coordinates*	*GDA94 Coordinates (Zone 56)*
Tower Building A	**Pt.Ref**	**110.0**	33° 25' 16.434" S 151° 20' 36.949" E	345996.682 E 6300787.385 N
Tower Crane	**Pt.TC**	**162.3**	33° 25’ 17.711” S 151° 20’ 36.765” E	345992.540 E 6300747.955 N

***** *Assessment Heights — Indicative Max RLs for of the Proposed Tower Building*
m AHD = RL Heights expressed in Metres Australian Height Datum (AHD)
Height Above Ground Level (AGL) — the Assessment Height Pt.Ref is 89m AGL.



Source: Tony Owen Ptnrs (A106: ROOF PLAN – OPTION 2), Annotated by StratAir

Figure 3-4 — Key Reference Points

3.3.1 Note about Heights: Australian Height Datum (AHD) vs Above Ground Level (AGL)

All “heights” provided in this document (unless expressly signified otherwise) are elevations expressed in metres in the Australian Height Datum (AHD) — and thus they are true elevations, and NOT heights above ground level (AGL).

For estimating maximum development heights AGL, the ground elevation^{AHD} should be subtracted from the airspace height limits^{AHD}. In architectural terms, the height AHD is the equivalent of an RL height.

Note also for aviation-related airspace height limits, any building height approval under the Airports (Protection of Airspace) Regulations is regarded as inclusive of the building itself, plus all rooftop furniture, overruns (plant buildings, lift risers, antennae, etc) and even rooftop vegetation (refer also section 3.4.1, p9).

3.4 Methodology

This report considers airspace impact on the nearby Gosford Hospital helipad and, for due diligence, the protected and/or declared airspace of the closest airports.

3.4.1 Airspace Regulations

The Airports (Protection of Airspace) Regulations 1996 (APAR) — pursuant to the Airports Act and administered by the Commonwealth Department of Infrastructure, Transport, Regional Development, Communication and the Arts (DITRDCA) — define how building height limitations due to airspace safety can be determined, and the process for gaining approval of the proposed development under the regulations.

The Prescribed Airspace Regulations, and their impact upon building height limitations, are described below.

Where a proposed development would infringe the Prescribed Airspace, a height approval must be obtained from DITRDCA prior to the intrusion into the airspace. A permanent intrusion, such as a building, is termed a *controlled activity*, and temporary intrusions that are not expected to continue longer than 3 months, such as cranes, are termed *short-term controlled activities*.

Applications for approval under the APAR are usually submitted via the nearest relevant airport (in this case, irrelevant), which then contacts relevant stakeholders and ultimately forwards the application to DITRDCA for the final determination.

Height approvals under APAR are not required for rezoning applications. They are however usually required by local planning authorities prior to, or as consent conditions of, approval of Development Applications (DAs).

3.4.2 Prescribed Airspace (Airports)

Prescribed airspace, under these regulations, includes at minimum:

- **Obstacle Limitation Surfaces (OLS)**
  - The OLS are used to identify buildings and other structures that may have an impact upon the safety or regularity of aircraft operations at an airport. This impact depends upon both the type of operations at the aerodrome and which OLS surfaces are penetrated by a (proposed) building or structure.
  - The OLS are flat and rising (invisible) surfaces around the airport. They are based on the geometry of the airport and its runways and therefore they rarely change.
  - If a permanent building development (or temporary crane) that is proposed at a height that will penetrate (exceed) the height limit of an OLS, then an application must be made to the Commonwealth Department of Infrastructure, Transport, Regional Development, Communications & the Arts (DITRDCA) — via the closest airport, and with copies to any other potentially affected airport — for an airspace height approval prior to construction of the permanent development &/or erection of the temporary crane obstacle. Such applications should demonstrate the proposed building does not penetrate or adversely affect surfaces protecting the instrument flight procedures (PANS-OPS surfaces); radar vectoring; navigation infrastructure; or anything else that might affect the safety or regularity of operations at the airport.
- **PANS-OPS Surfaces**
  - PANS-OPS surfaces represent the protection surfaces for published instrument flight procedures to and from the airport. These surfaces comprise flat, sloping and complex surface components.
  - PANS-OPS surfaces must not be penetrated by permanent buildings or structures. However, for a variety of reasons, PANS-OPS surfaces can and do change over time. Approval may be granted, under certain conditions, for temporary obstacles (such as cranes) which at their maximum height would infringe the limiting PANS-OPS surface, and in such cases operation at such heights would most likely be capped by the RTCC surface constraint (see below) and limited to 3 months duration.
  - As flight procedures are changed from time to time (usually by Airservices), the PANS-OPS Surface Plan published by an airport may not reflect the current situation — which is why we not only reference the airport's plans but also review the published charts for current (or pending) instrument flight procedures and evaluate the associated PANS-OPS height limits. The regulations also make a provision for any factor which may be deemed to adversely affect the safety, regularity or efficiency of aircraft operations at an airport. In light of this, it is necessary to consider the following factors.

- **Other Considerations**
  - **Declared Airspace Plans of Relevant Airport(s)**[1] additionally include:
    - Radar Terrain Clearance Charts (RTCC), which depict the areas and height limits related to the Minimum Vector Altitude (MVA) sectors used by Air Traffic Controllers when vectoring aircraft. In areas where the airport's published RTCC chart covered is known to be superseded, analysis is based on the current MVA sectors used by Airservices Australia to determine the actual RTCC surface limits.
  - **Other Factors** — include but are not limited to:
    - Shielding by existing permanent, taller structures, where relevant.
    - Other miscellaneous factors that may be considered as potential safety issues by any of the key stakeholders, and the Civil Aviation Safety Authority (CASA) in particular. These include factors that are currently specified as guidelines only in the National Airports Safeguarding Framework (NASF), but which may be regarded as specific controls that must be assessed by some airports.

3.4.3 Assessable Airspace (Helicopter Landing Sites)

The process is similar to that of assessing the airspace for airports, except that slightly different technical standards are applicable to the OLS and, where relevant, the helicopter-specific PANS-OPS procedures.

The helicopter OLS are based on specific criteria to protect the HLS manoeuvring area and the visual approach and departure paths, as defined by the International Civil Aviation Organisation (ICAO) Annex 14, Vol II, Chapter 4. Helicopter-specific PANS-OPS instrument flight procedures are assessed in relation to ICAO Doc 8168 Vol II and any overriding criteria for Australian published in the Aviation Safety Regulations Manual of Standards Part 173 (CASR MOS Part 173).

Hospital HLSs are considered as Strategic Helicopter Landing Sites (SHLS) under the NASF, but no specific guidelines or standards are provided for assessment. The key criteria is to ensure that new developments do not adversely affect the ability of such SHLSs to continue to operate and that helicopters providing emergency management services can continue to operate safely at those facilities.

3.4.4 Mitigations

Mitigations, including the potential need for obstacle lighting, are also considered where relevant.

1 Airspace that is approved by DITRDC as Declared Airspace is considered part of a scheduled airport's Prescribed Airspace.

4. Analysis

The proposed development site is not subject to the Airports (Protection of Airspace) Regulations (APAR), under the Commonwealth's Airports Act, 1996), as it is outside the declared airspace of any scheduled airports listed in the regulations.

However, the Gosford Hospital helipad is classified as a Strategic Helicopter Landing Site under the NASF because it serves a strategically important service as a Helicopter Emergency Management Services (HEMS) facility. This analysis satisfies the NASF guidelines for assessing the potential airspace impact of the proposed development on the SHLS.

4.1 OLS Analysis for HLS

The site falls outside the extent of any of the Gosford Hospital helipad's Obstacle Limitation Surfaces. Its location in relation to the OLS is shown in Figure 4-1 below.

Figure 4-1 — Site in relation to the Gosford Hospital HLS OLS Surfaces

4.2 PANS-OPS Analysis for Helicopter Procedure

There is one PANS-OPS procedure published for Gosford Hospital's helipad: YXGS RNP 340, current as of the time of writing this report (as published in the Australian Aeronautical Information Publication (AIP) Departure and Approach Procedures (DAP), up

to Amendment 183 (effective 12-Jun-2025 to 03-Sep-2025). The following aspects of the procedure were assessed:

- Minimum Sector Altitude — 10 NM Sector
- Protection for the Missed Approach segment of the procedure
- Protection for the Visual Approach Area for the procedure

4.2.1 Minimum Sector Altitude (MSA)

The Minimum Sector Altitude is the published altitude at which pilots are able to manoeuvre freely without concern for obstacles in a given radius around an aerodrome/heliport. The relevant sector is the inner 10 NM sector around the helipad which has a 2500ft minimum flight altitude.

Table 4-1 — Minimum Sector Altitude (MSA) Impact

Procedure	*Feature and / or Restriction*	*Description*
10NM MSA	Horizontal Surface: • **462m**	Covers the entire site.

4.2.2 Instrument Approach & Missed Approach

The site is within the lateral limits of the RNP 340 instrument approach procedure. More specifically it lies within the lateral tolerance of the missed approach.

Considering the minimum descent altitude applicable to the procedure, the upward sloping protection surfaces for the missed approach will be well above the maximum height of the proposed development.

Table 4-2 — Summary of Missed Approach Surface Height & Building Height Clearance

		PANS-OPS Missed APCH Surface		
Location	*Assessment Height (m AHD)*	*Procedure*	*Surface Height*	*Clearance / Infringement*
Pt.Ref	**110.0**	RNP 340	202.38	92.38

This surface is higher than the protection surface associated with the Visual Approach Area.

4.2.3 Visual Approach Area (VAA)

The Visual Approach Area protects helicopters who are proceeding visually from the missed approach point on a procedure to land on the helipad associated with that procedure. The surface is specific to Australia, defined in the MOS Part 173 regulations. Assessment of the surface protecting the VAA confirms this is the most restrictive PANS-OPS surface affecting the proposed development.

Table 4-3 — Summary of VAA Surface Height & Building Height Clearance

		PANS-OPS Heli VAA Surface		
Location	*Assessment Height (m AHD)*	*Procedure*	*Surface Height*	*Clearance / Infringement*
Pt.Ref	**110.0**	RNP 340	187.45	77.45

This is the most restrictive PANS-OPS related surface affecting the site.

4.2.4 PANS-OPS Assessment Summary

Table 4-4 below summarises the analysis results of the PANS-OPS procedures. Details for the analysis of various PANS-OPS procedure types can be found further below.

Table 4-4 — Sydney (YSSY) PANS-OPS Height Limit Summary

Procedure	*Height Limit (m AHD)*	*Description*
Visual Approach Area (VAA)	187.45	The Visual Approach Surface related to the RNP 340 Helicopter Instrument Approach is the most restrictive.
Missed Approach Procedure	≥ 202.38	The site falls within the protection area for Category B (and higher) circling areas.
Minimum Sector Altitude (MSA)	462	The 10 NM Minimum Sector Altitude of 2100 ft imposes this surface height constraint across the entire site.

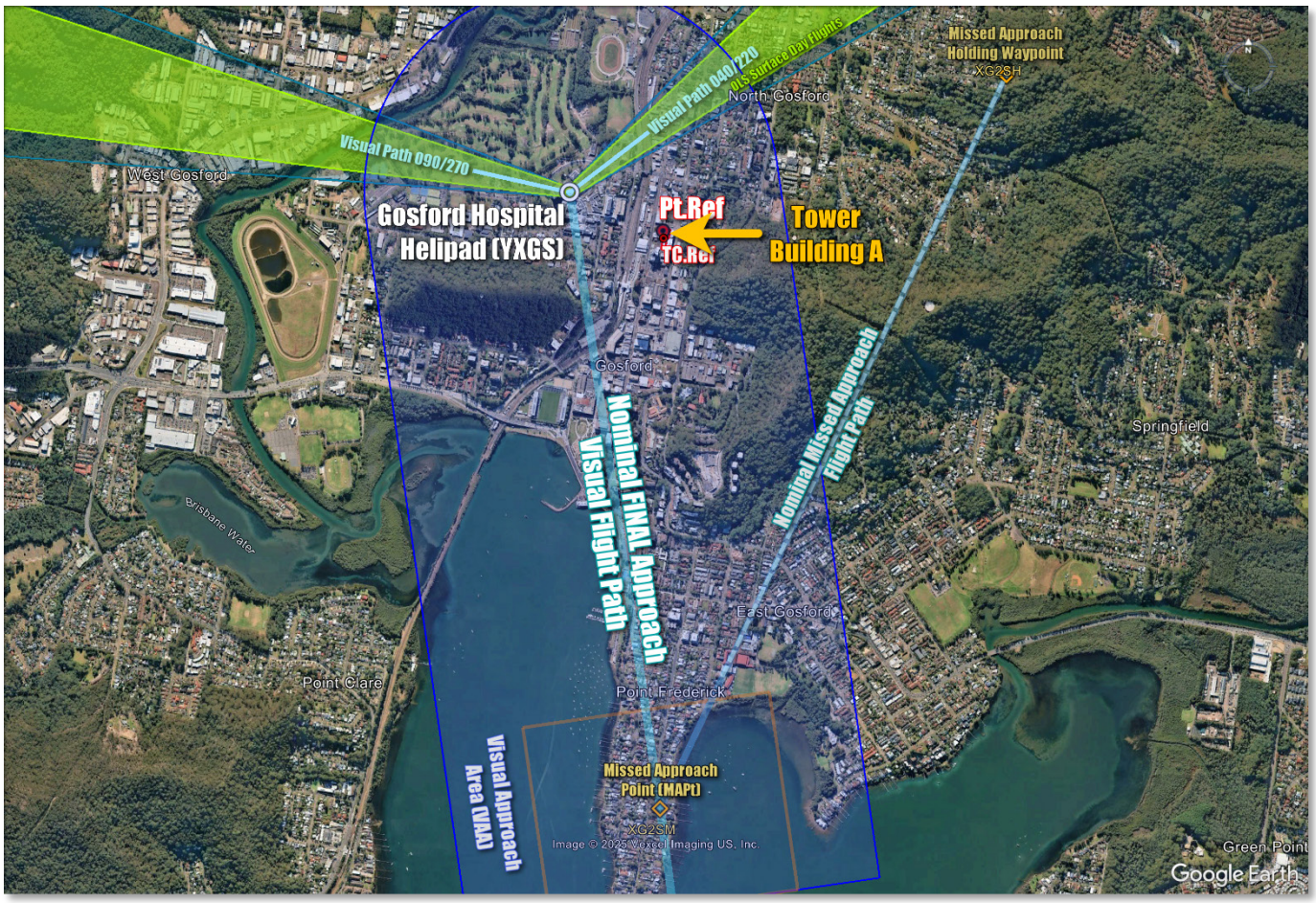


Figure 4-2 — Site in relation to Sydney Airport's OLS

4.3 Other Assessment Considerations

The following table provides a brief assessment of other considerations.

Table 4-5 — Other Assessable Height Limitations — including the RTCC MVA Limit

Procedure	*Height Limit (m AHD)*	*Description*
Radar Terrain Clearance Chart (RTCC)	**457.2**	This height constraint is applicable over the entire site. Refer 4.3.1 below.
Navigation Infrastructure Surfaces	N/A	The proposed development is too far from the airport to affect any ground-based navigation infrastructure.

There are no other considerations that might limit the building height at the project site.

4.3.1 Radar Terrain Clearance Chart (RTCC) / Minimum Vector Altitude (MVA) Surface

The Radar Terrain Clearance Chart (RTCC) overhead the site protects the airspace used by air traffic controllers as the lowest Minimum Vector Altitude (MVA) they can use for vectoring aircraft. With an MVA of 2500ft over the site, the RTCC surface height limit is 457.2m AHD.

4.4 Obstacle Lighting

As the height of the tallest building (at ~88m AGL) is less than 100m above ground, obstacle lighting is not mandated by the relevant civil aviation regulations.

4.5 Summary

The impact of the various building height limitations, from lowest to highest, is summarised in the following table.

Table 4-6 — Analysis Summary — Airspace Height Constraints

Height Limits (m AHD)	*Height Limit Detail*	*Comment*
187.45	RNP 340 VAA Surface	EFFECTIVE HEIGHT CONSTRAINT The height constraint applies across the site. At the proposed maximum elevation of the building, it would be 77.45m clear of (below) this limiting height — and so will have no impact on the instrument approach to the Gosford Hospital HLS. Similarly, the proposed tower crane required for construction would have no impact on the helicopter procedure. Refer Table 5-1 below.
≥ 202.38	PANS-OPS Missed Approach Surface	The sloping missed approach protection surface will be significantly higher than the more restrictive VAA protection surface.
N/A or Higher	Other PANS-OPS Surfaces & the RTCC Surface	Above the most limiting surface, other constraining surfaces include the MSA and RTCC surfaces.

5. Crane Considerations

5.1 Preliminary Crane Plan

A preliminary plan shows that construction of the development can be completed with the use of a single luffing tower crane (TC). The crane would be positioned on the Keevers Lane frontage, midway between the two building sections as indicated in Figure 3-4 (p9).

Table 5-1 — Crane Height Clearances below PANS-OPS Surface

Key Reference Point	*Point*	*Assessment Height (m AHD*)*	*PANS-OPS Heli VAA Height Limit*	*Clearance*	*Comment*
Tower Crane TC Centre Point	**TC1**	**162.3**	187.45	25.15	At its max possible height, when slewing during windage, the luffing crane will be below all PANS-OPS protection surface & VAA heights.

It is also noted that the top of the crane, at the planned maximum height, would be 98.3m (323ft) higher than the Gosford Hospital helipad.

The crane is well clear of the Gosford Hospital HLS, and it would not infringe the PANS-OPS procedure. Additionally, it would not require a prior airspace height approval from the Commonwealth would be required for the crane.

5.2 Crane Safety Mitigations

However, given that the TC will be taller than 100m AGL, notification of it as a temporary Vertical Obstruction will need to be provided to Airservices Australia prior to its erection (at least one week). Additionally, given the proximity to Gosford Hospital, it is strongly recommended that they and HEMS operators also are advised in advance (refer section 5.3 below).

Furthermore, given the height above ground and the proximity to the hospital HLS, it is also strongly recommended that the crane be lit with obstacle warning lights.

5.3 Future Crane Notifications — Prior to Erection

The following notifications should be made prior to erection of the crane, with a minimum of at least 1 week's notice in advance.

- Airservices Australia, via completion and submission of a Vertical Obstruction Data (VOD) Form

  Website: https://www.airservicesaustralia.com/wp-content/uploads/ATS-FORM-0085_Vertical_Obstruction_Data_Form.pdf

- NSW Health helicopter contacts for Gosford Hospital, and the organisation that manages the website for supplementary information for helipads, OzRunways, via email. Specify the advisory is for Gosford Hospital HLS (YXGS), attach an image of the site and crane location, and provide info on crane type, height and planned start and end dates.

  NSW Health: helipads.newcastle@rescuehelicopter.com.au (Verify this is still current first on https://www.ozrunways.com/helipads/view/helipad.jsp?code=YXGS)

  OzRunways: Support@OzRunways.com

6. Conclusion

The site is outside the normally protected airspace of any of the nearest airports — thus it is not subject to the Airports (Protection of Airspace) Regulations 1996 and does not require any Commonwealth airspace height approvals for the proposed building nor any cranes required for its construction. Considering the proximity of the site to the Gosford Hospital HLS this report assessed the potential impact on the HLS operations.

Only Tower Building A, which is also the closest of the two buildings to the Gosford Hospital HLS, was considered as part of the airspace impact assessment. The height of the low-rise Building B, at 20m above ground, makes it inconsequential.

Tower Building A will have no impact on the ability of HEMS operations to/from the Gosford Hospital HLS because:

- It is laterally well clear of the published visual approach and departure paths.
- It is vertically clear of (>77m below) the most limiting surface (the VAA) associated the RNP PANS-OPS instrument flight procedure to the HLS.

Advance assessment of a preliminary crane plan shows that the proposed crane will also not adversely affect the ability of EMS helicopters to safely operate to and from the hospital HLS. Various notification and mitigations to be put in place before and during crane operations are strongly recommended to enhance safety for helicopter operators.

This report concludes that the proposed mixed-use development is suitable and warrants planning approval without any airspace-related mitigation measures for the building.

APPENDICES

APPENDIX 1 — ABBREVIATIONS

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
AHT	Aircraft Height
AIP	Aeronautical Information Publication
Airports Act	Airports Act 1996, as amended
AIS	Aeronautical Information Services
ALARP	As Low As Reasonably Practicable
ATC	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
APARs, or A(PofA)R	Airports (Protection of Airspace) Regulations, 1996 as amended
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
CG	Climb Gradient
CMP	Construction Management Plan
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
DER	Departure End of Runway
DEVELMT	Development
DH	Decision Height
DITRDCA	Department of Infrastructure, Transport, Regional Development, Communications & the Arts(Commonwealth) (former abbreviations include DIRD, DIRDC, DITCRD, DITRDC)
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)
EIS	Environmental Impact Study
ELEV	Elevation (above mean sea level)

Abbreviation	*Meaning*
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
HEMS	Helicopter Emergency Management Services
HIAL	High Intensity Approach Light
HLS	Helicopter Landing Site
HRP	Heliport Reference Point
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
IPA	Integrated Planning Act 1997, Queensland State Government
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	Localizer
LNAV	Lateral Navigation
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

Abbreviation	*Meaning*
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
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
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
TAR	Terminal Approach Radar
TAS	True Airspeed
TfNSW	Transport for NSW
THR	THReshold (of Runway)
TMA	TerMinal Area
TNA	Turn Altitude
TODA	Take-Off Distance Available
TORA	Take-Off Runway Available
VAA	Visual Approach Area (for Helicopter GNSS Procedures published with a VAA minima)
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
WNW	West North West
WSW	West South West
WGS84	World Geodetic System 1984
WSA	Western Sydney Airport
WSI	Western Sydney International (Nancy-Bird Walton) Airport

APPENDIX 2 — PANS-OPS PROCEDURE

The version of the IFP consulted was from the AIP Amendment 183, effective from 12-Jun-2025 to 03-Sep-2025, current as of the date of this report:

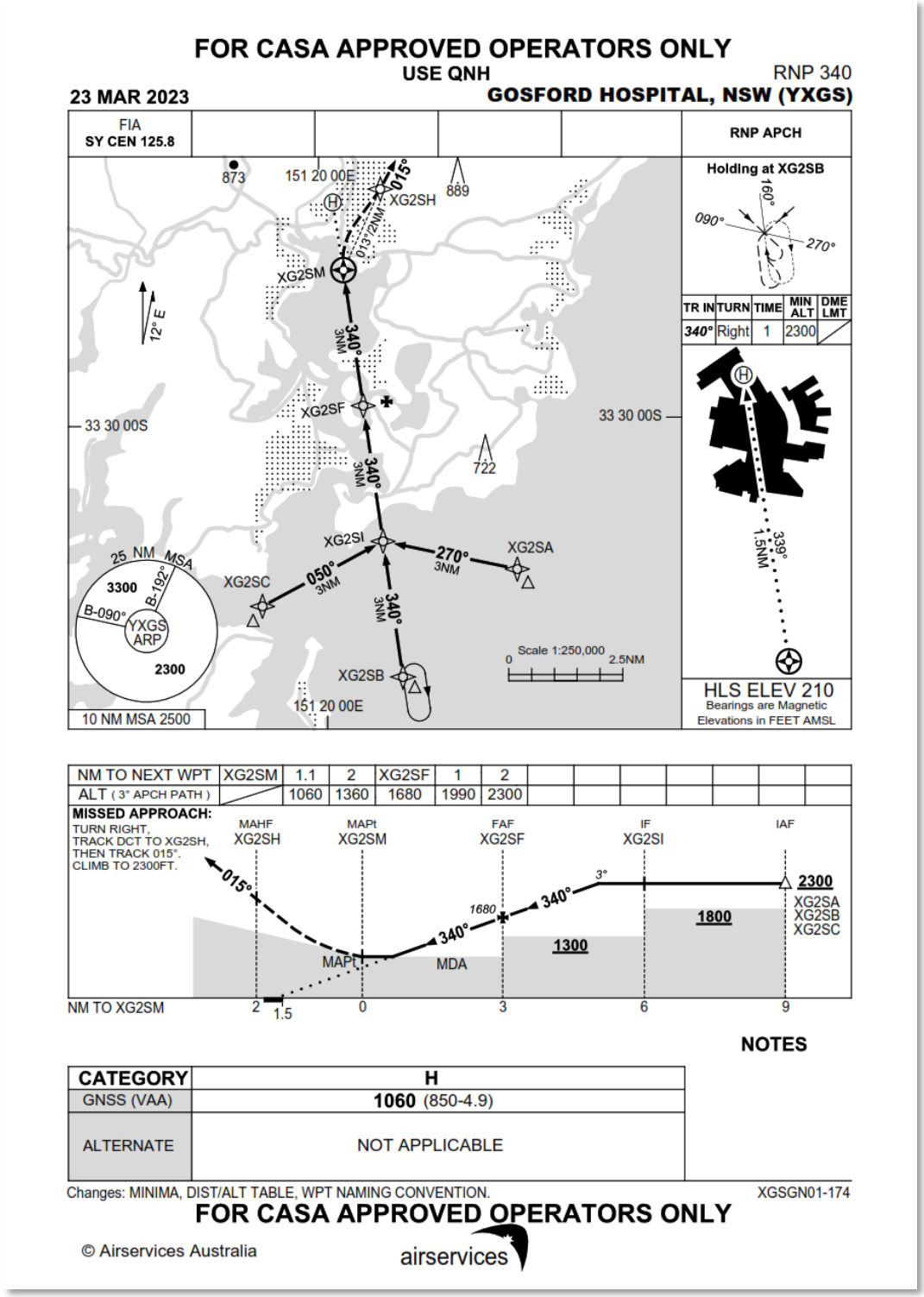


Figure 6-1 — YXGS RNP 340 Helicopter Instrument Flight Procedure

Source:AIP Book via http://www.airservicesaustralia.com/aip/aip.asp

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