



Health
South Western Sydney
Local Health District

SWD20/5276

Mr Boris Santana
Principal Planner
Liverpool City Council

Email: SantanaB@liverpool.nsw.gov.au

Dear Mr Santana

Thank you for the opportunity to provide comment on the draft Liverpool City Council Development Application DA-926/2018.

Please find attached a report in response to the above application highlighting the impact the DA has on the Helicopter Landing Sites (HLS).

For further information or questions please contact Mr David Ryan, Director Capital Works and Infrastructure on 8738 6380 or SWSLHD-CapitalWorksInfrastructure@health.nsw.gov.au

Regards

Sonia Marshall
Acting Chief Executive

Date: 16/1/2020

South Western Sydney Local Health District acknowledges the traditional owners of the land.

Mr David Ryan
Director, Capital Works and Infrastructure
South Western Sydney Local Health District
Locked Bag 7103, LIVERPOOL BC 1871

DA 9262018 – ELIZABETH DRIVE LIVERPOOL FLIGHT PATH SAFETY ASSESSMENT

References:

- A. Liverpool City Council DA/926/2018 and Imagery
- B. Department of Infrastructure, Regional Development and Cities, National Airports Safeguarding Framework Guideline H: Protecting Strategically Important Helicopter Landing Sites dated May 2018¹
- C. NSW Health document GL2018_010 Guidelines for Hospital HLS in New South Wales

Background

The Liverpool Hospital Precinct hosts two active helicopter landing sites (HLS). One is utilised 24/7 and the other, after reinforcement, will be an alternative site when multiple helicopters arrive at the hospital. These HLS are destinations for critically ill persons who are transported into the precinct by NSW Ambulance helicopters and strategically, one of the busiest HLS in Western Sydney.

The precinct is under pressure from surrounding construction and associated cranes that present considerable obstructions to flight paths and therefore elevate risk for an activity that is life saving.

The Main HLS at Liverpool has a predominantly east/west approach/departure path axis. Recent developments to the west of the hospital had threatened to compromise the flight paths and as a consequence, adjustments to the western flight path were necessary.

Planned Westfield Development

The Westfield development is to the west of the Liverpool HLS and directly in the western approach path. Image 1 illustrates the western flight path direction and the proposed Westfield development.



Image 1: Liverpool Hospital western flight path direction and the Westfield development.

¹ https://infrastructure.gov.au/aviation/environmental/airport_safeguarding/nasf/nasf_principles_guidelines.aspx

It can be seen that without an adjustment to the north, the development and associated cranes, would impact directly on this approach path. At a planned height of RL62.30, the development is approximately 20m taller than the Liverpool HLS (RL 42.71).

A similar development was assessed at 26 Elizabeth Street which resulted in the consideration to move the flight path slightly north of west. Image 2 was taken during a recent site visit and illustrates the revised 'western' flight path. The yellow arrow represents the current marked western flight path and the indicative position of the Westfield development. The green arrow represents the revised western direction.



Image 2: Western flight path adjustment

Given the point that Liverpool Hospital is currently refurbishing the HLS, an opportunity exists to 'future proof' the flight paths. Changing the western flight path from 270 degrees to 300 degrees magnetic largely removes the risk posed by the Westfield development once completed. Cranes however, will pose a significant impact on the revised flight path.



Image 3: Revised Western flight path

A similar assessment will need to be completed on the secondary HLS at Liverpool and it is envisaged a realignment of that western approach path further south may be needed.

HLS Remarking and Lights

The Main HLS western approach/departure arrow will need to be remarked. In addition, prior to the HLS refurbishment, interim flight path direction lights (Image 3) will need to be installed.



Image 3: Interim lighting

The lights and new marking will need to reflect the realigned western flight path and this will meet the HLS compliance requirements.

Crane Illumination

Crane illumination near hospital HLS has been a significant issue for a period of time. Typically crane operators only want to install the lights recommended in the Civil Aviation Safety Authority (CASA) MOS Part 139. For some time now, we have been recommending (and where necessary insisting) that, in addition to the MOS 139 requirements, the crane jib and tower is fitted with white light (LED fluro) that illuminates the jib structure and provides exact positional awareness to a pilot conducting an aided or unaided approach/departure to a HLS.

The illumination of the jib structure (and the tower itself where necessary) has proved a necessary and successful safety mitigation in a number of locations including Westmead, Gosford, Lismore, RPA Camperdown, St George and now in Shoalhaven. The lighting requirements that the developer or the crane companies need to install are:

As a minimum for all tower cranes:

- Top of crane A frame or cabin: medium intensity red obstruction light (night) and white by day if applicable
- Both ends of Jib: medium intensity red obstruction light (night) and white by day if applicable
- Along Jib: line of white LED fluro on a PE cell along the full length of the jib
- Tower section: stairway lights or spot lights attached to the top of the tower pointing down and onto the tower (not up into pilot eyes)

As a minimum for all luffing cranes:

- Top of crane A frame or cabin: medium intensity red obstruction light (night) and white by day if applicable
- End of Jib: medium intensity red obstruction light (night) and white by day if applicable
- Along Jib: line of white LED fluro on a PE cell along the full length of the jib

- Tower section: stairway lights or spot lights attached to the top of the tower pointing down and onto the tower (not up into pilot eyes)

The LED jib Fluro details are:

- Lights used: LED WEATHER PROOF EMERGENCY FLUROS (minimum 90 min battery back-up)
- Lights are controlled via a PE Cell

Please note, LED 'strip' lighting does NOT work and is not suitable as it cannot be seen through NVG.

Some examples of illuminated tower and luffing cranes are at Appendix A.

Obstruction Lights – Completed Building

The finished buildings will be covered by a red medium intensity obstruction lights visible from all directions. This will provide obstacle awareness (for the buildings) along this approach/departure path in most weather and lighting conditions.

Conclusion and Recommendations

The proposed development at Westfield impacts the current western flight path. A slight realignment of the western flight path further north is feasible and has been considered together with the NSW Ambulance helicopter contractor. This will provide a compliant flight path assuming no other developments are approved that compromise his realigned western flight path.

Cranes associated with the construction however, will provide a clear obstruction and will need to be appropriately painted (day visibility) and illuminated (night visibility).

It is therefore recommended:

- a. The western flight path is realigned to the 300 degrees direction,
- b. The HLS be remarked to the 300 degrees direction.
- c. That interim approach path lighting be installed in the 300 degrees direction.
- d. That SWSLHD seek from City of Liverpool Council the following caveats to the DA approval that the Developer consult with Liverpool Hospital on:
 - i. The positioning of the cranes,
 - ii. The illumination of the cranes at night, and
 - iii. The colour of the cranes (day visibility).



Steve Graham

Managing Director

AviPro

Aviation Management and Safety Advisers

Accredited Aviation Safety & Compliance Auditors

M: 0401 520048

s.graham@avipro.com.au

APPENDIX A: EXAMPLES OF ILLUMINATED CRANES



Above: Tower crane at Shoalhaven Hospital.



Above: Luffing crane at Westmead Hospital



Offsite cranes at a development adjacent to Westmead southern and southwestern flight paths.