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Aeronautical Impact Assessment:

2 Fitzwilliam St, Parramatta

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Aeronautical Impact Assessment: 2 Fitzwilliam St, Parramatta

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V1 DRAFT	22/11/2024	Amin Hamzavian	First draft for client review
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Executive Summary

Executive Summary

This Aeronautical Impact Assessment has been prepared by Avlaw Aviation Consulting Pty Ltd (Avlaw) on behalf of UPG Fitzwilliam Pty Ltd (UPG) to supplement a State Significant Development Application (SSDA) as well as applications for controlled activity approvals associated with a proposed development at 2 Fitzwilliam St, Parramatta (the site).

Although the site-specific Secretary's Environmental Assessment Requirements (SEARs) issued to UPG made no reference to aviation, Avlaw is very familiar with the aviation regulatory requirements associated with proposed development activities around airports and Helicopter Landing Sites (HLSs). Therefore, Avlaw's scope of work has been defined to ensure all aviation restrictions impacting the site are assessed, which by default will satisfy any local planning requirements.

Aviation constraints are in place to protect the safety, efficiency and regularity of aircraft operations by ensuring necessary safety clearances (mandated in legislation) that must be provided between an aircraft and an obstacle (e.g. as buildings and cranes) are maintained as well as other hazards to aircraft operations being limited or mitigated. With regards to the development at the site, aircraft operations at Bankstown Airport, Sydney Airport and multiple helipads in the Westmead Health Precinct have airspace restrictions which have the potential to interact with the site and are therefore the focus of this assessment. Western Sydney Airport (expected to open Q4 2026) is not expected to introduce any more restrictive limits on development at the site than those mentioned above and is therefore excluded from this assessment.

The proposed development at the site will consist of two towers (East and West) which will be constructed to a height of 143m AHD and 168.05m AHD respectively, with all ancillary features that form part of the permanent structure for each captured within this envelope. Three tower cranes with luffing jibs will be used during construction reaching a maximum height of 217.55m AHD (TC1), 217.87m AHD (TC2) and 197.97m AHD (TC3) respectively.

Avlaw's conclusions in this report are based on the findings of its own airspace modelling as opposed to the charts published Bankstown Airport and Sydney Airport. Extracts from the Bankstown Airport and Sydney Airport's prescribed airspace charts are inserted in section four (4) for comparison only. This is to for a combination of reasons, namely ensuring that they findings are reflective of current airspace restrictions as well as a lack of background satellite imagery to precisely plot the site.

With the above in mind, Avlaw's assessment has found that the critical (i.e. lowest) prescribed airspace protection surface covering the site is the Bankstown Airport OLS, specifically the Outer Horizontal Surface (OHS) which is a horizontal plane at 156m AHD across the site. The East tower will remain below this surface whereas the West tower will intrude, meaning it will be considered an obstacle from an aviation perspective and therefore require aviation approval (i.e. controlled activity) prior to being erected.

Above the OLS, the next lowest airspace protection surface covering the site is the Bankstown Airport PANS-OPS. This surface specifically relates to the Non-Directional Beacon (NDB) missed approach procedure for RWY 11 which ranges in height across the site, rising from 315.4m AHD in the SE corner to 316.5m the NW corner. This surface will not be intruded into by any of the built or temporary structures proposed to be erected at the site and therefore, no Instrument Flight Procedures (IFP) will be impacted if the development proceeds.

The protection surface associated with the Sydney Airport TAR is calculated to be 224.95m AHD at the eastern edge to 225.8m AHD when measured at the tip of the TC1. Therefore, none of the permanent or temporary structures proposed at the site will intrude this surface and therefore the development is not expected to adversely impact the use of the radar. Airservices Australia will verify this finding once the controlled activity application reaches them for assessment.

Avlaw's assessment of the helicopter operations within the Westmead Health Precinct (3 x HLSs and one helicopter base) has found that they will not be adversely impacted by the proposed built structure or temporary crane activity. All other helicopter activities in the vicinity of the site published in the Aeronautical Information Publication (AIP) Enroute Supplement Australia (ERSA) have also been assessed and none will be impacted adversely by the proposed buildings and cranes at the site.

In summary, the East tower (143m AHD) at the site will not intrude any airspace protection surfaces and will therefore not require a controlled activity approval prior to being constructed. The West tower (168.05m AHD) along with TC1 (217.55m AHD), TC2 (217.87m AHD) and TC3 (197.97m AHD) will all intrude the Bankstown Airport OLS and will require controlled activity approval prior to being erected. No other airspace protection surfaces covering the site will be adversely impacted by any of the proposed permanent or temporary structures. Airspace associated with helicopter operations has also been assessed and has not identified any constrains to development as all flight paths are clear of the site.

Avlaw believes aviation stakeholders will support the permanent and temporary intrusions necessary for the development at the site to proceed as they will not adversely impact the safety, regularity or efficiency of aircraft operations.

2

Introduction

Introduction

This Aeronautical Impact Assessment is submitted to the Department of Planning, Housing and Infrastructure (DPHI) on behalf of the Applicant, UPG in support of the project comprising residential, hotel and retail uses at 2 Fitzwilliam Street, Parramatta.

Following the approval of the Stage 1 Concept SSDA (SSD-49808717) and the completion of a design competition for the project, UPG are now pursuing the next stage of planning approvals, which include a State Significant Rezoning, a Detailed Stage 2 SSDA (SSD-79791208)

3

Project Background

Project Background

Since acquiring the site from Transport for NSW (TfNSW) via an open tender in 2022, UPG have undertaken an extensive process to secure planning approvals for the site. A summary of the key planning milestones to date is provided below.

3.1 Stage 1 Concept Development

A Stage 1 SSDA (SSD-49808717) was approved on 26 April 2024. The Stage 1 SSDA approves a concept for two towers over a shared podium, with a building envelope and maximum gross floor area (GFA) for build-to-rent (BtR) housing, retail and commercial uses.

A total floor space ratio (FSR) of 23.2:1 is approved under the Stage 1 SSDA, divided between different uses across two towers with maximum heights of RL182.02 (western tower) and RL160.29 (eastern tower).

3.2 Early Works DA

On 18 July 2024, an Early Works Development Application (DA) was formally lodged with the City of Parramatta Council for works to ensure the efficient staged delivery of the project. The DA seeks consent for the following works:

- necessary demolition and clearing of existing structures, such as fencing, hardstand areas, etc.
- bulk earthworks to enable the construction of the future basement;
- stabilisation works and construction of retaining structures, including necessary shoring, piling, and cap beams.

No permanent physical works are proposed as part of the Early Works DA, including any permanent basement structure.

3.3 Design Excellence

Design Competition

In accordance with the approved Design Excellence Strategy endorsed through the Stage 1 SSDA, UPG undertook a design competition in April 2024 to July 2024 for the mixed-use development. The design competition was undertaken to select an architect who presented the highest quality architectural, landscape and urban design proposal for the development, and was informed by a Competition Brief endorsed by the Office of the NSW Government Architect (GANSW) on 29 April 2024.

The participating architectural firms of the Design Competition included (in alphabetical order):

- Bates Smart, in collaboration with Arcadia
- SJB, in collaboration with Land and Form
- Plus Architecture and Furtado Sullivan, in collaboration with McGregor Coxall

A design scheme from each competitor was considered by a Jury of three members. The Jury was formed in consideration with Section 2.3 of the GANSW Design Competition Guidelines and the Design Excellence Strategy. The design schemes presented by the competitors were of extreme high-quality and addressed the complexities of the site and provided solutions to address the planning, design and technical objectives of the competition brief.

The competition concluded in June 2024 and the Jury unanimously selected SJB as the winning architect.

Design Integrity Process

In accordance with the endorsed Design Excellence Strategy, a design review process has been undertaken, involving the convening of the Jury as a Design Integrity Panel (DIP) to ensure that areas of refinement arising from the design competition have been considered and addressed.

The DIP process will continue throughout post-lodgement and post-approval to ensure that the development scheme is of a high quality, maintains its design integrity and exhibits design excellence in accordance with Clause 7.13 of the Parramatta LEP 2023.

4

Concurrent Planning Applications

Concurrent Planning Applications

To facilitate the proposed development, three separate planning applications are being pursued as set out below.

4.1 State Significant Rezoning

On 30 September 2024, the NSW Government announced that the Fitzwilliam Street project was selected as one of eleven projects accepted into the new State Significant Rezoning Program. This program is a government initiative to fast track the delivery of housing to achieve the National Housing Accord.

As such, a rezoning will be concurrently completed with the detailed Stage 2 SSDA seeking site-specific amendments to the *Parramatta Local Environmental Plan 2023* (Parramatta LEP 2023) to facilitate the change of use of the podium and east tower from office premises to residential accommodation and a mixture of non-office uses (e.g. hotel).

4.2 Detailed Stage 2 SSDA

A detailed Stage 2 SSDA will be prepared and lodged concurrently with the rezoning for the construction of the proposed mixed-use development on the site, which specifically seeks approval for the following:

- Construction of a new mixed-use development consistent with the Stage 1 Concept Approval (as amended), comprising:
  - A shared podium containing ground level retail and hotel uses.
  - Two towers comprising residential accommodation.
- Basement carparking accessed via Fitzwilliam Street.
- Through site link connecting Fitzwilliam and Argyle Street.
- Associated landscaping and public domain works.
- Extension and augmentation of physical infrastructure and utilities.

5

Regulatory Context

Regulatory Context

5.1 Local Planning Requirements

Avlaw has cited the Parramatta Local Environmental Plan (LEP) 2023 (accessed 18 November 2024) and identified Clause 7.9 titled 'Airspace operations' which reads as follows:

- The objective of this clause is to protect the airspace around airports
- Development consent must not be granted to development that is a controlled activity, within the meaning of the *Airports Act 1996* of the Commonwealth, Part 12, Division 4, unless the applicant has obtained an approval for controlled activity under regulations made for the purposes of that Division

  Note – controlled activities include the construction or alteration of buildings or other structures that cause an intrusion into airspace around airports

All administrative processes associated with attaining the requisite approvals from an aviation perspective are explained further below. Although not explicitly mentioned above, the airspace associated with hospital helipads as well as other helicopter operations is also a consideration for development at the site and is addressed by Avlaw below and in Section 9.

5.2 Airspace Height Controls

Protection of airspace surrounding an airport is a critical component of maintaining requisite safety standards that facilitate the efficient use of runways, whilst also managing the associated impacts of their use on other critical infrastructure (e.g. taxiways), the environment and the general public. As a signatory to the *Chicago Convention 1944*, Australia adopts International Civil Aviation Organisation (ICAO) Standards and Recommended Practices (SARPs) with respect to airspace which defines various sets of invisible surfaces above the ground around an airport. In Australia, the airspace above these surfaces forms what is referred to as an airport's 'prescribed airspace' with the OLS, PANS-OPS and RTCC those that are most relevant on this development.

The airspace which is protected to ensure the safety of helicopter operations including those associated with hospital helipads is not encapsulated in the aforementioned prescribed airspace. Instead, there are various guidelines and advisory publications in circulation that define the volumes of airspace that should remain free of obstacles to determine what development activities can be safely approved. These are discussed further below.

5.3 Airspace Approval Process

The controlled activity approval processes for penetrations of Bankstown Airport and Sydney Airport's prescribed airspace and those which apply to helicopter operations are covered by different legislative and administrative processes. Each has been described below separately.

Bankstown Airport and Sydney Airport

Part 12 of the *Airports Act 1996* (Act) and the *Airports (Protection of Airspace) Regulations 1996* (Regulations) establish a framework for the protection of airspace at and around airports. The Act defines any activity resulting in an intrusion into an airport's prescribed airspace to be a "controlled activity" that cannot be carried out without approval from aviation stakeholders. Controlled activities include the following:

- permanent structures, such as buildings, intruding into the prescribed airspace;
- temporary structures such as cranes intruding into the prescribed airspace; or

- any activities causing intrusions into the prescribed airspace through glare from artificial light or reflected sunlight, air turbulence from stacks or vents, smoke, dust, steam or other gases or particulate matter.

The Regulations differentiate between short-term (not expected to continue longer than 3 months) and long-term controlled activities. The Regulations allow for the airport operator (in this case, Bankstown Airport) to approve short-term penetrations of the OLS under delegation from the Department of Infrastructure, Transport, Regional Development and Communications and the Arts (Department) following consultation with the Civil Aviation Safety Authority (CASA) and Airservices Australia.

With respect to long-term penetration (i.e. expected to continue for more than 3 months), the airport operator is required to invite the following stakeholders to assess or comment on an application if there is an intrusion into prescribed airspace:

- **CASA** for an assessment of the impact on aviation safety;
- **Airservices Australia** for assessments of proposals resulting in a penetration of surfaces including the PANS-OPS and RTCC;
- **The local council authority** responsible for building approvals; and
- **The Department of Defence** in the case of joint-user airports (not relevant in this instance).

The final approving authority for all long-term penetrations of the OLS is the Department as specified in the Act and the Regulations. In making its determination, the Department is required to assess the respective assessments of the airport operator, Airservices Australia and CASA. The Department cannot approve long-term penetrations of the OLS in the event CASA's assessment is not supportive of the application. It should be noted that long term intrusions of the PANS-OPS or RTCC surfaces are prohibited, however that is not applicable with respect to the site as neither the built structures nor cranes are proposed to penetrate these surfaces.

Carrying out a controlled activity without approval is an offence under Section 183 of the Act 1996 and is punishable by a fine of up to 250 penalty units. It is an offence under Section 185 of the Act to contravene any conditions imposed on an approval. Under Section 186 of the Act it is an offence not to give information to the airport operator that is relevant to a proposed controlled activity.

Hospital Helipads

The triggers for assessment of proposed development activities with respect to airspace surrounding hospital Helicopter Landing Sites (HLSs) are not captured within those that are protected in legislation described in section 2.1 above. Applications for airspace approval for developments in close proximity to hospital HLSs are instead lodged with the asset owner (i.e. the hospital) who in turn refer the application to their aviation advisors and Helicopter Emergency Medical Services (HEMS) operators that fly to/from the HLS in question for assessment.

In order to assess if there will be any adverse impact on hospital helipads, Avlaw cites various documents including the following:

- Guideline H of the NASF;
- CASA AC139.R-01 v3.1; and
- AIP ERSA.

Other Helicopter Operations

There is currently no instrument which formally protects the airspace associated with helicopter operations similar to that which was described for fixed-wing activities above for Bankstown and Sydney Airport. Although no specific controlled activity approval is issued for penetrations of airspace related to helicopter operations, the same key stakeholders are involved, and each will conduct their own

assessment that will collectively determine whether the proposed activities can proceed or not. This forms part of the formal advice they will prepare and provide to UPG once an application seeking assessment and approval is submitted.

In order to assess if there will be any adverse impact on helicopter operations if the development at the site proceeds, Avlaw has cited AIP ERSA as it contains information relating to specific helicopter transit and access lanes and altitudes that should be maintained to determine if the proposed development at the site will introduce any hazards to safe helicopter operations.

6

Proposal

Proposal

6.1 Site description

The site address is 2 Fitzwilliam Street, Parramatta and it comprises four allotments legally described as Lots 10, 11, 12, 13 and 14 in DP 1285124. The site sits in the heart of the Parramatta Central Business District (CBD) opposite Parramatta Railway Station (25m to the site's north) and the Parramatta Bus Interchange, a portion of which forms part of the site.

The site has a total area of approximately 2,811.8m^2, with two street frontages, including a circa 110m frontage to Fitzwilliam Street and a circa 115m street frontage to Argyle Street. The eastern boundary of the site also adjoins an approved 30-storey project (not yet constructed) on the southern half of the site at 10 Valentine Street. **Figure 1** shows the site and its context.

Currently, the site is vacant, and it contains limited vegetation, site fencing and remnant concrete slabs. An existing car park and driveway for service vehicles is located in the eastern portion of the site and a through-site pedestrian path is located within the site's western boundary. A portion of the Argyle Street footpath is also located on the site and includes a bus shelter.

Figure 1: Aerial view of the site (outlined in red)

Source: SJB

6.2 Location

The site is approximately 11.4km north-north-east of Bankstown Airport (i.e. closest airport to the site), measured from south-eastern edge of the site to the nearest runway threshold (RWY 11L). This is illustrated in Figure 2 below.

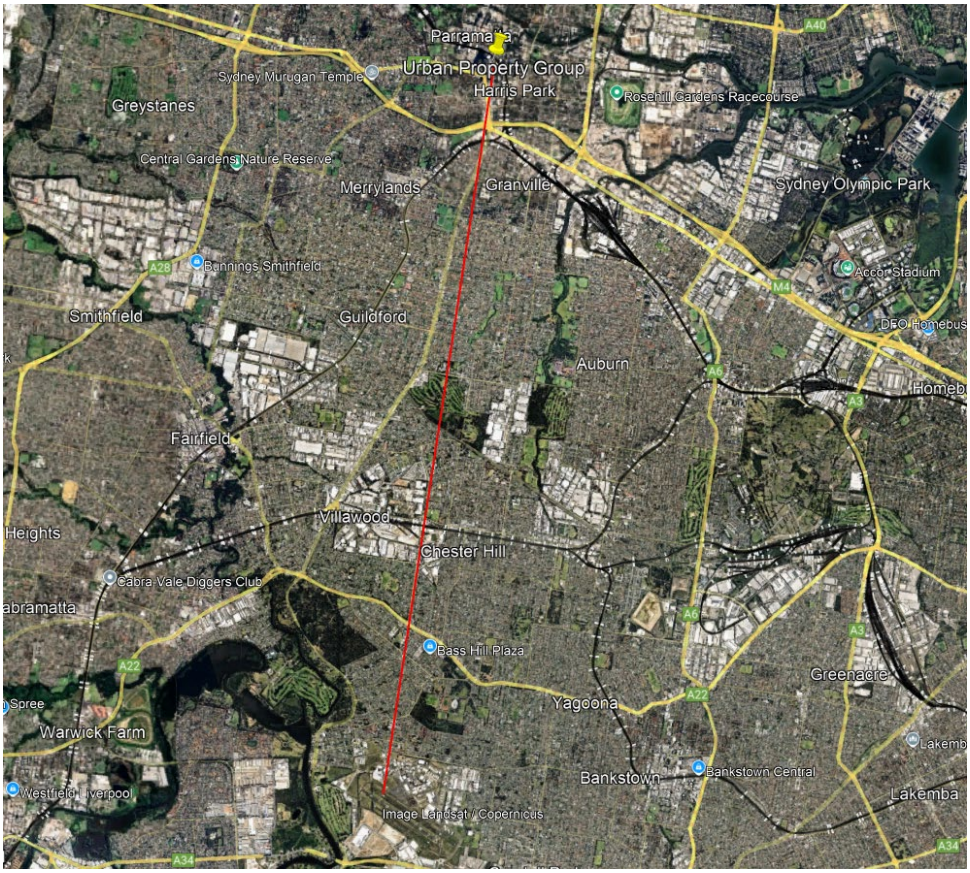

Figure 2: Satellite imagery showing the site in relation Bankstown Airport

6.3 Proposed Development

This SSDA seeks approval for a new mixed-use development comprising, BtR housing, hotel and retail uses. Specifically, the proposed development comprises the following works:

- Construction of a new mixed-use development consistent with the Stage 1 Concept Approval (as amended), comprising:
  - A shared podium containing hotel and retail uses
  - Two towers comprising hotel, BtR and affordable housing
- Basement carparking accessed via Fitzwilliam Street
- Through site link connecting Fitzwilliam and Argyle Street
- Associated landscaping and public domain works
- Extension and augmentation of physical infrastructure and utilities

For a detailed project description refer to the Environmental Impact Statement prepared by Beam Planning and the Architectural Drawings prepared by SJB.

6.4 Permanent Structure

UPG is proposing to construct two built structures at the site, referred to as the East (143m AHD) and West (168.05m AHD) towers. All plant and ancillary features are captured within this envelope, with both towers shown below at Figure 3.

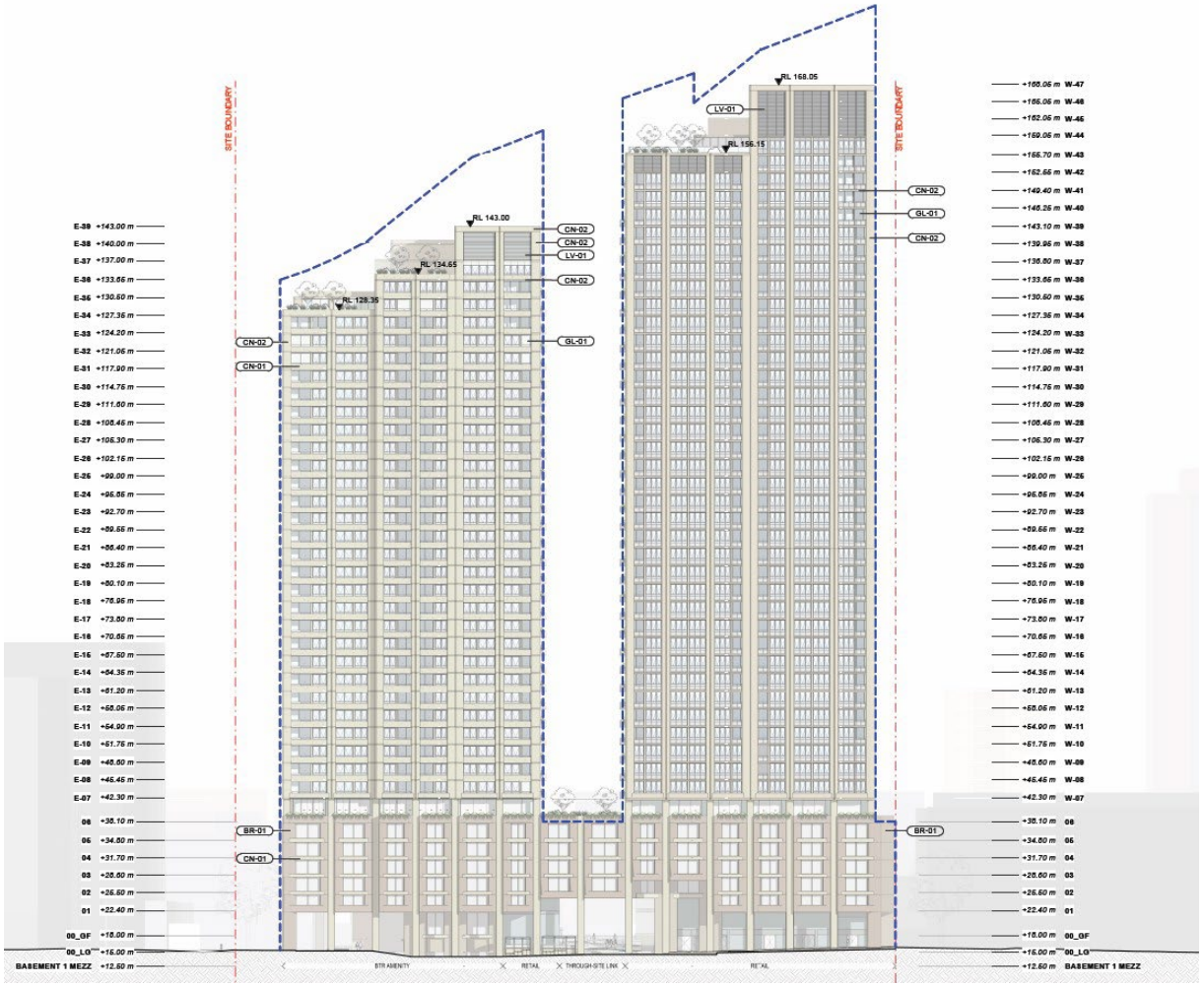

Figure 3: North elevation showing East (left) and West (right) towers

Note: blue dotted line indicated maximum planning envelope with actual proposed buildings both shorter as per labels

6.5 Crane Activity

Construction at the site will be completed using three tower cranes with luffing jibs. The operating heights of each will vary throughout construction and is summarised in the table below. All three (3) cranes that will be erected at the site will only intrude the OLS whilst remaining below all other airspace protection surfaces. The rationale for reaching this conclusion is provided in Section 7 of this report.

Summary of crane heights		
Crane	Resting height	Maximum height (minimum radius)
TC1	216.55m AHD	217.55m AHD
TC2	216.87m AHD	217.87m AHD
TC3	196.97m AHD	197.97m AHD

Figure 4: Summary of crane heights during various stages of construction

Figure 5 on the following page shows the three cranes at their maximum operating heights, whilst Figure 6 shows their respective boom swing arcs.

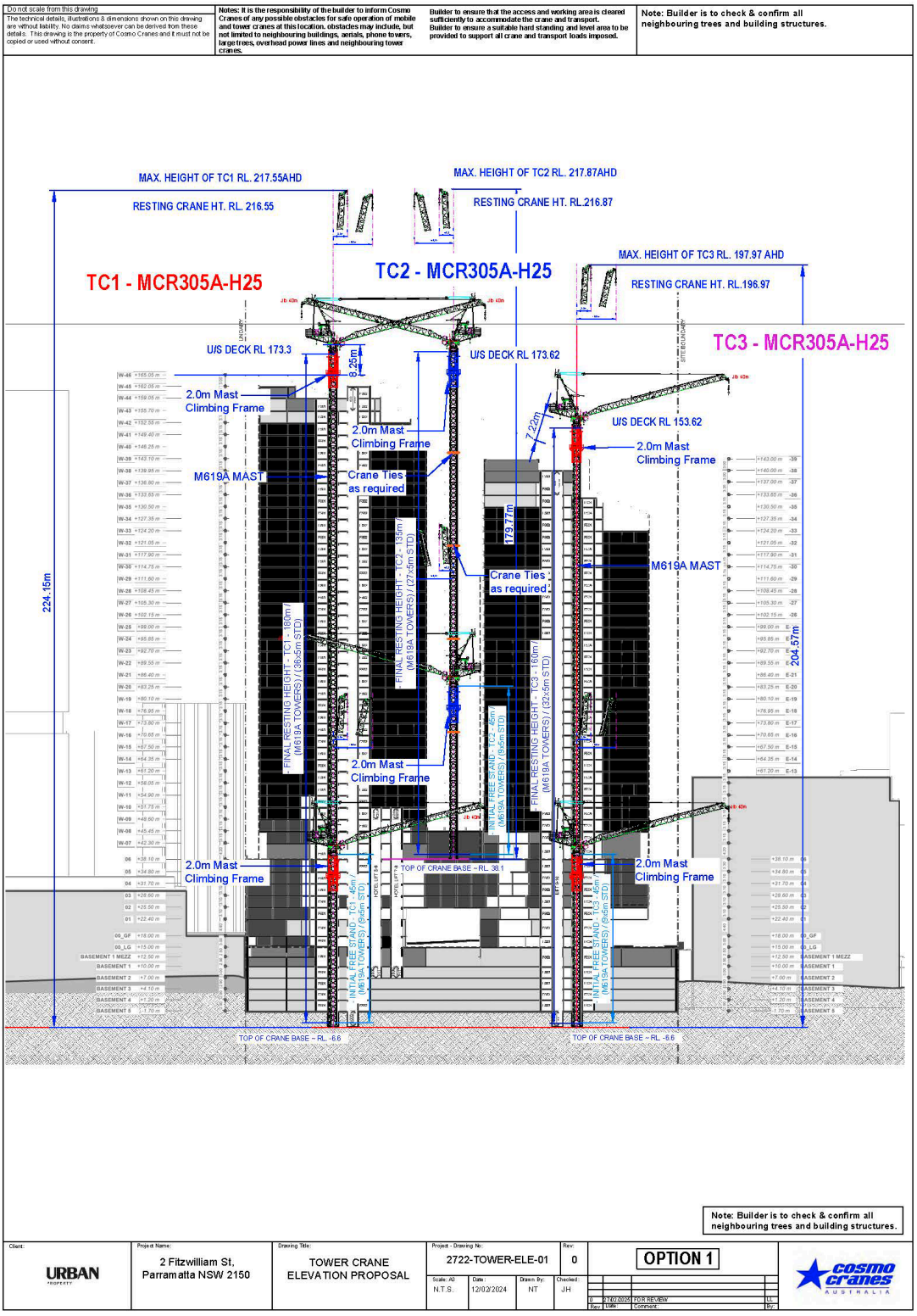

Figure 5: South elevation showing 3 x luffing jib cranes and resting and maximum heights

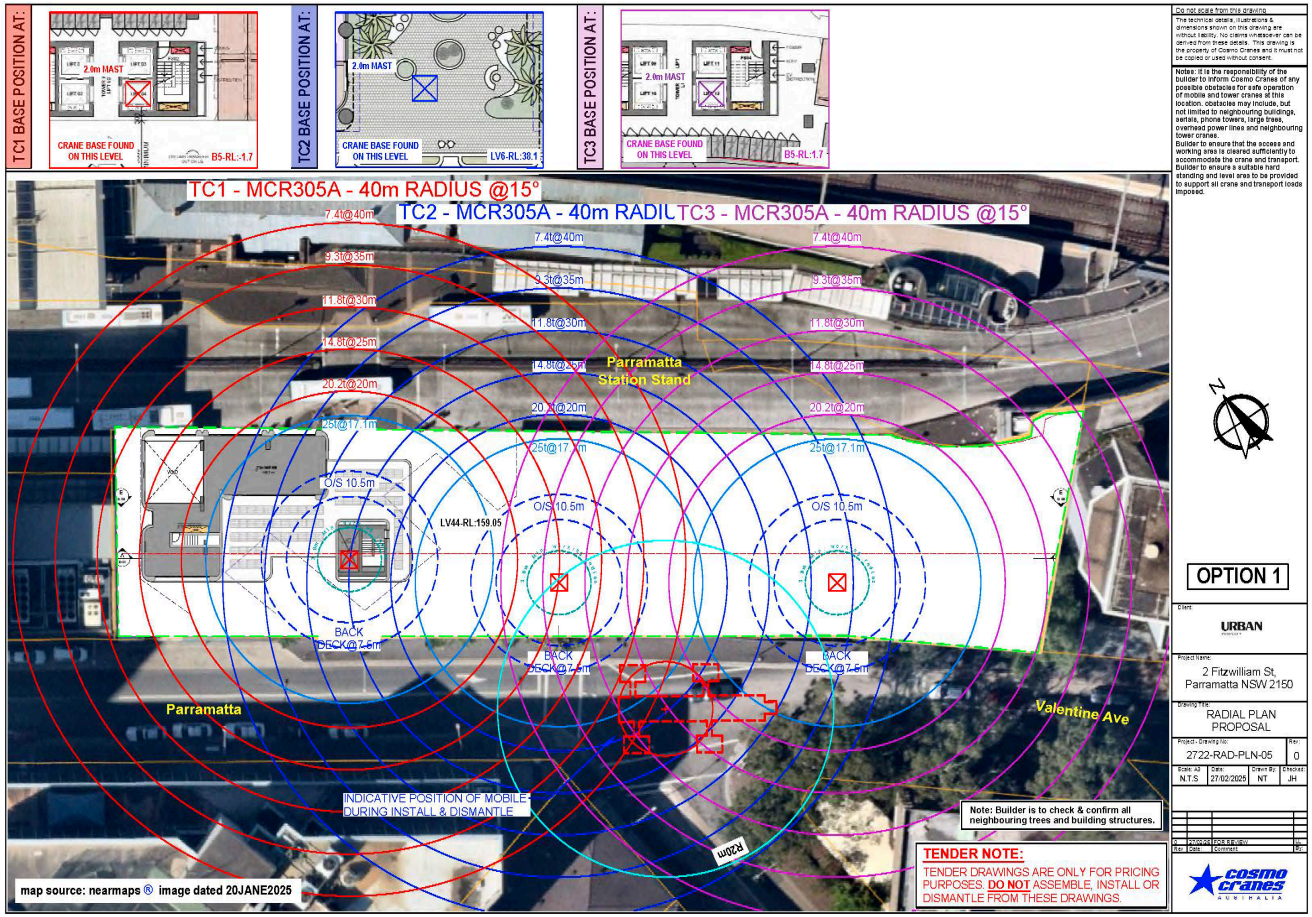

Figure 6: Plan view showing maximum swing arcs of TC1, TC2 and TC3

The table below summarises the approximate month each crane will be erected, when they will enter prescribed airspace (i.e. 156 AHD) as well as when they will be removed/dismantled from the site.

Summary of crane activity periods			
Crane	Date of installation	Date crane will penetrate OLS	Date of dismantling
TC1	January 2027	November 2027	February 2029
TC2	March 2027	November 2027	February 2029
TC3	January 2027	November 2027	September 2028

Figure 7: Summary of key dates relating to cranes at the site during construction

Specific dates will be provided closer to construction commencing. In the event changes to dates on controlled activity approvals are required, these will be communicated with Bankstown Airport and the Department so that updated approvals can be issued.

7

Prescribed Airspace Assessment Findings

Prescribed Airspace Assessment Findings

Based on the site location provided, interrogation of satellite imagery and modelling from first principles, Avlaw has calculated the heights of the most relevant airspace protection surfaces covering the site, which if penetrated require an aviation approval before being carried out. Although extracts from various Bankstown Airport and Sydney Airport charts are included for completeness, the heights below are the results of Avlaw's own modelling using MGA 94 coordinates provided by UPG:

- The OLS over the site is a horizontal plane at 156m AHD;
- The critical PANS-OPS surface over the site is the RWY 11C NDB missed approach which rises from 315.4m AHD in the SE corner of the site to 316.5m AHD in the NW corner; and
- The RTCC is a horizontal plane across the site at 335.24m AHD

The summary of Avlaw's prescribed airspace findings against the proposed development heights is tabulated on the following page.

Prescribed Airspace – Bankstown Airport and Sydney Airport					
Surface	***Height***	***East tower (143m AHD)***		***West tower (168.05m AHD)***	
		Intrusion?	Clearance/intrusion	Intrusion?	Clearance/intrusion
OLS	156m AHD	NO	13m	YES	12.05m
PANS-OPS	315.4m-316.5m AHD	NO	172.4-173.5m	NO	147.35m-148.45m
RTCC	335m AHD	NO	192m	NO	166.95m

Figure 8: Summary of Prescribed Airspace Assessment Findings (built structures)

Prescribed Airspace – Bankstown Airport and Sydney Airport							
Surface	***Height***	***TC1 (217.55m AHD)***		***TC2 (217.87m AHD)***		***TC3 (197.97m AHD)***	
		Intrusion?	Clearance/intrusion	Intrusion?	Clearance/intrusion	Intrusion?	Clearance/intrusion
OLS	156m AHD	YES	61.55m	YES	64.8m	YES	42.9m
PANS-OPS	315.4m-316.5m AHD	NO	97.85-98.95m	NO	97.53-98.63m	NO	117.43-118.53m
RTCC	335m AHD	NO	117.45m	NO	117.13m	NO	137.03m

Figure 9: Summary of Prescribed Airspace Assessment Findings (cranes)

7.1 OLS

The site falls under the OLS for Bankstown Airport as shown below in Figures 10 and 11. Specifically, it is the OHS of the OLS which covers the site and is a horizontal plane at 156m AHD.

Figure 10: Extract from Bankstown Airport OLS chart indicating the site (light blue = 156m AHD)

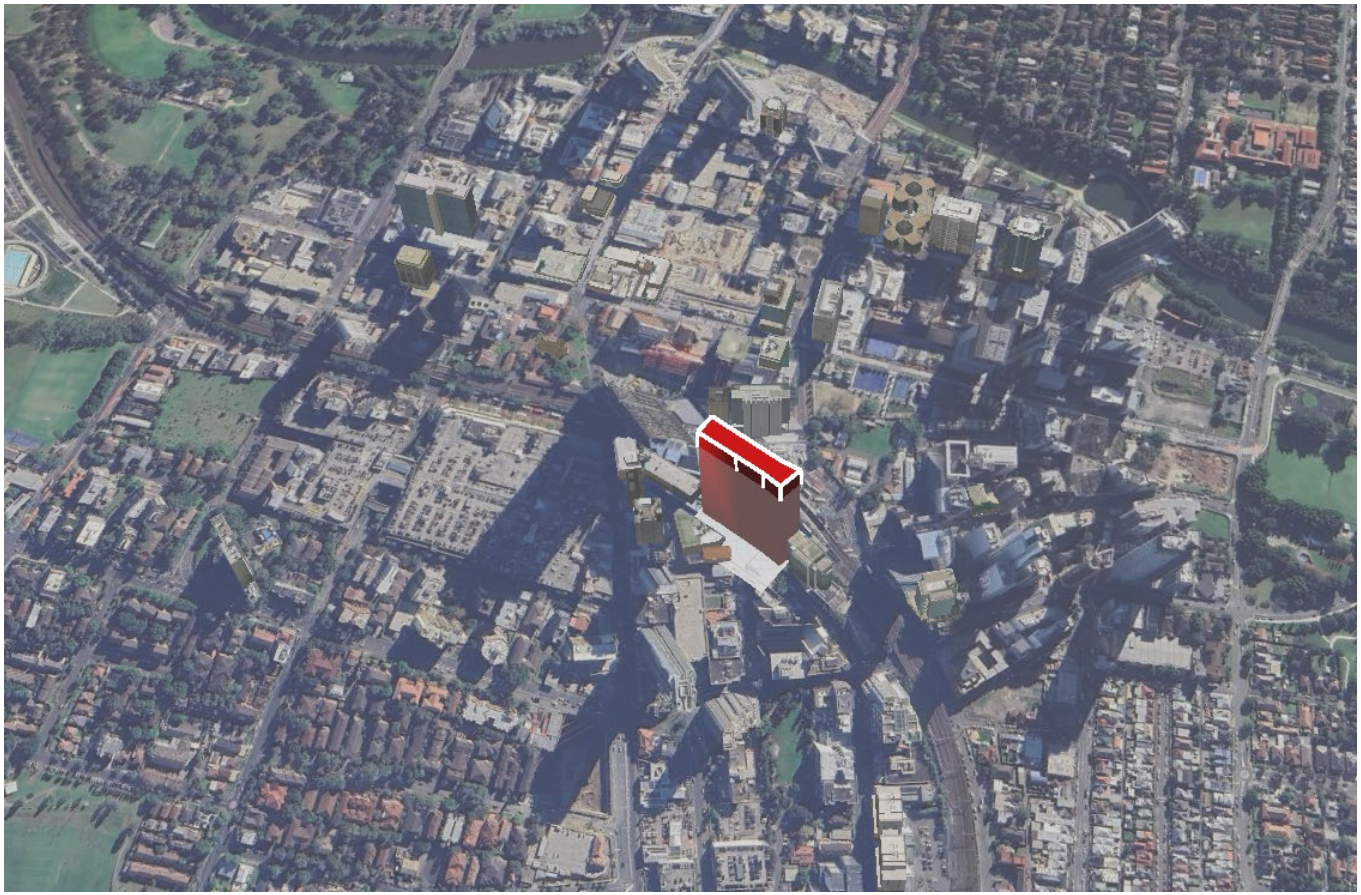

Figure 11: Avlaw model of OLS showing intrusion of permanent structure across the site

Note: Conservative approach was adopted at first whereby one structure up to the max envelope across the entire site was modelled. Updated modelling was unable to be completed due to extremely tight turnaround on final report. Please refer to Figure four (4) for actual proposed built form at the site

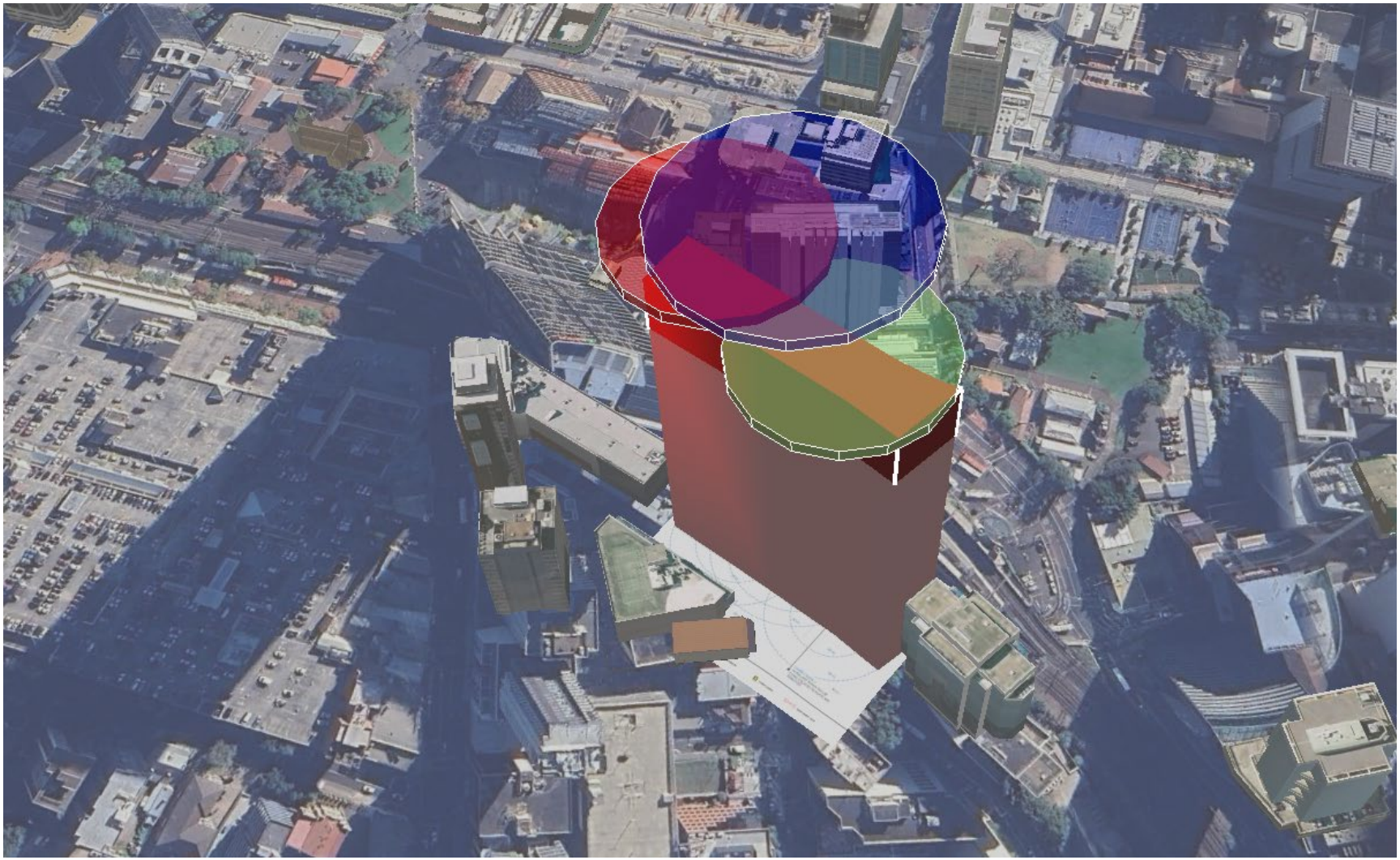

Figure 12: Avlaw model of OLS showing cranes at their maximum radii above the OLS

At a proposed height of 143m AHD, the East tower will remain below the OLS. The West tower however at 168.05m AHD will intrude the OLS and require controlled activity approval prior to being constructed. Avlaw believes this will be supported by aviation stakeholders and notes that CASA has already provided advice to this effect. With respect to the proposed construction at the site, they have clearly stated in a letter dated 17 July 2023 that the built structure will not introduce ant risks to aviation operations. It is also worth noting that CASA's advice was based on a built structure up to 181.06m AHD, which is taller than the final height of the West tower assessed in this report.

All three cranes reaching a maximum height of 217.55m AHD (TC1), 217.87m AHD (TC2) and 197.97m AHD (TC3) respectively will intrude the OLS and will therefore each require controlled activity approval prior to being erected. Avlaw believes all three cranes will also be supported by aviation stakeholders given that there are already permanent taller structures in close proximity to the site in the Parramatta CBD and the site is clear of the approach and take-off surfaces for all runways at Bankstown Airport.

7.2 PANS-OPS

The site is covered by a range of departure and approach IFP for aircraft operating at Bankstown Airport. The lowest of these relates to the NDB missed approach procedure for RWY 11C and ranges in height across the site, rising from 315.4m AHD in SE corner of the site to 316.5m AHD in the NW corner.

Figures 13 below shows an extract from the Bankstown Airport PANS-OPS chart whilst Figure 14 shows the results of Avlaw's own modelling.

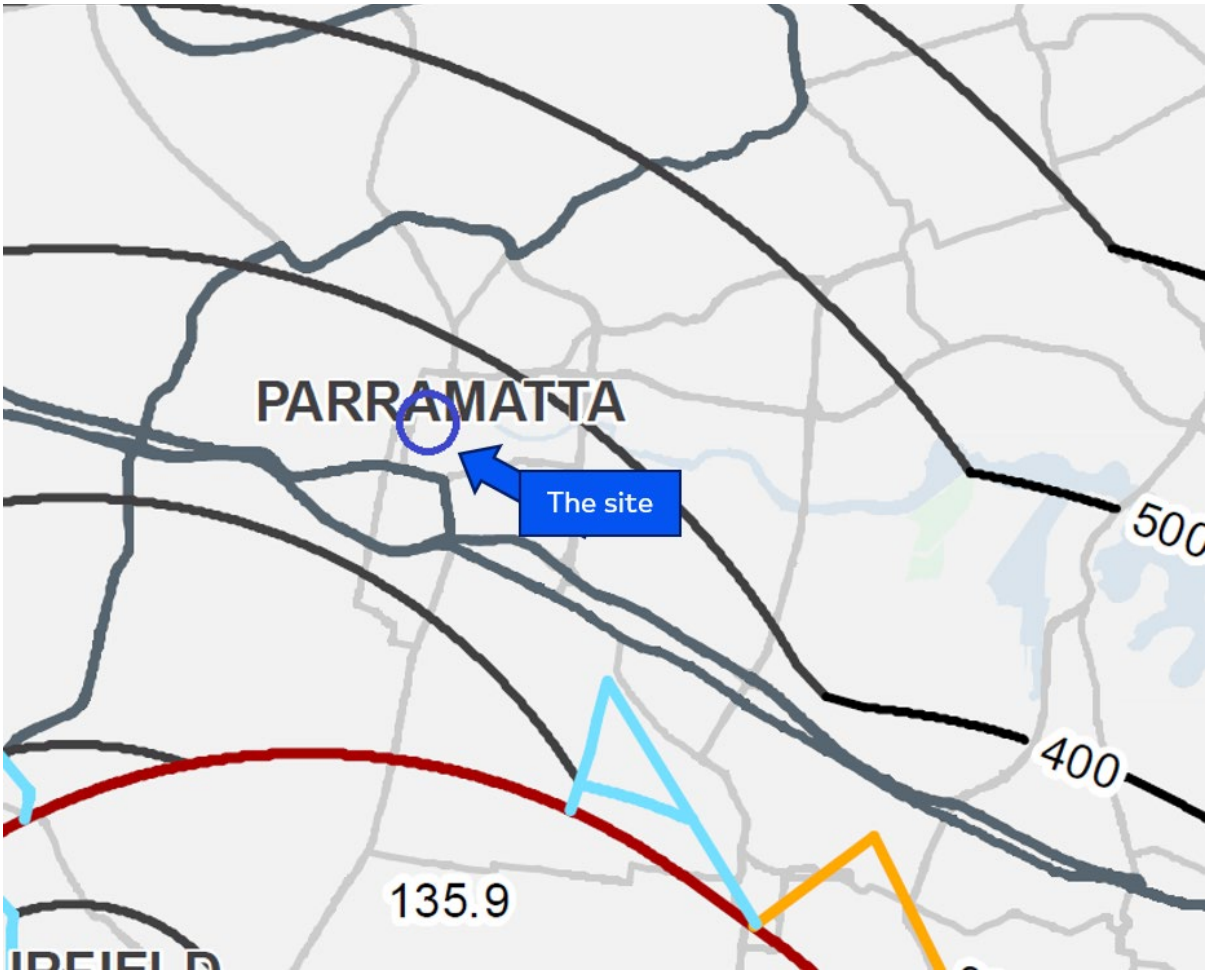

Figure 13: Extract from Bankstown Airport PANS-OPS chart indicating the site

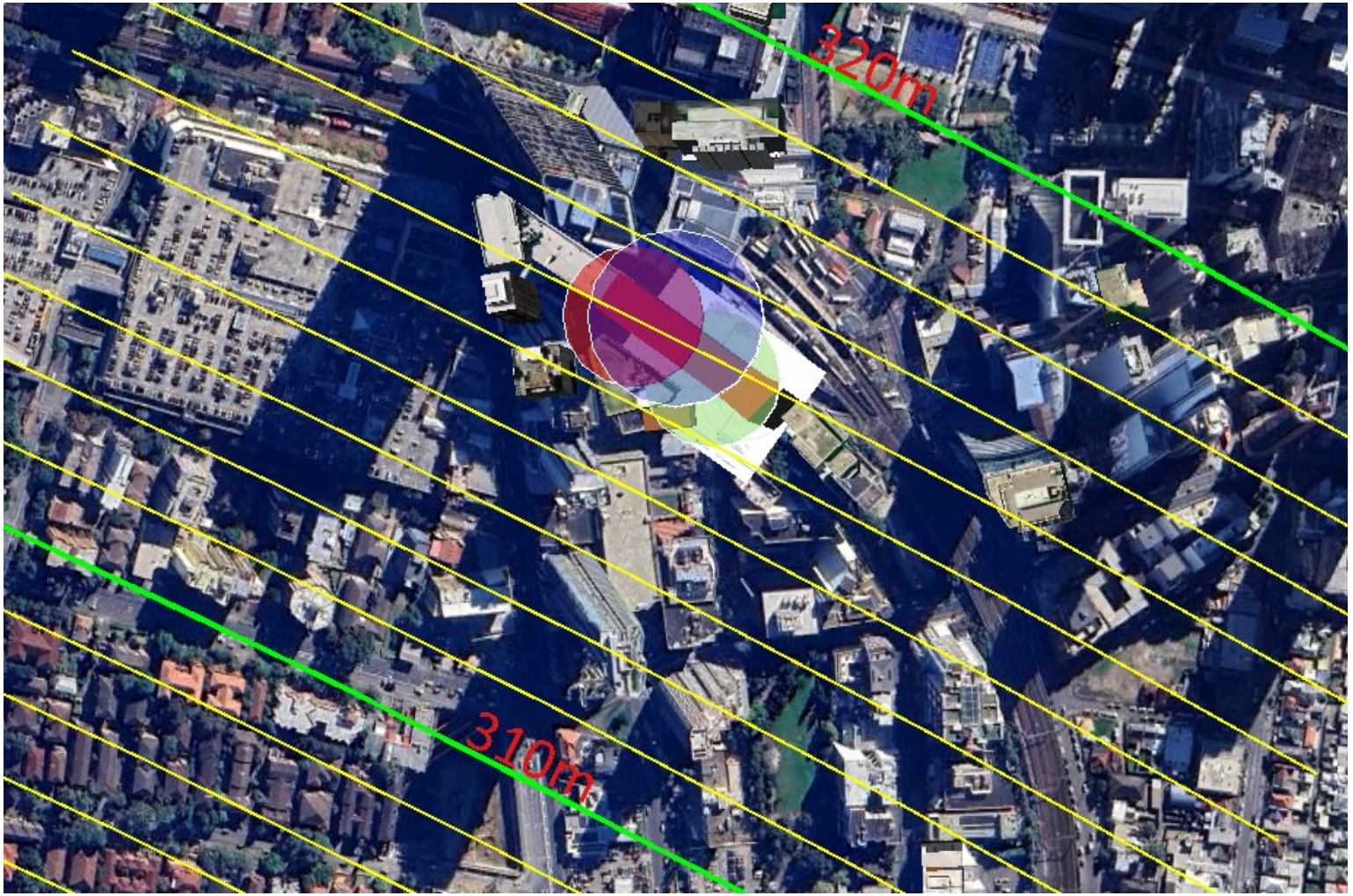

Figure 14: Avlaw model of the critical Bankstown Airport PANS-OPS surface showing built structure and three cranes not intruding

At proposed heights of 143m AHD and 168.05m AHD, the East and West towers will remain below the critical PANS-OPS surface covering the site. Crane activity reaching a maximum height of 217.55m AHD (TC1), 217.87m AHD (TC2) and 197.97m AHD (TC3) respectively will also remain well below this surface, therefore there will be no impact on IFP if the development proceeds.

7.3 RTCC

The site is covered by the Sydney Airport RTCC, specifically a horizontal segment at 335.24m AHD. As with the OLS and PANS-OPS described in section 4.1 and 4.2 above, Avlaw has produced a model of the RTCC from first principles which has produced a different result to that which is published by Sydney Airport. Figure 15 below is an extract from the RTCC that was sourced from the Sydney Airport website whereas Figure 16 shows the results of Avlaw's model.

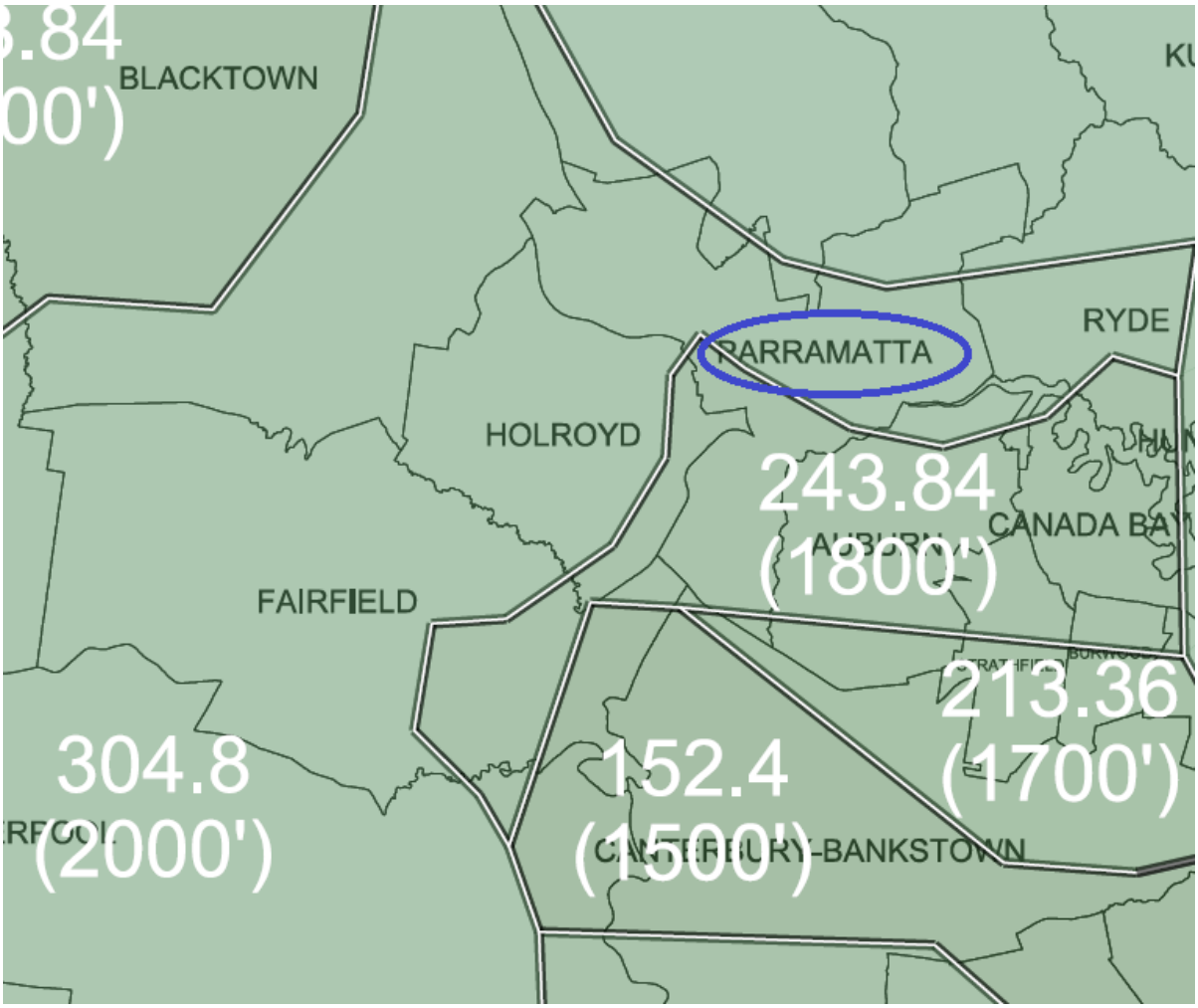

Figure 15: Extract from RTCC published by Sydney Airport (site under 304.8m AHD sector)

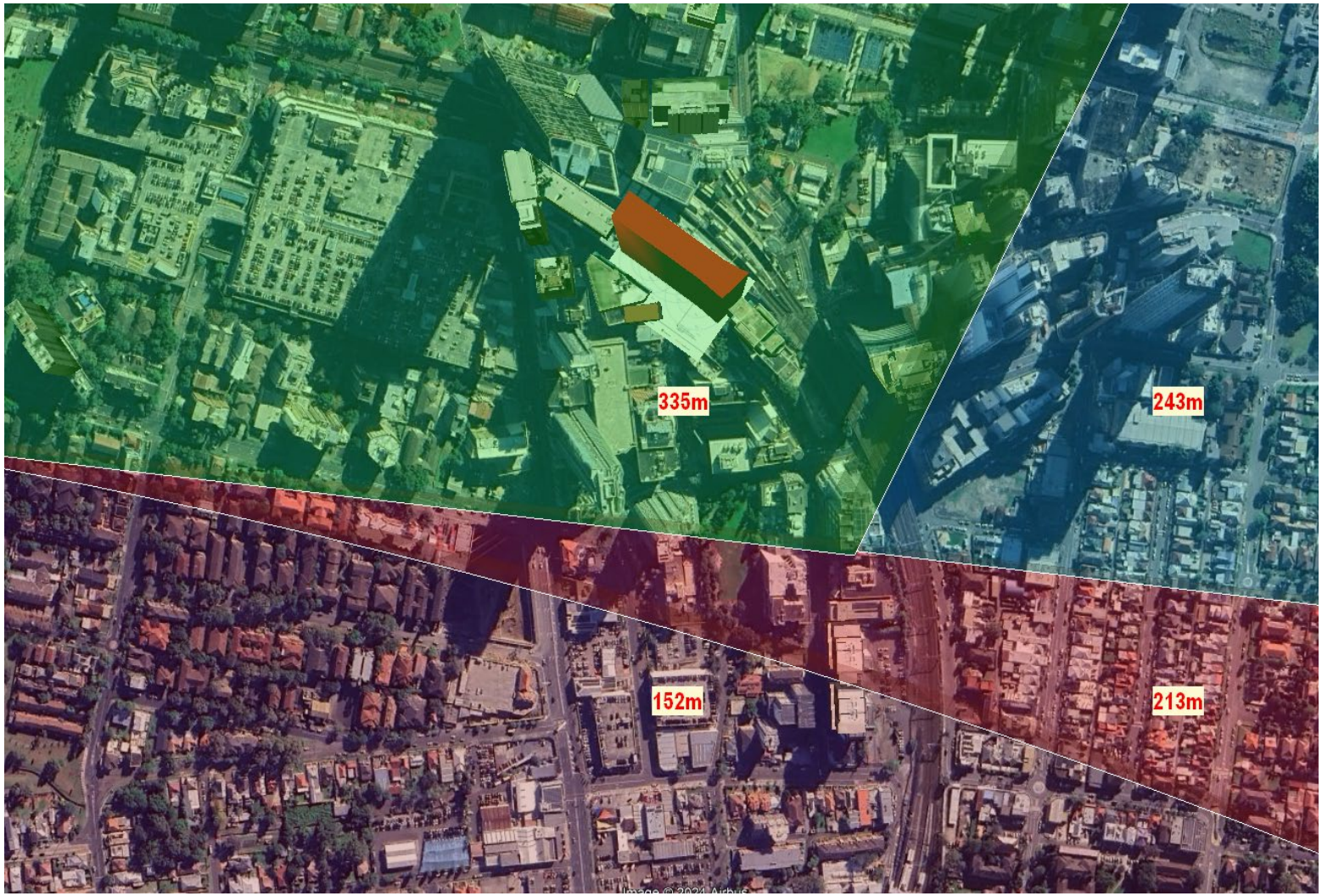

Figure 16: Avlaw model showing buildings below the RTCC over the site showing built and temporary structures below surface

At 143m AHD and 168.05m AHD respectively, neither of the East or West towers will intrude the RTCC. Three construction cranes will be erected at the site, reaching a maximum height of 217.55m AHD (TC1), 217.87m AHD (TC2) and 197.97m (TC3) AHD respectively, meaning none will intrude the RTCC either. Therefore, the proposed development at the site will not have any adverse impacts on the safe vectoring of aircraft in Instrument Meteorological Conditions (IMC).

8

Aviation Facilities - Communications, Navigation and Surveillance

Aviation Facilities - Communications, Navigation and Surveillance

NASF Guideline G Attachment 3 provides advice on areas of concern for interference with Communication, Navigation and Surveillance facilities. The proposed development is nominally 21.4km from the Sydney Airport Terminal Area Radar (TAR) and 16.8km from the Cecil Park TAR.

The Sydney Airport TAR and Cecil Park TAR have specified clearances and provide overlap for performance issues that may exist on each due to individual isolated structures impacting the use of one or the other. At 21.4 km from the site, the protection surface for the Sydney Airport TAR ranges from 224.95m AHD at the eastern edge to 225.8m AHD when measured at the tip of the TC1. The site is closer to the Cecil Park TAR, near Western Sydney Airport, but starts higher than Bankstown Airport. At 16.8km from the site, the surface is 347.1m AHD.

Avlaw's assessment is that there will be no adverse impacts as all permanent and temporary structures proposed will remain below the TAR as modelled by Avlaw. Once the applications for controlled activity approvals are lodged by UPG, Airservices Australia will conduct their own assessment to confirm that there are no performance issues from intrusion of any structures into the surfaces described above.

9

Helicopter Operations

Helicopter Operations

Civil Aviation Regulation 92 requires the pilot of a helicopter to determine the safe take-off departure and landing approach by taking into account factors including aircraft performance, wind direction, obstacles, and emergency landing in the event of engine failure. All helicopter flight operations and helipads in the vicinity of the site have been reviewed and assessed against the proposed development at the site, the findings from which are described below.

9.1 Westmead Health Precinct

The airspace associated with hospital helipads is not protected under the Act or Regulations. Instead, there are a range of guidelines as well as advisory publications published by CASA which collectively serve to prevent any buildings or cranes with the potential to adversely impact helicopter operations at hospitals from being approved prior to consultation with the local helicopter operators, owners of the assets as well as any aviation advisors those stakeholders engage for assistance.

Given the site's proximity to the Westmead Health Precinct, Avlaw has carefully examined approach and departure paths for the three currently operational HLSs at Westmead Hospital and Westmead Children's Hospital. Design Development Overlays (DDOs) have been cited for each of the aforementioned HLSs and are shown below at Figure 17. These have been provided by NSW Health's aviation advisors AviPro and illustrate the current and frequently used flight paths for each HLS.

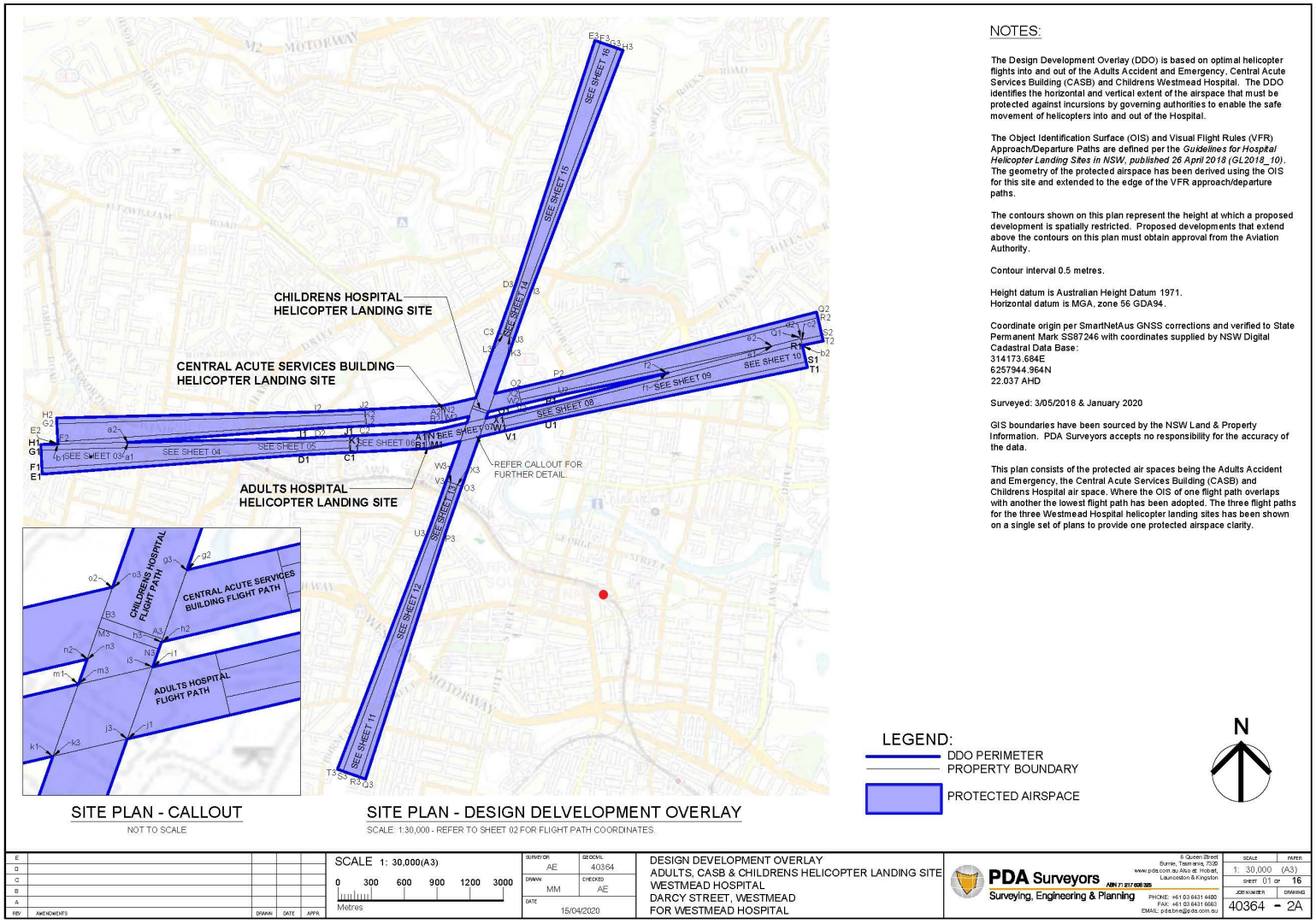

Figure 17: DDOs for the three HLSs at Westmead Children's Hospital and Westmead Hospital (approx. site location marked by red dot)

Each of the HLSs illustrated above are now assessed individually below.

Westmead Children's Hospital

The HLS at Westmead Children's Hospital is approximately 2.1km NW of the site and is marginally the closest of all the helipads in the Westmead Health Precinct to the site. Preferred approaches and departures to the helipad, which is located on the roof of the car park, are clear of the site. This shown in Figure 17 where the lateral limits of the DDO travelling north-south does not extend over the site. Another illustration of the preferred flight paths for this HLS was sourced from the HLS Operations Manual available through OzRunways, with the relevant extract inserted below as Figure 18.

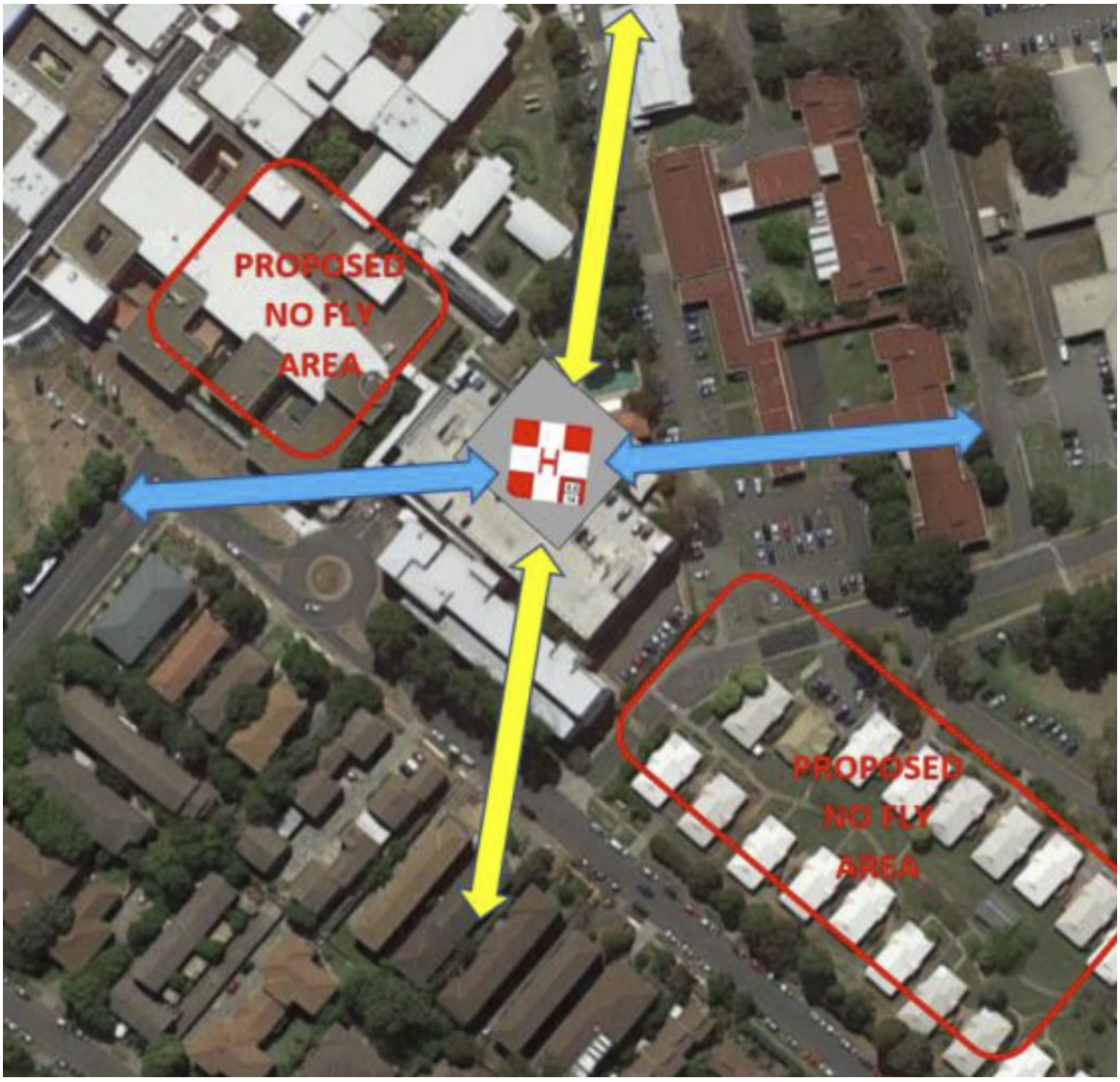

Figure 18: Preferred flight paths marked by yellow arrows (alternatives in blue)

Therefore, Avlaw concludes that approaches and departures for the Westmead Children's Hospital HLS will not be adversely impacted by the proposed development at the site.

Westmead Hospital

There are currently two (2) operational HLSs at Westmead Hospital:

- A&E HLS; and
- CASB HLS

When examining the DDO applicable to each of the above HLSs, it is clear that neither extend over the site (refer to Figure 17). In addition to the DDO which illustrates current preferred flight paths in Visual Meteorological Conditions (VMC), IFP as described in the Departure and Approach Procedures (DAP) of Airservices' Aeronautical Information Publication (AIP) reveal two flight tracks that are not reflected on the DDO. These are referred to as RNP 052 and RNP 127 and the operational airspace applicable to each procedure is shown below at Figures 19 and 20.

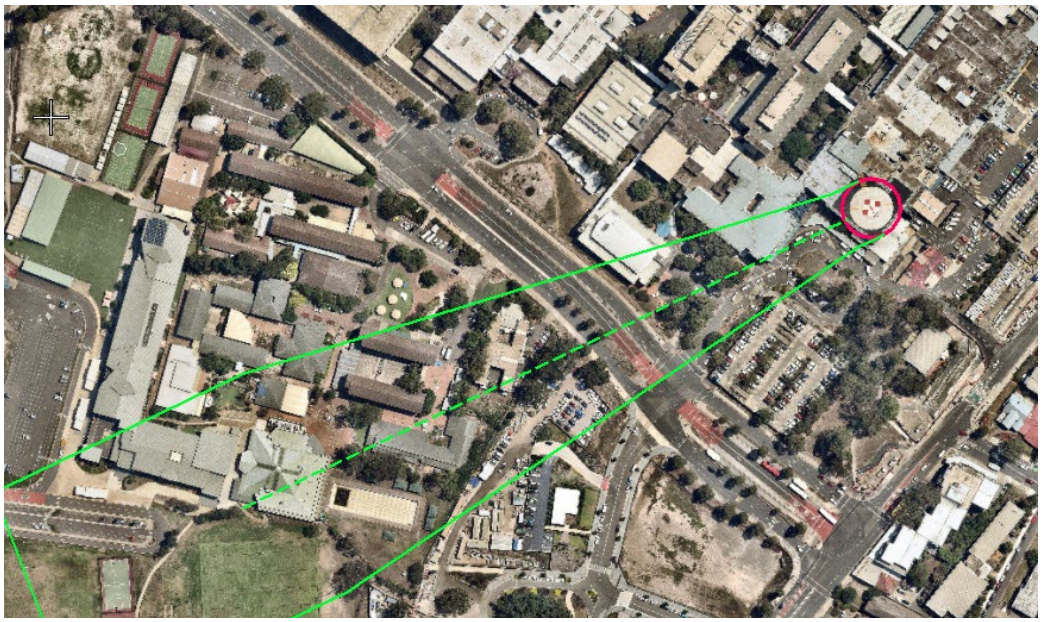

Figure 19: CASA AC139.R-01 v3.1 helipad operational airspace RNP 052M flight path (A&E HLS)

Figure 20: CASA AC139.R-01 v3.1 helipad operational airspace for RNP 127M flight path (A&E HLS)

It is clear that the protection surfaces related to the IFP illustrated above do not extend over the site and therefore, Avlaw can confirm that helicopter activities at the Westmead Hospital will not be adversely impacted if the development at the site proceeds.

Westmead CareFlight Base

Information with respect to the helicopter flight operations for this HLS has been sourced from OzRunways and shows preferred flight paths to/from this ground level helicopter landing site are to the East and West. The image inserted as Figure 21 below is taken on 8 Feb 2022 and shows the view to the south indicating the location of the CareFlight Base along with other with other HLS's in the Westmead Health Precinct and tall obstacles in the Parramatta CBD.

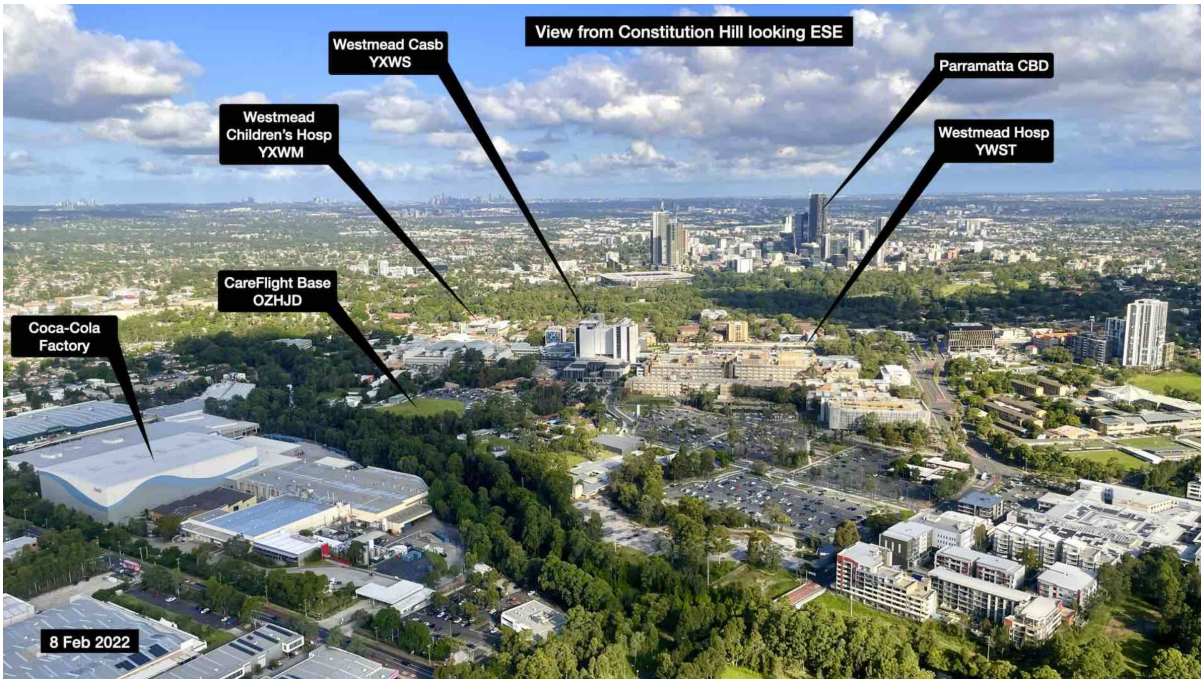

Figure 21: Built-up areas between the CareFlight base and the Westmead Hospital

The extent and height of existing buildings between the site and the HLS would indicate that even if aircraft did overfly the site to/from this HLS, they would be at an altitude that would be well clear of the proposed developments at the site. Therefore, nil impact has been identified.

9.2 Other Helicopter Operations

There are a number of prescribed helicopter transit routes published in Aeronautical Information Publication (AIP) En-Route Supplement Australia (ERSA) for helicopter operations in the Sydney Control Zone. These are included in the Coded Clearances and Operating Requirements for Bankstown Airport, with the coded clearances containing the specific routes and prescribed altitudes to be flown.

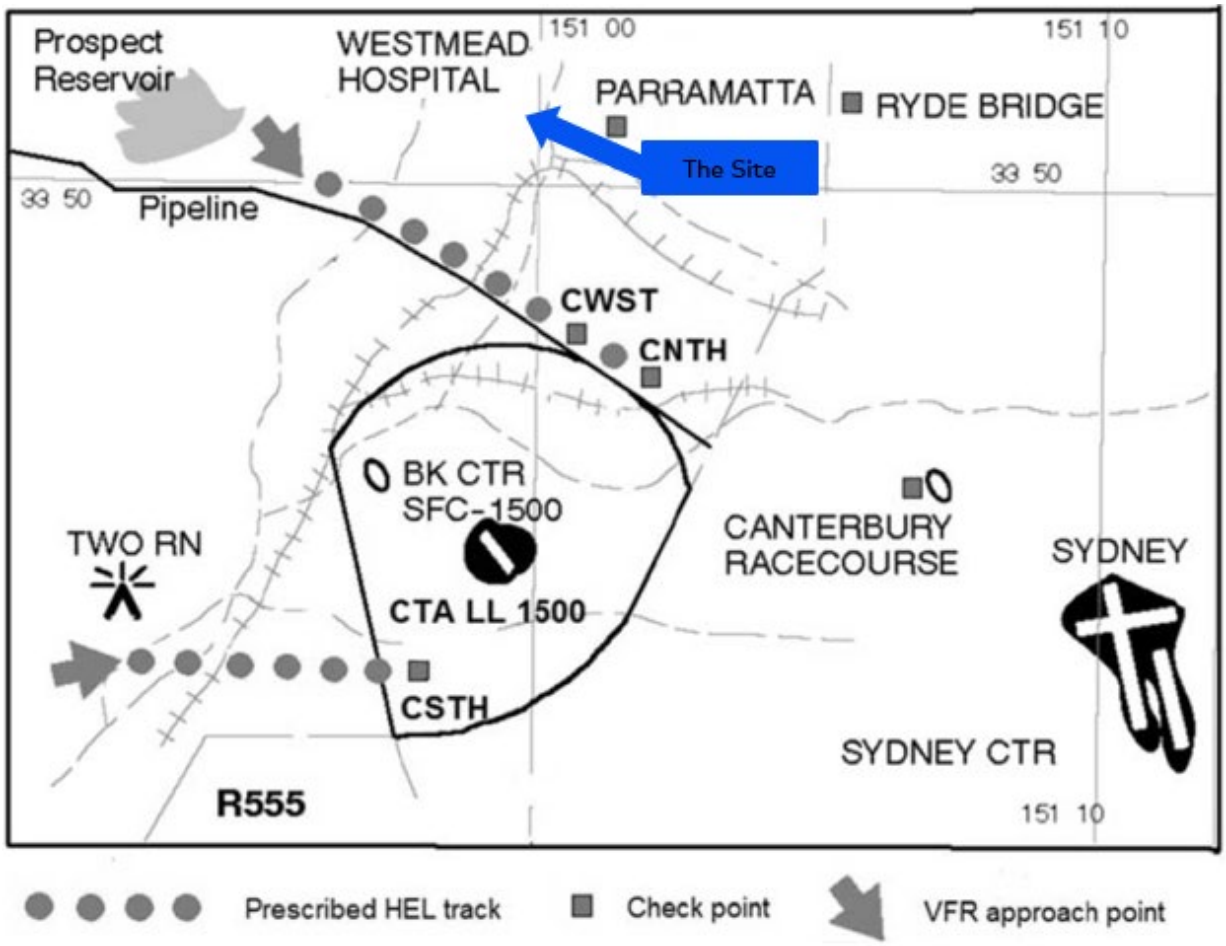

Figure 22: CHOPPERS NORTH/CHOPPERS WEST transit routes (SYDNEY/BANKSTOWN AIP ERSA)

Avlaw's assessment has found that the proposed development site is clear of specific helicopter transit routes, namely CHOPPERS NORTH and CHOPPERS WEST. In any case, any helicopters flying under Visual Flight Rules (VFR) over the Parramatta CBD and in close proximity to the site will need to comply with minimum separation and obstacle clearance standards. The proposed development at the site is near other taller existing structures, meaning appropriate separation and obstacle clearance will be ensured with reference to other existing taller built structures which are also closer to the airport than the site e.g. 6 and 8 Parramatta Square (240m AHD).

It is also worth noting that temporary structures at the site which will be considered controlled activities will likely be approved based on specific conditions including lighting and marking. This is a common risk mitigation for obstacles intruding protected airspace and is deemed to be adequate in the context of this development based on other existing hazards to flight operations near the site.

10

Other Aviation Compliance Criteria

Other Aviation Compliance Criteria

The prescribed airspace limits and flight paths associated with helicopter operations that were discussed in earlier sections of this report were considered by Avlaw as being the most critical and likely to limit the height of built and temporary structures at the site, hence the detailed analysis in those respective sections.

There are however other potential hazards to aircraft operations in the context of property development which are contained in the various guidelines and principles that collectively form the NASF. A desktop assessment of these other restrictions has been considered appropriate in the context of this proposed development, the findings of which are summarised in the table below with the associated diagrams inserted on the following pages.

NASF reference	Avlaw's assessment
Guideline A (Noise)	No impediment to land use at the site
Guideline B (Windshear and Turbulence)	N/A to the site (outside trigger assessment area)
Guideline C (Wildlife)	Site within 8-13km wildlife zone (no action needed based on land use)
Guideline D (Wind Turbines)	N/A as no wind farm is proposed at the site
Guideline E (Lighting)	Site outside lighting planes A, B, C and D and 6km radius
Guideline F (Prescribed Airspace)	Refer to Section 7 of this report
Guideline G (Aviation facilities)	Refer to Section 8
Guideline I (Strategic HLSs)	Refer to Section 9

Figure 23: Summary of desktop findings against other aviation assessment criteria

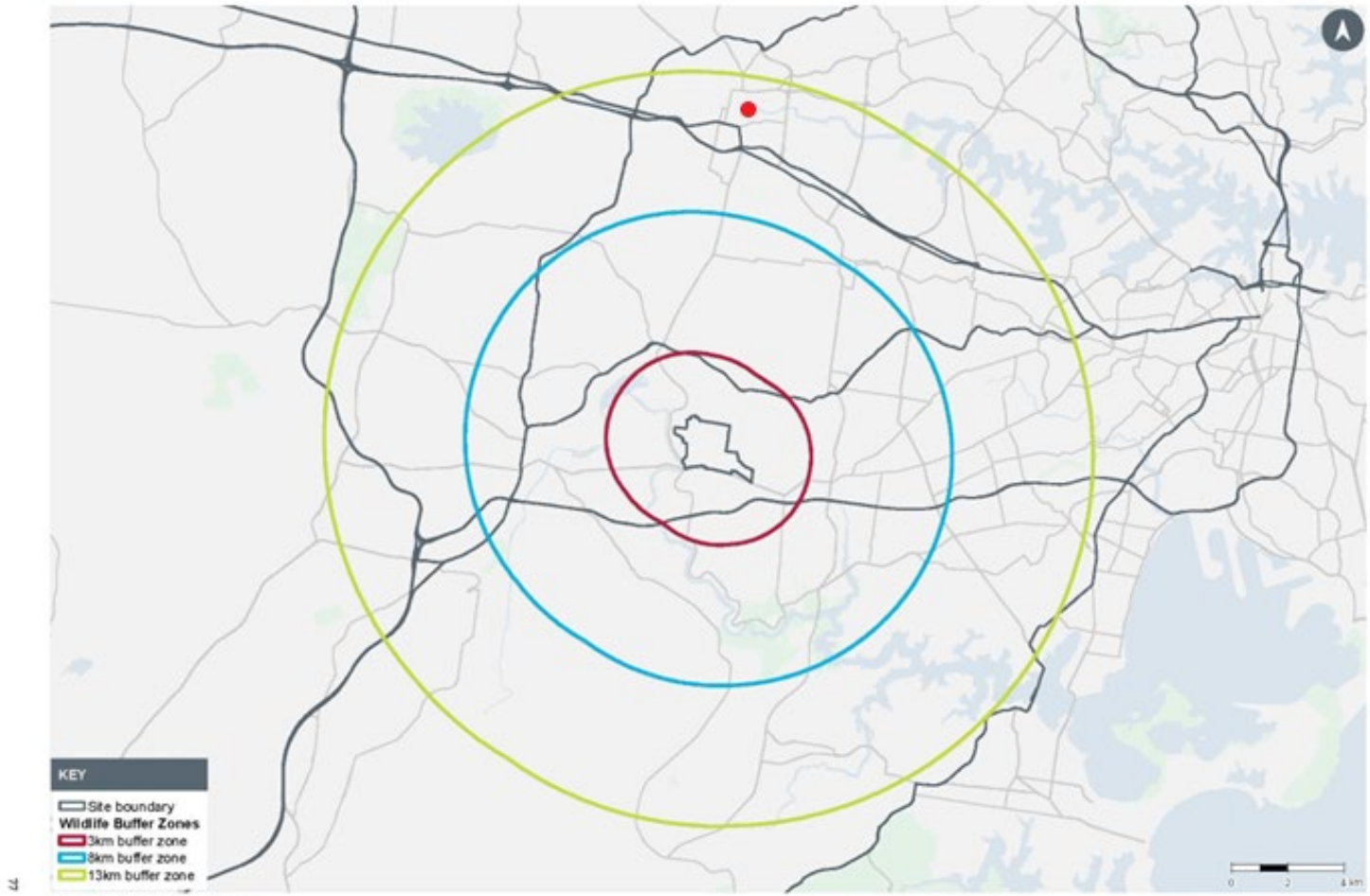

Figure 6.3: Wildlife buffer zones

Figure 24: Wildlife Buffer Zone Map showing the approx. site location (red circle) within the 8-13km zone

Wildlife Hazard Management Action Table **Attachment 1**

Land use types	Likely attractants ▲ natural elements ■ structural elements ● waste and food	Wildlife attraction risk	Actions for existing development and land uses in wildlife management areas			Actions for new and changed development and land uses in wildlife management areas		
			0-3 km (Area A)	3-8 km (Area B)	8-13 km (Area C)	0-3 km (Area A)	3-8 km (Area B)	8-13 km (Area C)
Agriculture								
Turf farm, piggery, abattoir, aquaculture	▲ ■ ●	High	Mitigate	Mitigate	Monitor	Incompatible	Mitigate	Monitor
Fruit tree farm/orchard	▲ ■ ●	High	Mitigate	Mitigate	Monitor	Incompatible	Mitigate	Monitor
Fish processing/packing plant	▲ ■ ●	High	Mitigate	Mitigate	Monitor	Incompatible	Mitigate	Monitor
Farm (cattle, dairy, poultry, crops)	▲ ■ ●	Moderate	Mitigate	Monitor	Monitor	Mitigate	Mitigate	Monitor
Horticulture, viticulture, market farms/gardens	▲ ■ ●	Moderate	Mitigate	Monitor	Monitor	Mitigate	Mitigate	Monitor
Forestry	▲ ●	Low	Monitor	Monitor	No Action	Monitor	Monitor	No Action
Plant nursery	▲ ■ ●	Low	Monitor	Monitor	No Action	Monitor	Monitor	No Action
Conservation								
Wildlife/conservation area - wetland, waterways	▲	High	Mitigate	Mitigate	Monitor	Incompatible	Mitigate	Monitor
Wildlife/conservation area - dryland	▲	Moderate	Mitigate	Monitor	Monitor	Mitigate	Mitigate	Monitor
Recreation								
Significant open water (ancillary to development)	▲	High	Mitigate	Mitigate	Monitor	Incompatible	Mitigate	Monitor
Showground	▲ ■ ●	High	Mitigate	Mitigate	Monitor	Incompatible	Mitigate	Monitor
Significant landscaped space (ancillary to development)	▲	Moderate	Mitigate	Monitor	Monitor	Mitigate	Mitigate	Monitor
Golf course	▲ ■ ●	Moderate	Mitigate	Monitor	Monitor	Mitigate	Mitigate	Monitor
Park, playground	▲ ●	Moderate	Mitigate	Monitor	Monitor	Mitigate	Mitigate	Monitor
Picnic areas, camping ground	▲ ●	Moderate	Mitigate	Monitor	Monitor	Mitigate	Mitigate	Monitor
Racetrack, horse riding school	▲ ■ ●	Moderate	Mitigate	Monitor	Monitor	Mitigate	Mitigate	Monitor
Sports facility (tennis, bowls, football fields)	▲ ■ ●	Moderate	Mitigate	Monitor	Monitor	Mitigate	Mitigate	Monitor
Commercial								
Food processing or storage facility	■ ●	High	Mitigate	Mitigate	Monitor	Incompatible	Mitigate	Monitor
Fast food, drive-in, outdoor restaurant	■ ●	Low	Monitor	Monitor	No Action	Monitor	Monitor	No Action
Shopping centre	■ ●	Low	Monitor	Monitor	No Action	Monitor	Monitor	No Action
Warehouse (food storage)	■ ●	Low	Monitor	Monitor	No Action	Monitor	Monitor	No Action
Car park	■ ●	Very Low	Monitor	No Action	No Action	Monitor	No Action	No Action
Cinemas	■ ●	Very Low	Monitor	No Action	No Action	Monitor	No Action	No Action
Hotel/motel	■ ●	Very Low	Monitor	No Action	No Action	Monitor	No Action	No Action
Office building	■ ●	Very Low	Monitor	No Action	No Action	Monitor	No Action	No Action
Petrol station	■ ●	Very Low	Monitor	No Action	No Action	Monitor	No Action	No Action
Warehouse (non-food storage)	■ ●	Very Low	Monitor	No Action	No Action	Monitor	No Action	No Action
Utilities								
Food / organic waste facility	■ ●	High	Mitigate	Mitigate	Monitor	Incompatible	Mitigate	Monitor
Putrescible waste facility - landfill	●	High	Mitigate	Mitigate	Monitor	Incompatible	Mitigate	Monitor
Putrescible waste facility - transfer station	■ ●	High	Mitigate	Mitigate	Monitor	Incompatible	Mitigate	Monitor
Water infrastructure (drains, channels, basins)	▲	High	Mitigate	Mitigate	Monitor	Mitigate	Mitigate	Monitor
Non-putrescible waste facility - landfill	●	Moderate	Mitigate	Monitor	Monitor	Mitigate	Mitigate	Monitor
Non-putrescible waste facility - transfer station	■ ●	Moderate	Mitigate	Monitor	Monitor	Mitigate	Mitigate	Monitor
Sewage / wastewater treatment facility	■ ●	Moderate	Mitigate	Monitor	Monitor	Mitigate	Mitigate	Monitor
Potable water treatment facility	▲ ■	Low	Monitor	Monitor	No Action	Monitor	Monitor	No Action

Figure 25: NASF Guideline C Attachment 1 - risk ratings by land use type (land use applicable to the site highlighted 'aqua')

11

Conclusions

Conclusions

UPG are proposing to construct two built structures at the site, referred to as the East (143m AHD) and West (168.05m AHD) towers. The East tower will not be considered an obstacle from an aviation perspective as it will remain below all airspace protection surfaces covering the site and will therefore not require controlled activity approval prior to construction. The West tower will intrude the Bankstown Airport OLS, but will remain below all other airspace protection surfaces. This building will require controlled activity approval prior to construction and Avlaw believes it should be supported by aviation stakeholders. This assessment is consistent with CASA's advice which has already been received with respect to a taller permanent structure at the site in July 2023.

Crane activity at the site will consist of three luffing jib cranes which will reach maximum heights of 217.55m AHD (TC1), 217.87m AHD (TC2) and 197.97m (TC3) respectively. All three cranes will intrude the Bankstown Airport OLS, but will remain below the PANS-OPS and RTCC surfaces covering the site. Avlaw believes that all three cranes should be supported by aviation stakeholders, subject to specific conditions that will be determined by CASA.

The protection surface for the Bankstown Airport TAR at the site is as low as 224.95m AHD at the site, which means that the East and West towers as well as all three cranes will remain below this surface. Airservices will conduct a detailed assessment of any impacts on the use of the radar, which Avlaw anticipates will be favourable given the site's proximity to the Cecil Park TAR which has a protection surface at the site well above the height of TC3.

Airspace associated with helicopter operations in the vicinity of the site has also been assessed, with flight paths to and from multiple HLSs within the Westmead Health Precinct of particular interest. Avlaw has found that helicopter operations related to the Westmead Hospital A&E and CASB HLSs, Westmead Children's Hospital and Westmead CareFlight Base will not be unaffected by the development at the site as all flight paths are clear of the site. Other helicopter operations in accordance with transit routes which are specified in the AIP ERSA have also been cited and none will overfly the site and will therefore also not be adversely impacted by development at the site.

Other aviation restrictions which are documented across various guidelines within the NASF have been considered and none have been identified as restrictive to the proposed development at the site.

Therefore, Avlaw believes that the built structures and temporary crane activity at the site will not adversely affect the safety, efficiency or regularity of aircraft operations at Bankstown Airport, Sydney Airport or helicopter operators and should be approved.

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