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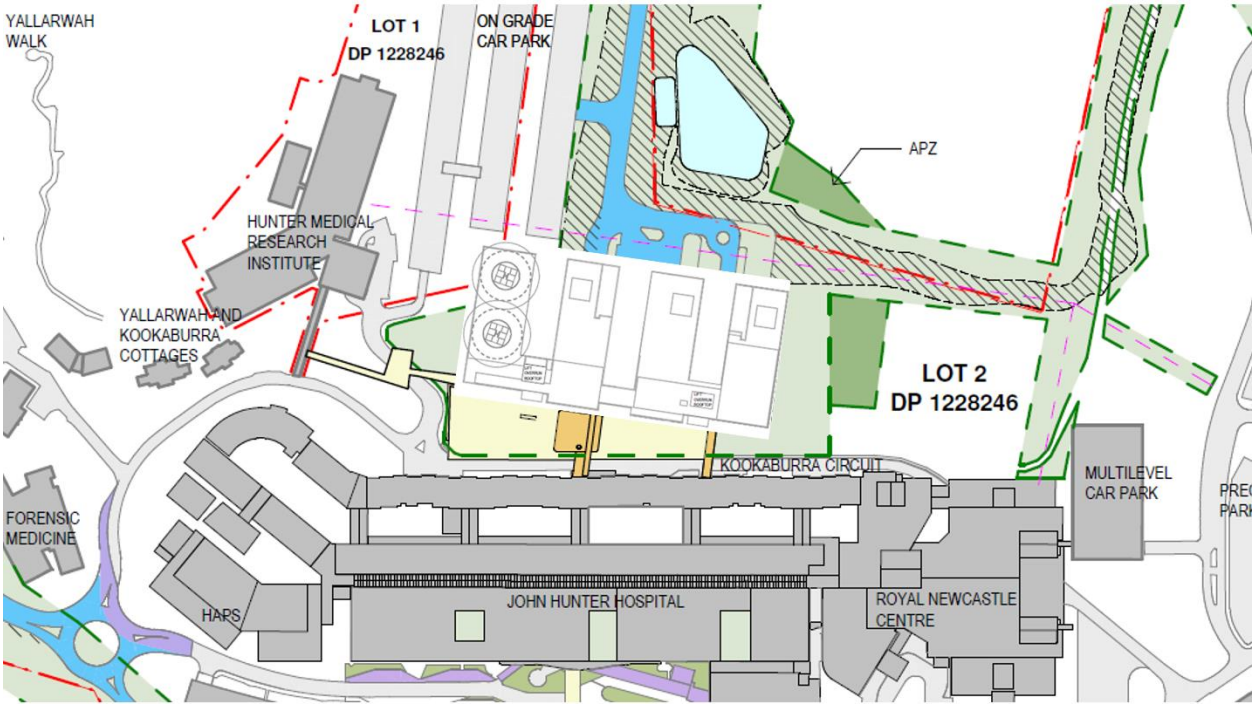
ABN 94 154 052 883

JOHN HUNTER HEALTH AND INNOVATION PRECINCT (JHHIP) PROJECT
STATE SIGNIFICANT DEVELOPMENT (SSD) REPORT (AVIATION IMPACT STATEMENT)



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ROOFTOP HELIPORT

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This Report is prepared for NSW Health Infrastructure for the John Hunter Health and Innovation Precinct by Resolution Response Pty. Ltd. ABN: 94 154 052 883, trading as ‘AviPro’.

The Report relates to the aviation aspects associated with the establishment and site design of the proposed hospital rooftop heliport to inform consideration a State Significant Development Application.

Contents

1. DESCRIPTION OF THE PROPOSAL

1.1. Overview

In June 2019, the NSW Government announced a significant expansion of the John Hunter and John Hunter Children's Hospitals with the $780 million John Hunter Health and Innovation Precinct (JHHIP) project.

The JHHIP will transform healthcare services for Newcastle, the greater Hunter region and northern NSW communities. The infrastructure will provide additional inpatient capacity to the John Hunter and John Hunter Children's Hospitals and create further opportunities for partnerships with industry and higher education providers.

The JHHIP will deliver an innovative and integrated precinct with industry-leading facilities working in collaboration with health, education and research partners to meet the current and future needs of the Greater Newcastle, Hunter New England and Northern NSW regions.

The John Hunter Health and Innovation Precinct Project is being planned and designed with ongoing communication and engagement with clinical staff, operational staff, the community and other key stakeholders with a strong focus on the following:

- Patient-centred care;
- Contemporary models of care;
- Future economic, health and innovation development opportunities; and
- Environmental sustainability.

1.2. Subject Site

The John Hunter Health Campus (JHHC) is located on Lookout Road, Lambton Heights, within the City of Newcastle Local Government Area (LGA), approximately 8km west of the Newcastle CBD. The hospital campus is located approximately 3.5km north of Kotara railway station.

The JHHC comprises the John Hunter Hospital (JHH), John Hunter Children's Hospital (JHCH), Royal Newcastle Centre (RNC), the Rankin Park Rehabilitation Unit and the Nexus Unit (Children & Adolescent Mental Health). JHHC is a Level 6 Principal Referral and tertiary Hospital, providing the clinical hub for medical, surgical, child and maternity services within the Hunter New England Local Health District (HNELHD) and across northern NSW through established referral networks. Other services at the campus include the Hunter Medical Research Institute (HMRI), Newcastle Private Hospital and the HNELHD Headquarters.

1.3. SSDA Proposal

Approval is being sought for a new Acute Services Building (ASB) and refurbishment of existing hospital facilities at JHH comprising:

- Construction and operation of a new seven-storey ASB (plus four semi-basement levels) to provide:
  - an expanded and enhanced Emergency Department;
  - expanded and enhanced medical imaging services;
  - expanded and enhanced intensive Adult, Paediatric and Neonatal care services;
  - expanded and enhanced Operating Theatres including Interventional Suites;
  - an expanded Clinical Sterilising Department;
  - Women's Services including Birthing, Day Assessment and Inpatient Units;
  - integrated flexible education and teaching spaces;
  - expanded support services;
  - associated retail spaces;
  - new rooftop helipads; and
  - new semi-basement car parking.

- Refurbishment of existing buildings to provide:
  - additional Inpatient Units;
  - expanded support services; and
  - a new Hospital entry canopy and works to the existing drop off.
- Link bridge to the Hunter Medical Research Institute (HMRI);
- Campus wayfinding and signage;
- Landscape works;
- Site preparation including bulk earthworks, tree removal, environmental clearing, cut and fill;
- Mines grouting remediation works;
- Construction of internal roads network and construction access roads and works to existing at-grade carparking;
- Connection to the future Newcastle Inner City Bypass; and
- Inground building services works and utility adjustments.

1.4. Construction of a Heliport

This SSDA contains a proposal for a two-spot rooftop heliport on the “western finger” of the JHH ASB. This will replace the existing Helicopter Landing Site and Parking Position on the rooftop of the JHHC main car park.

2. TERMS AND ABBREVIATIONS

2.1. Explanation of Terms

Aircraft. Refers to both aeroplanes (fixed wing) and helicopters (rotorcraft).

Approach/Departure Path (VFR). The flight track helicopters follow when landing at or departing from the FATO of an HLS. Updated standards to align with ICAO recommendations now has the VFR approach/departure path extending outwards from the edge of the FATO with an obstacle free gradient of 2.5º or 4.5% or 1:22 vertical to horizontal, measured from the edge of the forward edge of the FATO, to a height initially of 500 feet above the FATO at a distance of ~3,500 m. The flight path commences at the forward edge of the FATO at a width of 25 m., and increases in width uniformly to 150 m. at a distance of 3,500 m. The path may be curved left or right to avoid obstacles or to take advantage of a better approach or departure path. Changes in direction by day below 300 feet should be avoided and there should be no changes in direction below 500 feet at night.

Design Helicopter. The Agusta AW139 contracted to the NSW Ambulance. The type reflects the new generation Performance Class 1 capable helicopters used in HEMS and reflects the maximum weight and maximum contact load/minimum contact area.

Elevated Helicopter Landing Site. An HLS located on a roof top or some other elevated structure where the Ground Effect Area/Touchdown and Lift-off Area (TLOF) is at least 2.5 m. above ground level.

Final Approach. The reduction of height and airspeed to arrive over a predetermined point above the FATO of an HLS.

Final Approach and Takeoff Area (FATO). A defined area over which the final phase of the approach to a hover, or a landing is completed and from which the takeoff is initiated. For the purposes of these guidelines, the specification of 1.5 x Length Overall of the Design Helicopter is used and equates to 25 m. diameter. Area to be load bearing.

Ground Taxi. The surface movement of a wheeled helicopter under its own power with wheels touching the ground.

Hazard to Air Navigation. Any object having a substantial adverse effect upon the safe and efficient use of the navigable airspace by aircraft, upon the operation of air navigation facilities, or upon existing or planned airport/heliport capacity.

Helicopter Landing Site (HLS). One or more may also be known as a **Heliport**. The area of land, water or a structure used or intended to be used for the landing and takeoff of helicopters, together with appurtenant buildings and facilities.

Helicopter Landing Site Elevation. At a HLS without a precision approach, the HLS elevation is the highest point of the FATO expressed as the distance above mean sea level.

Helicopter Landing Site PC1 Survey Reference Point. A position at eye height (1.5 m.) above the forward edge of the FATO in the centre of the flight path, from which the PC1 survey at 2.5º (4.5%) is initiated.

Helicopter Landing Site Reference Point (HRP). The geographic position of the HLS expressed as the latitude and longitude at the centre of the FATO.

Hospital Helicopter Landing Site. HLS limited to serving helicopters engaged in air ambulance, or other hospital related functions.

Note:

*A designated HLS located at a hospital or medical facility is an emergency services HLS and **not** a medical emergency site.*

Heliport. Two or more co-existing helicopter landing sites (HLS). There are no implications for operating a heliport as opposed to an HLS, other than having a "Heliport Operations Manual" rather than an "HLS Operations Manual" which would address the various interactions and interoperability (aviation, clinical etc.) at the multiple sites.

Hover Taxi. The movement of a helicopter above the surface, generally at a wheel/skid height of approximately one metre. For facility design purposes, a skid-equipped helicopter is assumed to hover-taxi.

Length (Overall) (L). The distance from the tip of the main rotor tip plane path to the tip of the tail rotor tip plane path or the fin if further aft, of the Design Helicopter.

Landing and Lift Off Area (LLA). A load-bearing, nominally paved area, normally located in the centre of the TLOF, on which helicopters land and lift off. Minimum dimensions are based upon a 1 x metre clearance around the undercarriage contact points of the Design Helicopter.

Lift Off. To raise the helicopter into the air.

Movement. A landing or a lift off of a helicopter.

Object Identification Surface. The OIS are a set of imaginary surfaces associated with a heliport. They define the volume of airspace that should ideally be kept free from obstacles in order to minimise the danger to a helicopter during an entirely visual approach.

Obstacle Limitation Surface. The OLS are a set of imaginary surfaces associated with an aerodrome. They define the volume of airspace that should ideally be kept free from obstacles in order to minimise the danger to aircraft during an entirely visual approach.

Obstruction to Air Navigation. Any fixed or mobile object, including a parked helicopter, which impinges the approach/departure surface or the transitional surfaces.

Parking Pad. The paved centre portion of a parking position, normally adjacent to an HLS.

Performance Class 1 (PC1). Similar to Category A requirements. For a rotorcraft, means the class of rotorcraft operations where, in the event of failure of the critical power unit, performance is available to enable the rotorcraft to land within the rejected take-off distance available, or safely continue the flight to an appropriate landing area, depending on when the failure occurs. For an elevated HLS, the reject area is that area within the FATO (25 m. diameter) and therefore this area is to be load bearing. PC1 also requires CASA approved flight path surveys to/from the HLS.

Performance Class 2 (PC2). For a rotorcraft, means the class of rotorcraft operations where, in the event of failure of the critical power unit, performance is available to enable the rotorcraft to safety continue the flight, except when the failure occurs early during the take-off manoeuvres, in which case a forced landing may be required. PC2 also requires CASA approved flight path surveys to/from the HLS.

Performance Class 3 (PC3). For a rotorcraft, means the class of rotorcraft operations where, in the event of failure of the critical power unit at any time during the flight, a forced landing:

- in the case of multi-engine rotorcraft – may be required; or
- in the case of single-engine rotorcraft – will be required.

Pilot Activated Lighting (PAL). A PAL system utilises a hospital-based VHF radio and timed switching device, activated by the pilot via a radio transmission on a pre-set frequency, to turn on the associated HLS lighting.

Prior Permission Required (PPR) HLS. An HLS developed for exclusive use of the owner and persons authorized by the owner, i.e. a hospital-based emergency services HLS.

Note:

The HLS owner and the HEMS operator are to ensure that all pilots are thoroughly knowledgeable with the HLS (including such features as approach/departure path characteristics, preferred heading, facility limitations, lighting, obstacles in the area, size of the facility, etc.). This is addressed as part of the HLS commissioning process.

Rotor Downwash. The volume of air moved downward by the action of the rotating main rotor blades. When this air strikes the ground or some other surface, it causes a turbulent outflow of air from beneath the helicopter.

Safety Area. A defined area on an HLS surrounding the FATO intended to reduce the risk of damage to helicopters accidentally diverging from the FATO (0.3 x RD of the Design Helicopter). This area should be free of objects, other than those frangible mounted objects required for air navigation purposes. The Safety Area for the Design Helicopter extends 4 m. beyond the FATO circumference forming a 33m. diameter.

Safety Net. Surrounds the outer edge of a rooftop HLS. It is to be a minimum of 1.5 m. wide and have a load carrying capacity of not less than 122 kg/m^2. The outer edge is not to project above the HLS deck, and slope back and down to the deck edge at approximately 10 degrees, and not more than 20 degrees. Both the inside and outside edges of the safety net are to be secured to a solid structure.

Shielded Obstruction. A proposed or existing obstruction that does **not** need to be marked or lit due to its close proximity to another obstruction whose highest point is at the same or higher elevation.

Standard HLS. A place that may be used as an aerodrome for helicopter operations by day and night.

Take off. To accelerate and commence climb at the relevant climb speed.

Take off Position. A load bearing, generally paved area, normally located on the centreline and at the edge of the TLOF, from which the helicopter takes off. Typically, there are two such positions at the edge of the TLOF, one for each of two takeoff or arrival directions.

Touchdown and Lift-off Area (TLOF). A load bearing, generally paved area, normally centred in the FATO, on which the helicopter lands or takes off, and that provides ground effect for a helicopter rotor system. Size is based on 1 x main rotor diameter of Design Helicopter, and is 14 m. diameter.

Transitional Surfaces. Starts from the edges of the FATO parallel to the flight path centre line, and extends outwards (to the sides) at a slope of 2:1 (two-units horizontal in one-unit vertical or 26.6°) from the outer edges of approach/departure surface. The outer sides are 75 m. from the centreline, i.e. the outer edges are 150 m. wide. The transitional surfaces start at the forward edge of the FATO, overlaid over the approach/departure path (surfaces) and extend to the end of the approach/departure surface at 3,500 m.

Unshielded Obstruction. A proposed or existing obstruction that may need to be marked or lit since it is **not** in close proximity to another marked and lit obstruction whose highest point is at the same or higher elevation.

2.2. Applicable Abbreviations

Acronym	Meaning
AC	Advisory Circular (US FAA)
ACC	Aeromedical Control Centre (HQ Eveleigh). Responsible for control and tasking of HEMS
ACMA	Australian Communication and Media Authority
ADF	Australian Defence Force
ADS-B	Automated Dependent Surveillance - Broadcast
AsA	Airservices Australia
ASB	Acute Services Building
A-SMGCS	Advanced Surface Movement Guidance & Control System
ATC	Air Traffic Control
BVN	Bligh Voller Nield (Architects)
CAAP	Civil Aviation Advisory Publication (Australia)
CASA	Civil Aviation Safety Authority (Australia)
CAOs	Civil Aviation Orders (Australia)
CARs	Civil Aviation Regulations (1988) Australia
CASRs	Civil Aviation Safety Regulations (1998) Australia
CTAF	Common Traffic Advisory Frequency
DA	Development Application
DDO	Design and Development Overlay
DIFFS	Deck Integrated Fire Fighting System
DPIE	Department of Planning, Industry and Environment (NSW)
FAA	Federal Aviation Administration, USA
FATO	Final Approach and Take-Off Area (1.5 x helicopter length)
FARA	Final Approach Reference Area
FMS	Fixed Monitor System (foam fire-fighting system)
GPS	Global Positioning System
HEMS	Helicopter Emergency Medical Service
HF	High Frequency
HI	Health Infrastructure
HLS	Helicopter Landing Site
HLSRO	HLS Reporting Officer (Airservices Australia requirement)
HMRI	Hunter Medical Research Institute
HNELHD	Hunter/New England Local Health District
ICAO	International Civil Aviation Organisation
IFR	Instrument Flight Rules
IMC	Instrument Meteorological Conditions – requiring IFR flight
JHCH	John Hunter Children's Hospital
JHH	John Hunter Hospital
JHHC	John Hunter Health Campus

Acronym	Meaning
JHHIP	John Hunter Health and Innovation Precinct
L	Length (also referred to as Overall Length), in relation to a helicopter, the total distance between the main rotor and tail rotor tip plane paths when rotating
LDP	Landing Decision Point (Category A/Performance Class 1 operations)
LGA	Local Government Area
LLA	Landing and Lift Off Area. Solid surface meeting dynamic loading requirements, with undercarriage contact points + I metre in all directions
MoH	Ministry of Health NSW
MRI	Magnetic Resonance Imagers
MTOW	Maximum Take Off Weight
NCC	Newcastle City Council
NOTAM	Notice to Airmen. Issued by Airservices Australia in relation to airspace and navigation warnings
NVG	Night Vision Goggle(s)
OIS	Object Identification Surface(s) (Heliport/HLS)
OLS	Obstacle Limitation Surface(s) (Aerodrome)
PC1	Performance Class 1
PC2	Performance Class 2
PC3	Performance Class 3
PRM	Precision Runway Monitoring
RAAF	Royal Australian Air Force
RD	Main Rotor Diameter
RTCC	Radar Terrain Clearance Chart
SARPS	Standards and Recommended Practices developed by ICAO and promulgated in the Annexes to the Convention of International Civil Aviation
SEARs	Secretary's Environmental Assessment Requirements
SSD	State Significant Development
SSDA	State Significant Development Application
TDP	Takeoff Decision Point (Category A/Performance Class 1 operations)
TLOF	Touch Down and Lift Off Area. Load bearing min. 1 x main rotor diameter.
TSA	TSA Management Australia
UHF	Ultra High Frequency
VFR	Visual Flight Rules
VHF	Very High Frequency radio
VMC	Visual Meteorological Conditions - allowing flight under VFR
V_{TOSS}	Take off Safety Speed
WAM	Wide Area Multilateration

3. SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS

3.1. Aviation and Airspace Requirements (Aviation Impact Statement)

This Section provides a list of SEARs requirements specific to the JHHIP rooftop heliport.

Item	Requirement or Key aviation airspace issue	Relevant Report Section
Aviation		
Provide a report prepared by a suitably qualified Aviation expert:		
1.	identifying and assessing the potential impacts of the development on the aviation operations of any affected flight paths of an existing on shore Helicopter Landing Site (HLS) in accordance with the relevant sections of the National Airports Safeguarding Framework (NASF).	See Sections 5.8 and 5.9; and Figure 7.
2.	identify aviation operation and flight paths for any proposed onshore Helicopter Landing Site (HLS) in accordance with the relevant sections of the National Airports Safeguarding Framework (NASF).	See Sections 5.1 to 5.7; and Figures 1, 4, 5 and 6.
	Relevant Policies and Guidelines: National Airports Safeguarding Framework and associated guidelines	

Table 1: Secretary's Environmental Assessment Requirements - Aviation

4. SSD GENERAL REQUIREMENTS – AVIATION REGULATION

4.1. Regulatory Review

The JHHIP development is located outside the Newcastle/Williamtown Aerodrome Control Zone and Control Areas (CTR/CTA). It is therefore not considered to be within "prescribed airspace" as defined in the Airports (Protection of Airspace) Regulations 1996. Further, there is no specific requirement in the Newcastle Local Environment Plan 2012 to consider airspace protection. It is the routine practice of the NSW Department of Planning, Industry and Environment to obtain advice on the development from Airservices Australia (AsA), the Civil Aviation Safety Authority (CASA), the Australian Defence Force (ADF)/Royal Australian Air Force (RAAF) and Newcastle Airport.

It is assessed that the positioning and proposed development of a heliport for the JHHIP will not incur any negative air traffic or protected airspace factors or considerations (notwithstanding approval must still be sought). There are no constraints imposed by prescribed airspace associated with airports or airport instrument approach and standard departure profiles. As a consequence, the development of the heliport, and in particular vertical obstructions such as cranes, can be addressed from a "safety to flight" perspective for helicopters operating near the new JHH ASB and aircraft transiting in the vicinity.

The proposed new JHH ASB heliport is sufficiently distant from Newcastle/Williamtown aerodrome such that arriving and departing aircraft will not realise any traffic confliction with helicopters operating to and from it.

4.2. Standards applied to HLS development for NSW Health

The NSW Ministry of Health (MoH) policy document GL2020_014 Guidelines for NSW Hospital HLS of 1 July 2020 (the Guidelines) are the primary HLS/heliport design source material used in this report. The following documents provide excellent advisory material, guidelines and best practice standards and led to the development of the Guidelines:

- ICAO Annex 14, Vol II, Heliports;
- US FAA Advisory Circular AC 150/5390-2C, Heliport Design, (covers both operational and design criteria, particularly for hospital-based HLS' in Chapter 4, Hospital Heliports);
- Australian Civil Aviation Safety Authority (CASA) Civil Aviation Advisory Publication (CAAP) 92-2 (2) Guidelines for the Establishment and Operation of Onshore Helicopter Landing Sites. (covers essentially operational specifications only and is produced around European commercial helicopter airport-based operations);
- National Airports Safeguarding Framework Guideline H – Protecting Strategically Important Helicopter Landing Sites.

5. SSD GENERAL REQUIREMENTS – HLS IMPACTS AND OPERATIONS

5.1. HLS Approach and Departure Path Considerations

Primary considerations in selection of HLS approach and departure paths include:

- Direction of prevailing winds,
- Availability of emergency landing areas,
- Location of vertical structures and obstacles/hazards,
- Airspace restrictions and limitations,
- Avoidance of areas sensitive to noise and vibration, and
- Avoidance of ecologically and environmentally sensitive areas.

Important criteria for approach/departure paths is that there be a minimum of two that are at least 150° apart.

5.2. Wind

The Bureau of Meteorology has a weather station approximately 20 km North-East of the JHHIP site at Newcastle/Williamtown aerodrome. Annualised average wind readings taken since 1942 show that average annual predominant winds in the area are from the West/North-West in the mornings and South-East in the afternoons. This data is the primary driver for approach selection based upon wind. Refer to Figure 1 below. This information is relevant during planning to account for any obstructions along the paths.

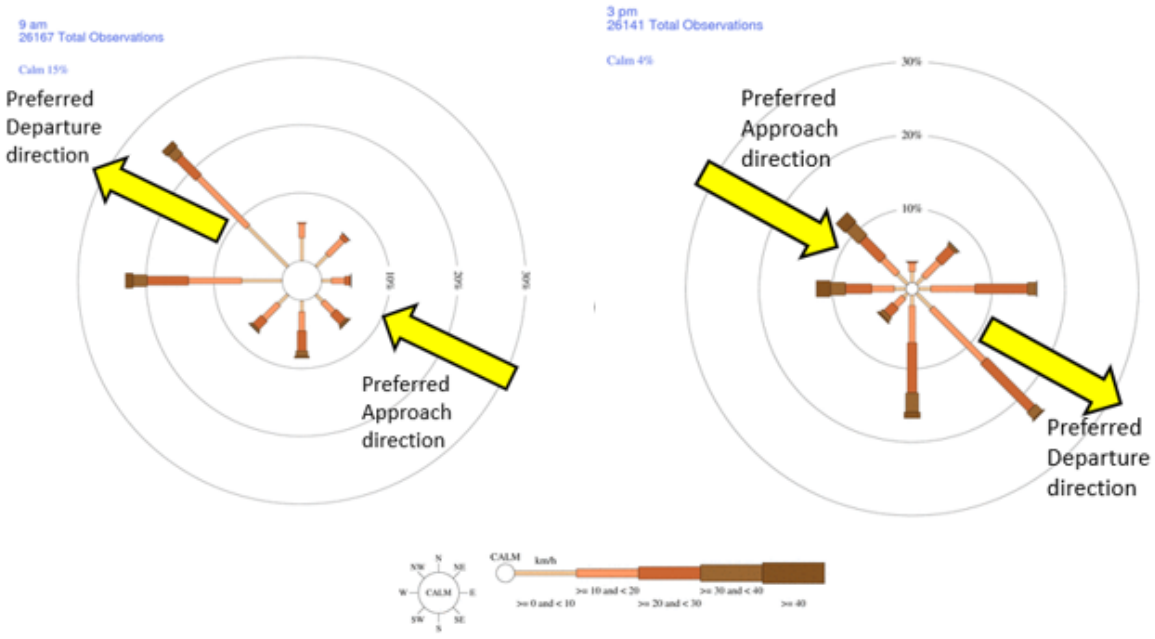

Figure 1: Newcastle/Williamtown Wind Rose – Annual Average

5.3. Airspace

The airspace over the site has been reviewed for compliance with obstacle limitation surfaces (OLS) and Procedures for Air Navigation Services – Aircraft Operations (PANS OPS).

Relevant authorities are almost certain to advise, in relation to the development, that site structures and cranes WILL NOT penetrate the OLS or the PANS OPS lower limit for Newcastle/Williamtown Airport.

The general airspace arrangement over Newcastle is depicted in Figure 2 below.

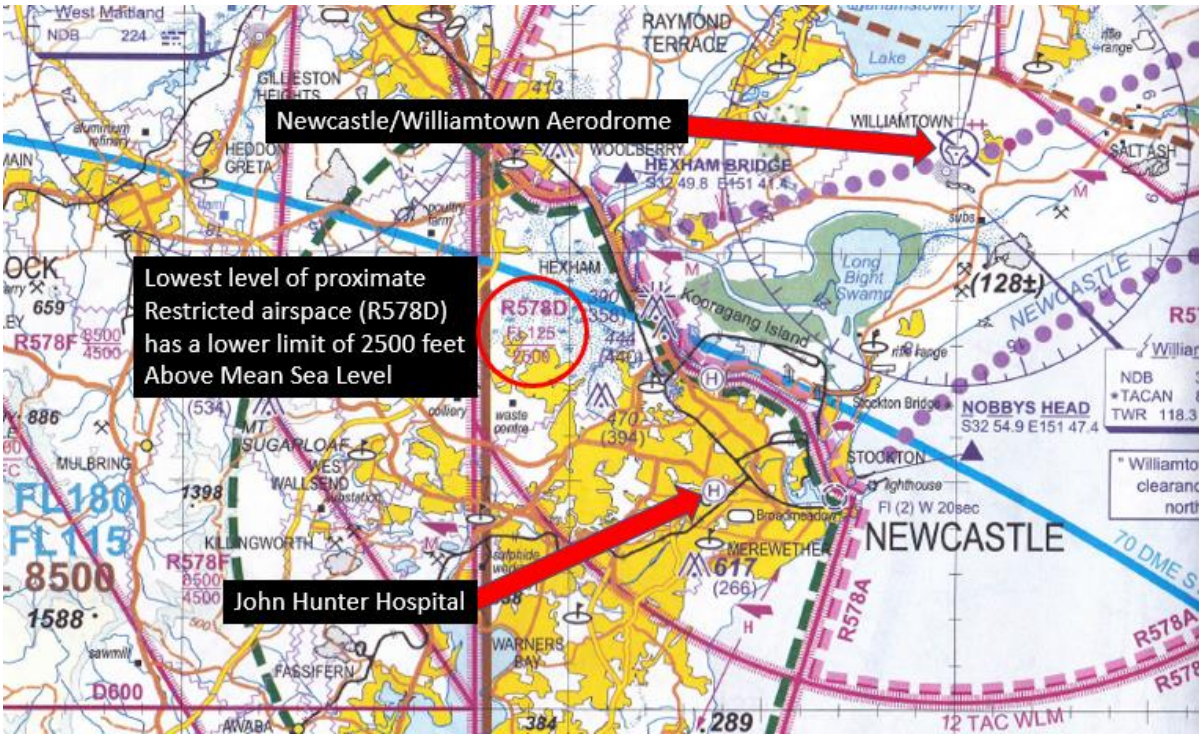

Figure 2: Airspace layout for Newcastle/Williamtown aerodrome

Due to the predominantly south-east/north-west orientation of the sole Newcastle/ Williamtown runway, the Obstacle Limitation Surfaces (OLS) associated with the aerodrome do not extend over the Newcastle metropolis. See Figure 3 below. This overlay diagram is as provided by the RAAF Base Williamtown Base Airfield Engineering Officer.

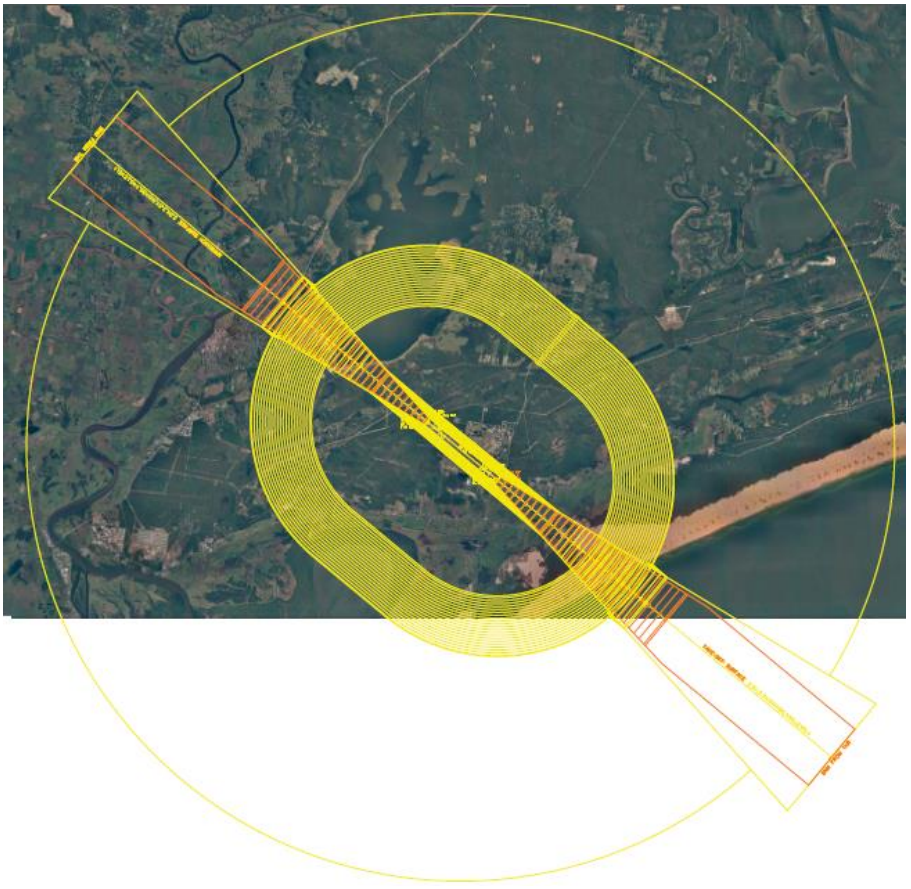

Figure 3: Obstacle Limitation Surface overlay for Newcastle/Williamtown aerodrome

Since the OLS does not extend over Newcastle, it is instructive to review the airspace arrangements over the area of the development. Figure 2 demonstrates that the lowest level of any controlled or restricted airspace over the John Hunter Hospital is at 2500 feet. There are no pertinent airspace controls or limitations in the Newcastle Local Environment Plan 2012. This report assesses that CASA, AsA, the ADF and Newcastle City Council will advise that there are no/minimal relevant impacts from this development.

From the air traffic perspective, AsA or in this case, the ADF are interested in the impact of any high building on line-of-sight between ATC communications, navigation and surveillance (radar) systems. Sometimes, new buildings interrupt the line-of-sight between radio and radar repeaters and retransmission sites; and the aerodrome (RAAF Williamtown/Newcastle). If there is doubt that airspace issues might impede development planning (this often happens in Sydney CBD hospital HLS developments e.g. Randwick and St George), early consultation with airspace authorities is recommended. In the case of JHHIP no early engagement was undertaken with AsA as no airspace issues were foreseen.

5.4. Impacts on Sensitive Receivers

The approach and departure paths were planned with due cognisance of the New Lambton Heights and Blackbutt Reserve areas South-East and South of the site. See Figure 4 below. There are no known areas of sensitive environmental or ecological concern in the preferred approach and departure zone.

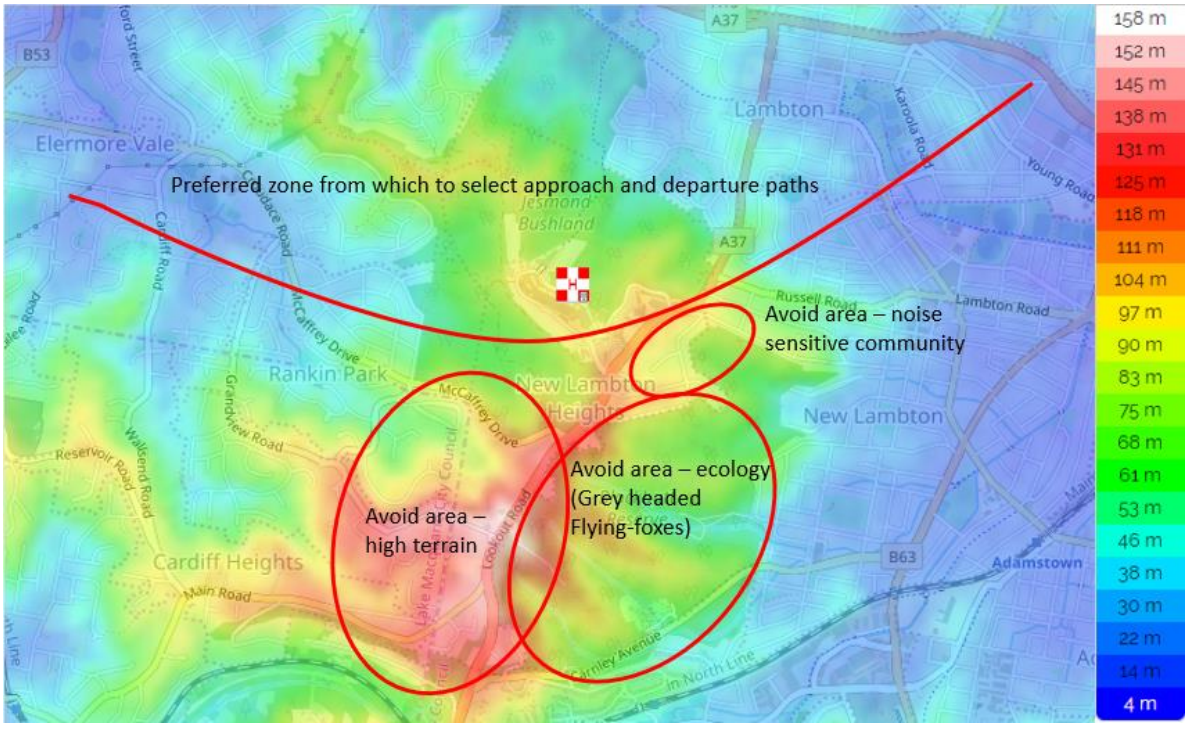

Figure 4: JHHIP Precinct in relation to surrounding “avoid areas”

5.5. HLS Locations and Preferred Approach and Departure Path Directions

This location of the heliport for the JHHIP evolved as a result of the collaboration between Design Team members: the architectural team, the aviation consultant and clinical advisers, during the concept design development. The resulting Design Team guidance was for any HLS; HLS and Parking Position; or heliport to be placed on the “western finger”. This is the best location for the heliport. The rooftop space is sufficient.

Figure 5 below illustrates the planned approach and departure paths to the JHHIP heliport (large scale). This image attempts to portray that it is the low-speed early part of the departure and the low-speed final approach that require stability in direction (see yellow and blue arrows). While, or once, an aircraft has safe single-engine flying speed the pilot is at liberty to manoeuvre and turn to suit the prevailing wind conditions and comply with any relevant "fly neighbourly" procedures or to avoid known areas sensitive to aircraft noise and vibration. Increasing rates of climb and descent (increasing flight path steepness) can be utilised to attempt to insulate sensitive areas from noise and vibration. In reality, no two approaches or departures will ever be alike. The inherent flexibility of a helicopter allows it to accommodate various flight profile changes in response to changing circumstances and requirements.

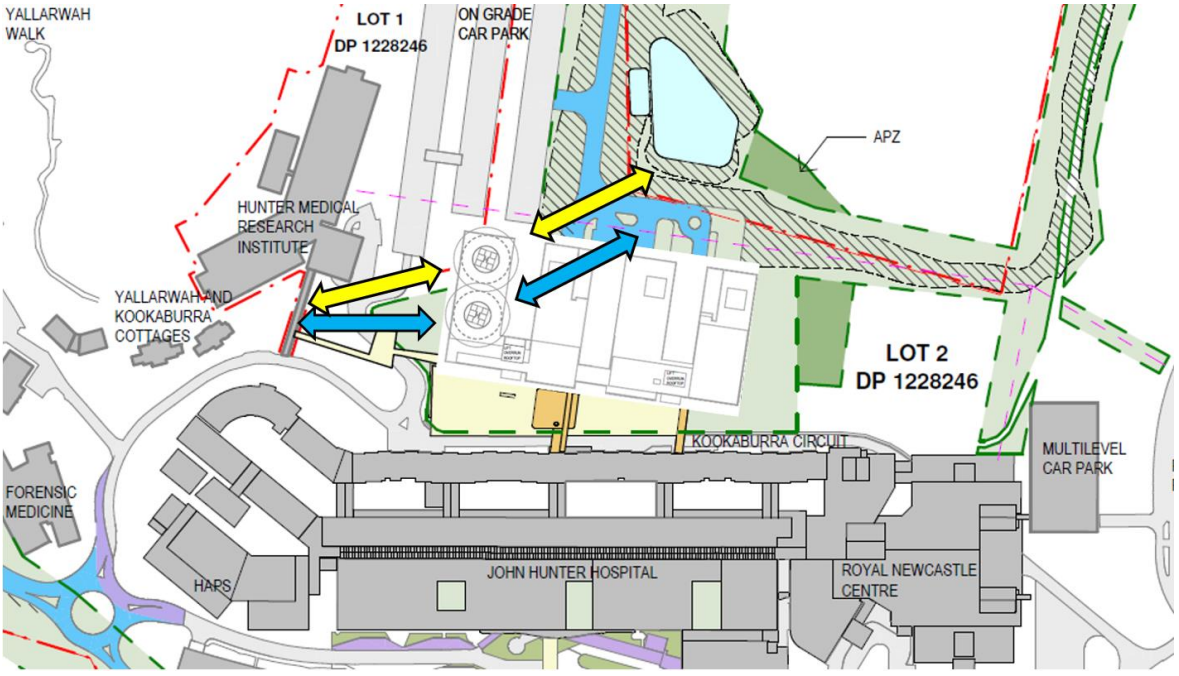

Figure 5: Approach and Departure Path Illustration at JHHIP Heliport (large scale)

5.6. Heliport Air Traffic Management

Aircraft arriving and departing from the JHHIP heliport will not require an ATC clearance and will not interfere with any instrument approach procedures for Newcastle/Williamtown aerodrome. ATC will not be required to separate Helicopter Emergency Medical Service (HEMS) helicopters from civil, commercial or military air traffic. Because the lift overrun is positioned to the South-Eastern corner of the western wing, the approach and departure paths are forced to be oriented West to North–East. Taking into account prevailing winds and building layout, this arrangement is the best solution for a heliport if the two pairs of approach and departure paths are to be kept in the required range of 150^0-180^0 apart.

5.7. Effects of Helicopter Operations on Buildings and Infrastructure

Figure 6 below illustrates the planned approach and departure paths to the JHHIP heliport (small scale). The approach and departure paths minimise overflight of buildings within the JHHC to the maximum extent possible. There will be minimal overflight of the new ASB.

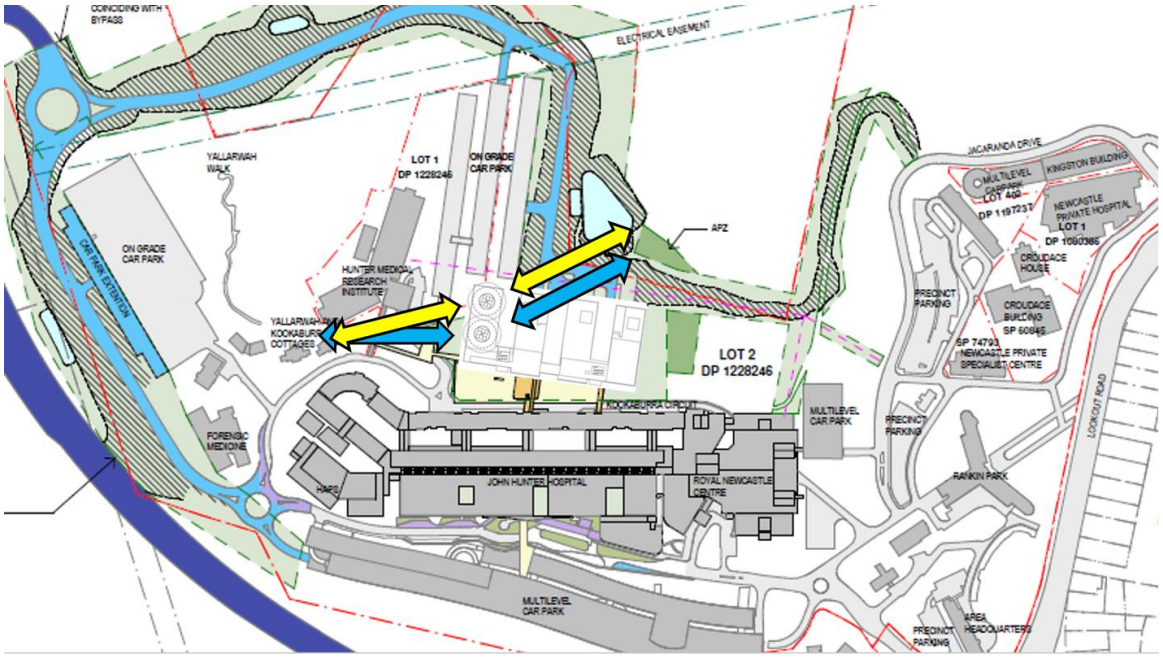

Figure 6: Approach and Departure Path Illustration at JHHIP Heliport (small scale)

5.8. Impact on Existing HLS

Issues affecting current operations on the existing HLS during ASB construction were considered during the design process. Construction of the new building will not impact operations from the existing HLS. A worst-case estimation shows that tower crane position will not be an impediment to existing HLS operations. See Figure 7 below. Standard obstacle/obstruction lighting to the crane(s) will provide an adequate additional level of safety and assure ongoing, existing HLS operations during construction.

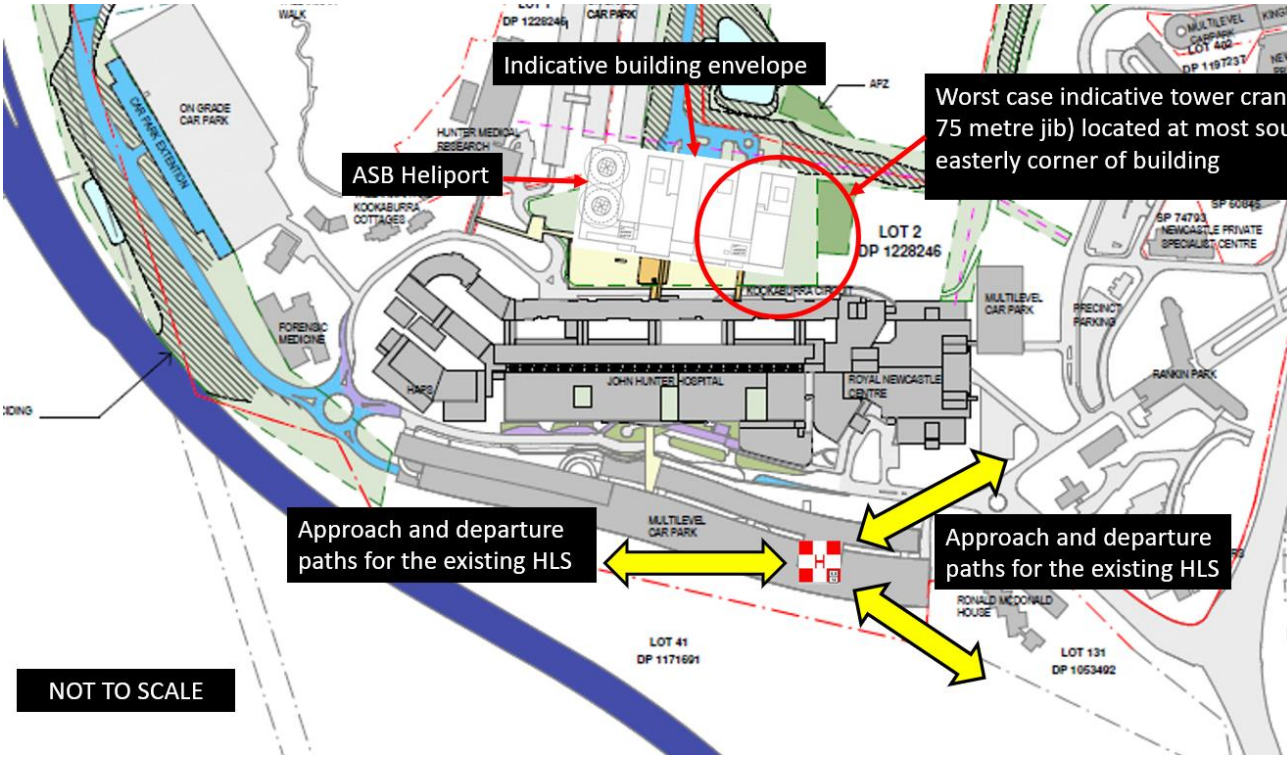

Figure 7: Effect of construction on existing HLS operations

5.9. Concurrent Helicopter Operations from Two HLS/Heliport

Should it be necessary to operate from the existing HLS and the new heliport concurrently, this will not be a problem. The respective approach and departure paths are compatible. Pilots will separate themselves by radio from one another in the same way as they do at uncontrolled aerodromes and at emergency retrieval sites in the field where more than one helicopter attends.

5.10. Transition from the Existing HLS to the New Heliport

Transition from operating on existing HLS to the heliport is a relatively simple matter. Advisory materials will be prepared for NSW Ambulance and provided to HEMS operators. Relevant databases will be updated/cancelled in a coordinated way and an HLS Notification will be used to execute the change. There will be detailed liaison with HEMS operators as part of the process.

5.11. Obstructions and VFR Approach/Departure Paths and Transitional Surfaces

Two pairs of proposed VFR Approach and Departure paths run west-north-west and east-north-east. The selection of these paths aims to achieve an obstacle free gradient of 2.5º (4.5%, 1:22 vertical to horizontal), measured from a point 1.5m above the forward edge of a 25m diameter FATO, to a height of 500 feet above the FATO at a distance of ~3,500m.

The approach and departure paths commence at 25m width at the FATO forward edge and splay out to 150m width at ~3,500m distance. Overlaid on the VFR Approach and Departure paths, are the transitional surfaces. They commence 75m either side of the centre of the FATO and extend effectively as a rectangle 150 x 3,500m with the centre of the path longitudinally through the middle.

Subject to formal survey, it is apparent that there are no obstructions along the two pairs of proposed VFR Approach and Departure paths when judged from the estimated Performance Class 1 (PC1) survey datum points for each HLS.

5.12. HLS/Heliport Object Identification Surfaces (OIS)

Each HLS will have its own OIS identified. The OIS situation for each of the chosen approach and departure paths is as good as can be developed for such a site. The positioning of both HLS' on the "western finger" creates adequate distance between the nearer HLS and the lift overrun. The lift overrun, the accompanying windsock, the HLS/heliport identification beacon and any aviation-related antennae will always be potential obstructions that need to be marked and/or lit. This is the case for any rooftop HLS/heliport with a lift overrun.

6. SSD KEY ISSUES

6.1. Key Issue: Statutory and Strategic Context

Permissibility. Permissibility from an aviation perspective needs to be confirmed by the ADF/RAAF and AsA. Application is made on behalf of Health Infrastructure by the Social Infrastructure team of the DPIE as part of the SSD process. No impediments to approval are anticipated.

Development Standards. The standards applying to this heliport are NSW Health Policy; represent best practice; and exceed any standards required by current Commonwealth legislation. Development Standards from an aviation perspective do not apply.

6.2. Key Issue: Policies

NSW Health Policy. The heliport will meet the compliance requirements of NSW Health GL2020_014 Guidelines for NSW Hospital HLS. Whilst the Guidelines do not restrict flight over adjacent buildings, it is common practice in approach and departure path design to avoid such situations. It has not been possible on this occasion to completely avoid overflight of adjacent parts of the ASB (this has been minimised to the maximum extent possible) however it has been possible to avoid impacting any rooftop services e.g. cooling towers and vents, with rotor downwash.

6.3. Key Issue: Environmental Amenity

Acoustic Impacts. Acoustic impacts from helicopter flight operations to and from the proposed rooftop heliport are considered in the Noise and Vibration Impact Assessment.

Ecological Impacts. There are no known areas of environmental or ecological significance that require specific protection from the impacts of helicopter operations to and from the new JHH ASB, noting that the existing HLS is to the South of the JHH and the HEMS operators will be well aware of any noise or vibration sensitive areas. The same considerations and operational procedures for noise abatement will most likely apply for the new JHH ASB heliport. This will be confirmed with HEMS operators as part of the JHH ASB heliport commissioning process.

6.4. Key Issue: Contamination

The main contamination from an HLS/heliport is that of fuel product spillage. In the case of the JHHIP ASB heliport, this risk is significantly mitigated by not conducting refuelling operations or maintenance on the rooftop.

If there was a fuel leak of any sort from the helicopter, the installation of the fuel/water separator will mitigate the contamination risk.

6.5. Key Issue: Drainage

The heliport will have drainage to ensure standing water is drained from the deck. A slope of up to 2° will ensure water does not pool and helps maintain the integrity of the anti-slip surface.

6.6. Key Issue: Management of Cranage during construction

As there is an existing HLS in immediate proximity to the JHHIP development, it is important that construction cranes are lit, even though they do not infringe the OLS associated with Newcastle/Williamtown aerodrome. The requirements of the National Airports Safeguarding Framework Guideline H – Protecting Strategically Important Helicopter Landing Sites are applicable in this regard. This has been addressed in the Provisional Construction Management Plan.

7. CONSULTATION, CONCLUSION AND SUMMARY

7.1. Consultation

AviPro has consulted with the following organisations with no reportable feedback:

- Royal Australian Air Force Base Williamtown Base Airfield Engineering Officer,
- Westpac Rescue Helicopters (contracted helicopter operator),
- Toll Helicopters (contracted helicopter operator), and
- NRMA CareFlight (contracted helicopter operator).

7.2. Future Consultation

AviPro will further engagement with the following organisations as appropriate:

- Royal Australian Air Force Base Williamtown,
- Health Infrastructure (Program Management),
- NSW Ambulance Service (the helicopter retrieval capability Director),
- Toll Helicopters (contracted helicopter operator),
- NRMA CareFlight (contracted helicopter operator), and
- Westpac Rescue Helicopters (contracted helicopter operator).

AviPro may also engage with the following additional organisations:

- AsA – if issues arise from the AsA DA submitted by DPIE,
- CASA - if regulatory change occurs that materially impacts the program.

7.3. Conclusion

The rooftop layout, as currently designed, is most suitable to host a heliport. Positioning of the lift overrun is the primary driver of the approach and departure paths, which in turn fit very well with historical prevailing winds. The heliport will result in a minimal amount of overflight of populated areas for such a facility in a large provincial city with surrounding residential areas. The JHHIP project (both building and cranes) will be found to have no impact on the Newcastle/Williamtown Aerodrome OLS and will also be found to have no impact on any aviation communications, navigation and surveillance infrastructure. Aviation safety will not be compromised by the JHHIP ASB project.

7.4. Summary

From an SSD perspective, in summary:

- Design of the new JHH ASB heliport approach and departure paths conforms well with the most likely wind directions, and provide pilots with the best forced landing areas available in the event of emergencies requiring immediate landing on final approach to land or immediately after take-off; whilst concurrently avoiding built-up and sensitive areas to the maximum extent possible.
- The new JHH ASB building and associated cranes used for construction will not infringe prescribed (Newcastle/Williamtown Aerodrome) airspace OLS; will not impact on any (Newcastle/Williamtown Aerodrome) aviation communications, navigation and surveillance infrastructure; and will not impinge upon HEMS helicopter operations to and from the existing JHHC HLS.
- The heliport will be compliant with NSW Health GL2020_014 Guidelines for NSW Hospital HLS of 1 July 2020.