

31 August, 2012
Our File Ref: S12001AL101Rev0.docx
Contact: Michael Ward

Associate Director
Johnstaff Projects
Level 8, 16 O'Connell Street
SYDNEY NSW 2000

Attention: Brody Atterby

**RE: BEGA VALLEY HEALTH REDEVELOPMENT HLS DESIGN
DOCUMENTATION REVIEW**

Following our original letter of advice dated 5 March 2012 (Ref: S12001AL001Rev1), as requested REHBEIN Airport Consulting has conducted a review of master plan concept designs provided by email on 12 July 2012 for the proposed new Bega Valley Hospital and HLS with regards to compliance with the relevant aviation guidelines and standards.

The review is based on the following documentation provided by BVN Architecture (BVN) and attached for reference:

- Drawing SK_101 – Master Plan, dated 25 June 2012;
- Drawing SK_101 – Master Plan with Future Expansion, dated 8 June 2012;
- Drawing SK_102 – Aerial Views; and
- Drawing SK_103 – Section, dated 22 June 2012.

Similar to our letter dated 5 March 2012 this review has been conducted with reference to the NSW Health draft Policy Directive – *Guidelines for Hospital Helicopter Landing Sites in NSW* which is set to supersede the existing NSW Health Policy Directive PD2005_128 as the primary relevant guidance material when finalised.

1. PHYSICAL CHARACTERISTICS

The diameter of the FATO proposed by BVN is 25m with a safety area of 4m around the FATO for a total diameter of 33m. These dimensions are in accordance with the draft NSW guidelines.

2. FLIGHT PATHS

The draft NSW guidelines and ICAO recommend that a surface level HLS has at least two flight paths separated by not less than 150 degrees and that flight paths should be oriented such that the usability factor is 95% for the helicopters the HLS is intended to serve.

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The proposed preferred flight paths are oriented 132° and 342° and are separated by a 150° obstacle free sector that can be used for arrivals and departures in high winds.

Wind analysis suggests that the preferred flight paths would provide approximately 75% usability and the entire 150° obstacle free sector should provide close to 100% usability.

The wind data was obtained from the Bureau of Meteorology records for Bega NSW (WS 069002) and Bega AWS NSW (WS 069139) for the combined period 1 January 1965 to 30 April 2006. The draft NSW guideline design helicopter, the Augusta Westland AW139, has a 10 knot crosswind and 0 knot tailwind limit when operating in accordance with PC1 criteria.

The proposed flight paths are in accordance with the draft NSW guidelines.

3. OBSTACLE RESTRICTIONS

The concept design documentation shows no potential obstacles under the preferred flight paths and associated Obstacle Limitation Surfaces (OLS) or within the 150° obstacle free sector.

The eastern wings of the proposed main hospital building are within the Obstacle Identification Surface (OIS) and may need to be lit for night helicopter operations. The requirements for obstacle lighting on the hospital building will need to be confirmed through consultation with the helicopter operators.

It should be noted that geothermal bores are indicated to the south east of the proposed HLS. Depending on their height above ground, objects in the area could potentially infringe the OLS. Proposals for this area should consider flight path protections requirements.

Additionally, the concept design documentation is limited to the proposed hospital site only and the impact of obstacles beyond the proposed hospital boundary has not been considered as part of this review. However, preliminary assessment based on Google Earth imagery suggests there are no current obstacles beyond the hospital boundary that are of concern.

4. CONCLUSIONS

The findings of our review show the concept design is in accordance with the draft NSW guidelines set to supersede the current NSW Health Policy Directive.

However, as the design documentation is concept only detailed HLS elements such as marking and lighting have not been provided or reviewed.

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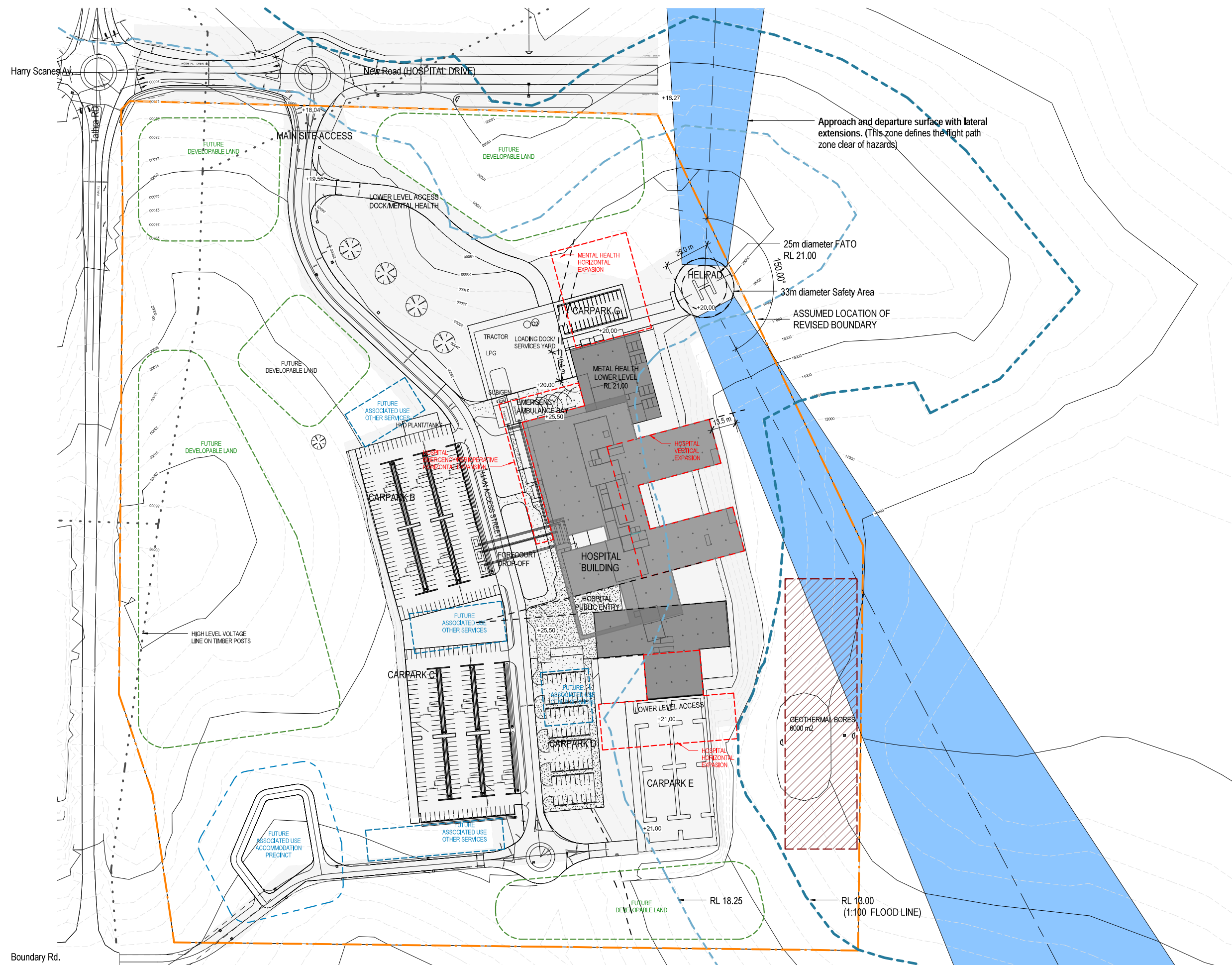
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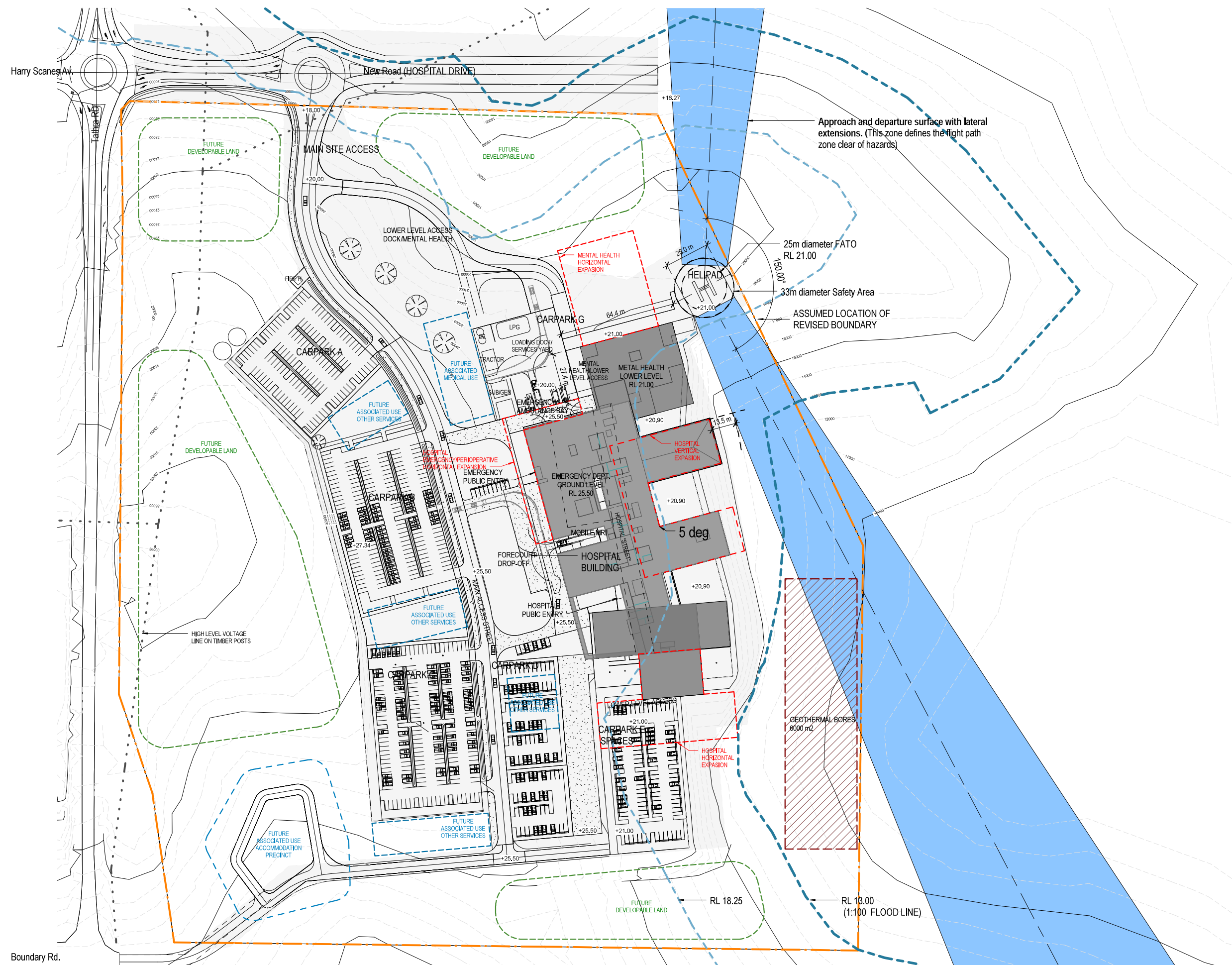
Regards,

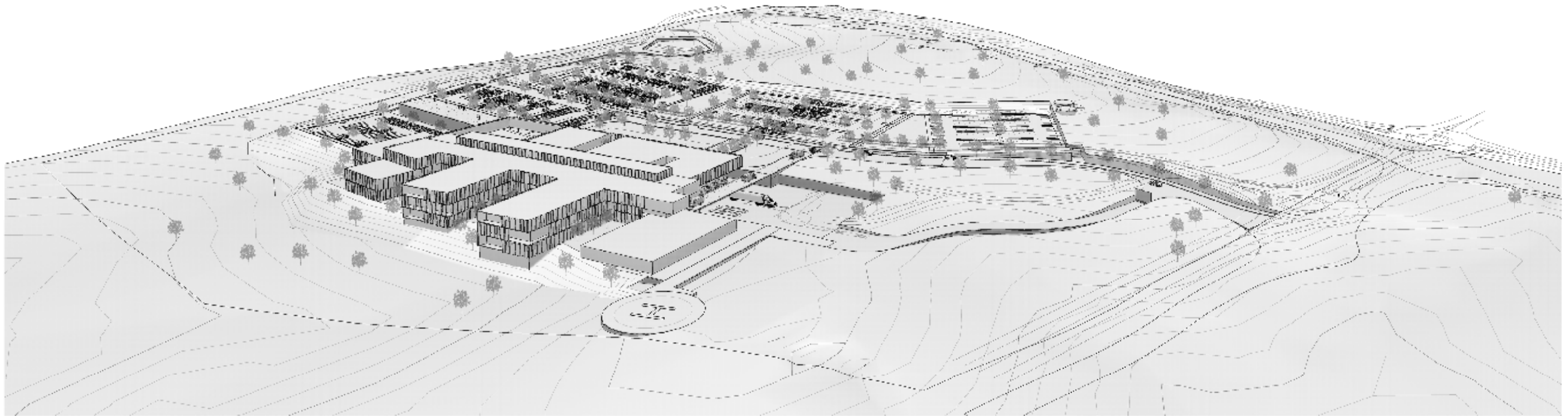
Yours faithfully
For and on behalf of
LAMBERT & REHBEIN (SEQ) PTY LTD

A handwritten signature in black ink, appearing to read 'Michael Ward', written in a cursive style.

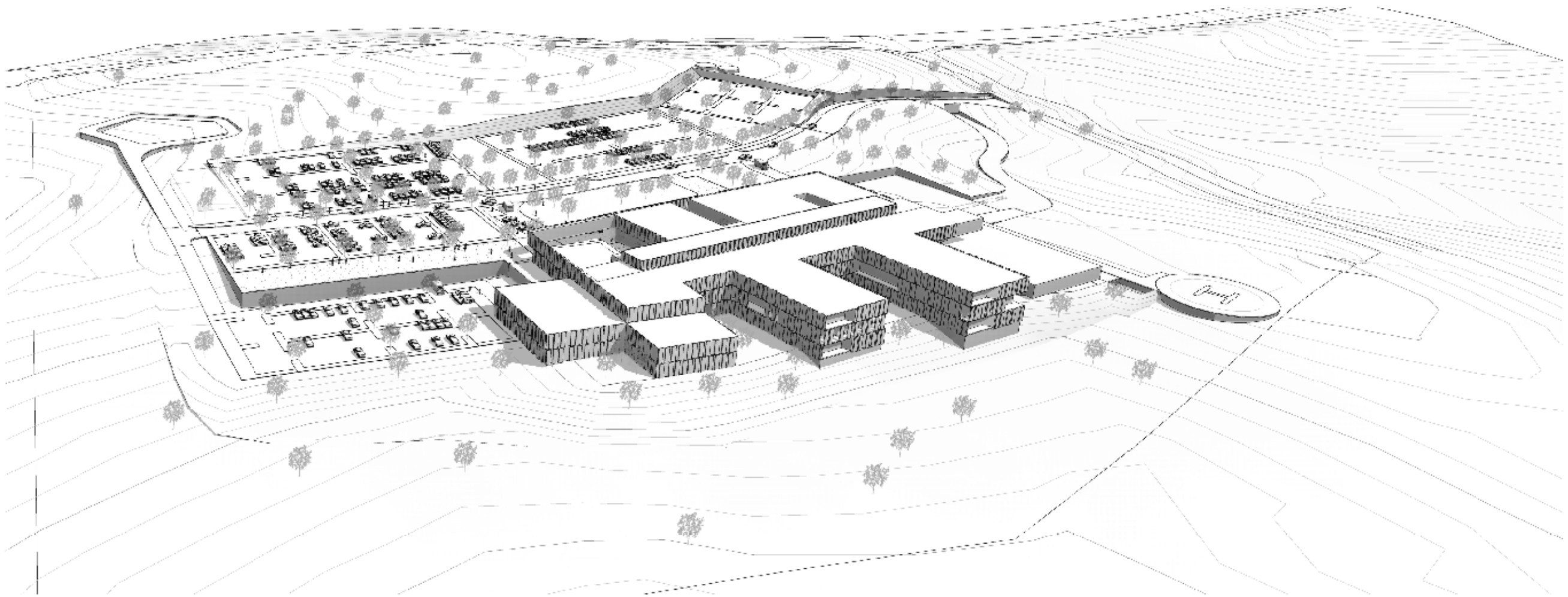
M. WARD Dip, M.Sc, MILTA
SENIOR AVIATION CONSULTANT



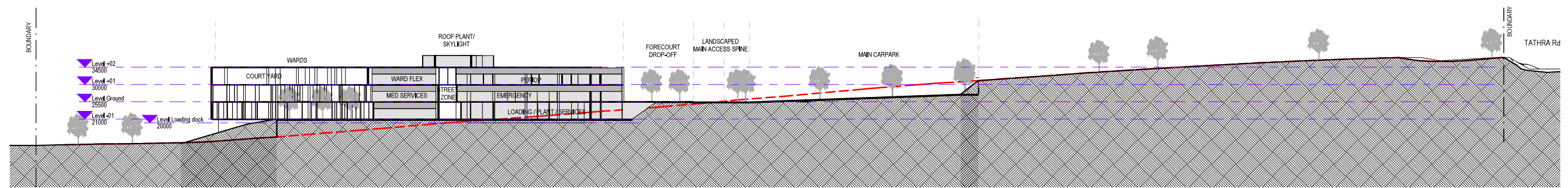




1 aerial_A
SK_102



2 Aerial_B
SK_102



Section courtyard

4
SK_103

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BVNArchitecture

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Section

SK_103 22.06.12