



Appendix B

Architectural and Urban Design Report

TWEED VALLEY HOSPITAL NSW

ARCHITECTURAL AND URBAN DESIGN REPORT
EIS CONCEPT MODIFICATION SUBMISSION

23 SEPTEMBER 2019



Project: **Tweed Valley Hospital**
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1.0 Preamble

Silver Thomas Hanley, Bates Smart (STH-BS) have been engaged by Health Infrastructure NSW to provide Architectural Services for the design of Tweed Valley Hospital.

This report has been prepared to support a Modification Application to the Concept Proposal for the Tweed Valley Hospital (Development Consent SSD 9575). This report should be read in conjunction with the Architectural and Urban Design Report submitted with the Stage 2 SSD application and EIS.

Overview

On the 11 June 2019 the Minister for Planning and Public Spaces granted approval for the Concept Proposal and Stage 1 Early and Enabling Works for the new Tweed Valley Hospital (SSD 9575) located at 771 Cudgen Road, Cudgen (Lot 11 DP1246853).

An application under Section 4.55 (2) of the Environmental Planning and Assessment Act 1979 (EP&A Act) to modify the Concept Proposal component of SSD 9575 has been lodged with the Department of Planning, Industry and Environment. A Modification Report has been prepared to assist in the assessment of the application which, along with supporting documentation, provides a clear outline of the proposed modifications to the Concept Proposal.

The Tweed Valley Hospital Project broadly consists of:

- Delivery of the Tweed Valley Hospital; a new Level 5 major regional referral hospital to provide the health services required to meet the needs of the growing population of the Tweed-Byron region (in conjunction with the other hospitals and community health facilities across the region);
- Delivery of the supporting infrastructure required for the Tweed Valley Hospital, including green space and other amenities, roads and car parking, external road upgrades and connections, utilities connections, and other supporting infrastructure.

The Approved Development

The Concept Proposal and Stage 1 Early and Enabling Works were approved for the new Tweed Valley Hospital (SSD 9575) by the Minister of Planning and Public Spaces on 11 June 2019. All documents relating to the approval can be found on the project website at <https://www.planningportal.nsw.gov.au/major-projects/project/10756>

SSD 9575 granted development consent for a Concept Proposal comprising:

- The maximum building envelope for a nine-storey hospital with helipad and plant rooms on the rooftop;
- The maximum building envelope for a building for support services (health hub);
- The maximum gross floor area of 65,000 square metres for the hospital and the health hub building on the site;
- The site layout, internal roads, site access arrangements and car parking provisions
- A landscape master plan, concept public domain treatments and stormwater strategy; and
- Tweed Coast Road and Cudgen Road intersection upgrade works.

Proposed Modification

The application to modify SSD 9575 proposes the following amendments and inclusions:

- Reconfiguration of on-site parking, including a new Multi-Deck Carpark (up to 10 storeys in height accommodating up to approximately 1,388 parking spaces) in conjunction with on-grade parking (approximately 128 parking spaces) to meet demand requirements to 2031/32.
- A temporary building to accommodate the 'Tweed Valley Skills Centre' which will include:
 1. A prototype and simulation suite, to verify the detailed design of key clinical spaces for the hospital.
 2. Skills and Employment Hub - a drop-in facility for community and local industry, providing information on training and careers in the construction industry, jobs on the Project and support in developing business capability and tendering for subcontract work packages and supply contracts.
- An increase in the proposed number of hospital beds from 430 to 499 beds (excluding emergency beds).
- An amendment to the approved Planning Envelope to accommodate the following design changes:
 1. Changes to the size and location of the health hub
 2. Massing of the Main Hospital building.
- Change of maximum GFA to approximately 65,050m². (GFA Definition: Gross Floor Area, as defined in the Standard Instrument: Principal Local Environmental Plan as at the date of this development submission)
- An amendment to the Zonal Landscape Plan, to include:
 1. Modification to and refinement of the east end of the site, including specification of low maintenance native landscaping
 2. Two types of native landscaping treatment defined, including; "hydromulched/drill seeded lawn" and "lawn with clusters of native planting".
 3. 30m vegetated buffer along Cudgen Road extended south to meet the west title boundary

A full set of architectural plans showing the proposed modifications are included in the EIS Concept Modification Report.

1.1 Architectural Drawings, Revisions Schedule

This report is to be read in conjunction with the Architectural drawings included in the Concept Modification Report submission.

Table 1. Architectural Drawing Register

Drawing Ref.	Rev	Drawing Title	Description of Modification
EIS Concept Proposal Drawings			
AR-SKE-02-001	[01]	Context Plan	None
AR-SKE-02-002	[02]	Site Plan	<ul style="list-style-type: none"> Updated Aerial Photograph
AR-SKE-02-003	[03]	Topography	<ul style="list-style-type: none"> Planning Envelope Modifications; Main Hospital Building, Health Hub and Essential Energy Switching Compound (EESC) New Planning Envelope, including; Multi-Deck Carpark, Central Energy Plant (CEP) and Skills Centre
AR-SKE-10-002	[02]	Masterplan - Building Siting & Aviation	<ul style="list-style-type: none"> Flight Path Coordinated with Aviation Consultant advice
AR-SKE-10-003	[04]	Masterplan - Building Footprint & Area of Influence	<ul style="list-style-type: none"> Planning Envelope Modifications; Main Hospital Building, Health Hub and EESC New Planning Envelope, including; Multi-Deck Carpark, CEP and Skills Centre Road Network Modification
AR-SKE-10-004	[04]	Masterplan - Boundary Setbacks	<ul style="list-style-type: none"> Planning Envelope Modifications; Main Hospital Building, Health Hub and EESC New Planning Envelope, including; Multi-Deck Carpark, CEP and Skills Centre Road Network Modification
AR-SKE-10-005	[04]	Masterplan - Asset Protection Zone (APZ)	<ul style="list-style-type: none"> Planning Envelope Modifications; Main Hospital Building, Health Hub and EESC New Planning Envelope, including; Multi-Deck Carpark, CEP and Skills Centre Road Network Modification
AR-SKE-10-006	[08]	Masterplan - Concept Plan	<ul style="list-style-type: none"> Planning Envelope Modifications; Main Hospital Building, Health Hub and EESC New Planning Envelope, including; Multi-Deck Carpark, CEP and Skills Centre Road Network Modification
AR-SKE-10-007	[04]	Masterplan - Vehicular Access (1 of 2)	<ul style="list-style-type: none"> Planning Envelope Modifications; Main Hospital Building, Health Hub and EESC New Planning Envelope, including; Multi-Deck Carpark, CEP and Skills Centre Road Network Modification
AR-SKE-10-008	[04]	Masterplan - Vehicular Egress (2 of 2)	<ul style="list-style-type: none"> Planning Envelope Modifications; Main Hospital Building, Health Hub and EESC New Planning Envelope, including; Multi-Deck Carpark, CEP and Skills Centre Road Network Modification
AR-SKE-10-009	[04]	Masterplan - Proposed Site levels	<ul style="list-style-type: none"> Planning Envelope Modifications; Main Hospital Building, Health Hub and EESC

			<ul style="list-style-type: none"> • New Planning Envelope, including; Multi-Deck Carpark, CEP and Skills Centre • Road Network Modification
AR-SKE-10-010	[03]	Revised Planning Envelope Plan	<ul style="list-style-type: none"> • Planning Envelope Modifications; Main Hospital Building, Health Hub and EESC • New Planning Envelope, including; Multi-Deck Carpark, CEP and Skills Centre • Road Network Modification
AR-SKE-50-101	[09]	Planning Envelope - South East Elevation - Hospital	<ul style="list-style-type: none"> • Planning Envelope Modifications; Main Hospital Building and Health Hub
AR-SKE-50-110	[01]	South Elevation - Multistorey Carpark	<ul style="list-style-type: none"> • New Drawing • New Planning Envelope, including; Multi-Deck Carpark
AR-SKE-50-201	[09]	Planning Envelope - North West Elevation - Hospital	<ul style="list-style-type: none"> • Planning Envelope Modifications; Main Hospital Building
AR-SKE-50-210	[01]	North Elevations - Multistorey Carpark	<ul style="list-style-type: none"> • New Drawing • New Planning Envelope, including; Multi-Deck Carpark • Planning Envelope Modifications; Main Hospital Building and EESC
AR-SKE-50-301	[09]	Planning Envelope - South West Elevation - Hospital	<ul style="list-style-type: none"> • Planning Envelope Modifications; Main Hospital Building and Health Hub
AR-SKE-50-401	[09]	Planning Envelope - North East Elevation - Hospital	<ul style="list-style-type: none"> • Planning Envelope Modifications; Main Hospital Building and Health Hub
AR-SKE-50-501	[04]	Revised Planning Envelope – Elevations	<ul style="list-style-type: none"> • Planning Envelope Modifications; Main Hospital Building, Health Hub and EESC
AR-SKE-51-001	[04]	Site Section B - East Carpark	<ul style="list-style-type: none"> • Road Network Modification
AR-SKE-51-002	[02]	Site Section C – West Carpark	<ul style="list-style-type: none"> • Drawing Obsolete
AR-SKE-51-003	[04]	Section A - Hospital Building	<ul style="list-style-type: none"> • Hospital & Health Hub, Planning Envelope Modification
AR-SKE-53-101	[04]	Shadow Studies (1 of 2)	<ul style="list-style-type: none"> • Planning Envelope Modifications; Main Hospital Building, Health Hub and EESC • New Planning Envelope, including; Multi-Deck Carpark, CEP and Skills Centre • Road Network Modification
AR-SKE-53-102	[04]	Shadow Studies (2 of 2)	<ul style="list-style-type: none"> • Planning Envelope Modifications; Main Hospital Building, Health Hub and EESC • New Planning Envelope, including; Multi-Deck Carpark, CEP and Skills Centre • Road Network Modification
L-EIS-2 (Turf, Landscape)	[H]	Landscape Zonal Plan	<ul style="list-style-type: none"> • Landscape Schematic Design changes • Planning Envelope Modifications; Main Hospital Building, Health Hub and EESC • New Planning Envelope, including; Multi-Deck Carpark, CEP and Skills Centre • Road Network Modification
L-EIS-3 (Turf, Landscape)	[F]	Pathway Network	<ul style="list-style-type: none"> • Landscape Schematic Design changes • Planning Envelope Modifications; Main Hospital Building, Health Hub and EESC • New Planning Envelope, including; Multi-Deck Carpark, CEP and Skills Centre • Road Network Modification

1.2 Introduction

This submission seeks approval of a modified Concept Proposal (approved under SSD 9575), to ratify the developed schematic design of the hospital for which consent will be sought via an SSD Stage 2 submission process. This report is provided to support a Concept Proposal Modification prepared by Geolink on behalf of Health Infrastructure. The report provides a summary of design progression that has resulted in a requirement to amend the approved Concept Proposal.

Since initial submission of the EIS and Concept Proposal in October 2018, the site has undergone rezoning, which brought about amendment to the Tweed LEP 2014. The change in zoning was necessary to develop the Tweed Valley Hospital which is now changed to SP2 Infrastructure (Health Services Facility). Land zoning modification is reflected in drawing AR-SKE-02-004[02] Site Analysis, Land Uses.

Selected permissible Preliminary Works have been completed on site, the progress of which is reflected in drawing AR-SKE-02-002 [02] Site Plan.

Tweed Valley Hospital having undergone Schematic Design has largely remained consistent with the original masterplan concept intent. Changes to the approved Concept Proposal have arisen because of brief refinement and associated design development, budgetary efficiencies, improved sustainability and further consolidation of the campus masterplan.

The principal Concept Modifications include;

- Reconfiguration and consolidation of on-site car parking, including a provision for a multi-deck carpark, supplemented by reduced on-grade car parking located to the east of the hospital
- *Tweed Valley Skills Centre (proposed temporary building)* is required to support the construction stage for prototype development and skills training
- Amendment to the Main Hospital Building Planning Envelope to accommodate Schematic Design Stage design development changes
- Amendment to the Health Hub Planning Envelope to accommodate Schematic Design Stage design development changes
- Expansion of the Electrical Switching Station Planning Envelope to incorporate additional electrical services infrastructure, now renamed Essential Energy Switching Compound (EESC)
- Design refinement of the on-site road network, including modifications to support the inclusion of the proposed multi-deck carpark

2.0 Reconfiguration and Consolidation of on-site car parking

Current Approved Concept Design

The current approved concept design provides for an all on-grade carparking strategy. This included on-grade surface parking located to the east and west flanks of the hospital. The masterplan

concept plan located the public car parking directly adjacent to the hospital to minimise travel distance, locating the staff parking beyond.

Public carpark access is via the main hospital entrance (B) and the left only slip-road (C). Vehicle access between public parking areas to the east and west is possible via the on-site road network. All public vehicle egress is via the main hospital entrance (B). Refer drawing AR-SKE-10-007 and AR-SKE-10-008 for vehicle Access and Egress.

West staff carpark access is via the left only slip-road (A), the main hospital entrance (B) or via the north service road access off the new entrance to be formed at the Turnock Street round-about (D). Egress is via the main hospital entrance or via the north service road, Turnock Street exit (D). East staff carpark access options via the left only skip-road (C) or via the Turnock Street round-about (D). Egress is via the main hospital entrance (B) or via the Turnock Street round-about (D). Vehicle access between staff car parking zones is possible via the north service road.

Proposed Concept Design Modification

The Concept Modification proposes a reconfiguration of the carparking strategy for the site, including the introduction of a Multi-Deck Carpark structure (up to 10 storeys). The Multi-Deck Carpark is to be complemented with a reduced yield on-grade public carpark serving the east of the hospital (approximately 128 spaces) – retained proximate to key clinical departments including; Mental Health, Renal, Oncology and Maternity. Short-term parking bays are also provided to complement the east and west public set-down areas.

The Multi-Deck Carpark, will provide an approximate parking yield of up to 1388 spaces, is intended to accommodate staff carparking in its entirety and a substantial majority of the required public carparking spaces. The Multi-Deck Carpark and on-grade parking areas are designed to meet the forecast parking demand for the hospital. The masterplan contemplates that carparking associated with future development on campus is expected to be provided within that development, which may include basement car parking.

The key benefits of the multi-deck carpark, over on-grade parking include;

- yield capacity to meet long term parking demand (public and staff parking)
- reduction in hardstand reduces the need for surface water drainage and improves landscape amenity in the starting case
- reduced walking distances from parking to hospital
- improved sustainability, with low impact on development of future complementary program
- reduced requirement for street lighting, with ecological benefits
- more efficient car parking management
- improved vehicle and user security
- increased accessible parking capacity
- parking management flexibility

The revised parking configuration on site modifies the proposed concept masterplan access and egress strategy. The strategy for public carparking access and egress remains unchanged, however redistribution of capacity has been modified to locate the primary parking yield to the west of the hospital within the Multi-Deck Carpark. Dedicated public access to the carpark will be from the main hospital entrance via the internal public boulevard. The various entrance set down and sort term parking spaces at each hospital entrance remains unchanged.

The strategy for staff carparking access and egress has been modified. All staff parking is to be consolidated within the Multi-Deck Carpark. All staff access and egress to the Multi-Deck carpark will be from the north service road. Access to the north service road will be via site entrances (A) left only slip-road, and (D) Turnock street round-about. Egress will be via entrance (D) only – Turnock Street round about, refer drawings AR-SKE-10-007 and AR-SKE-10-008 for vehicle Access and Egress.

The EIS Concept Proposal drawings have been modified to provide a new Planning Envelope, located to the west of the hospital, within which the proposed 10 storey structure will be designed in its entirety. The Planning Envelope is approximately 74m x 69m in plan and approximately 31m tall reducing in height with the existing site topography which will be minimally modified.

Shadow studies of the revised Masterplan Concept (Planning Envelope) have been prepared. Studies identify minimal shadow impacts to surrounding neighbouring buildings and amenity. Minor shadow casting affecting the west neighbouring land occurs, identified at 9am on the winter solstice, being a consequence of the low sun angle.

Visual Impact montages have been prepared to reflect the additional Planning Envelope. The comparative low floor to floor levels of the Multi-Deck Carpark ensures the structure remains low in height adjacent to the hospital, adding minimal additional low-level mass to the visible bulk of the development from the local vantage positions studied. Further visual impact appraisal will be provided with the Stage 2 SSD planning submission.

3.0 Tweed Valley Skills Centre

The proposed Prototype Skills Centre will be a stand-alone temporary structure, supplementary to those described in the initial EIS concept application. It will comprise a single storey, modular building on temporary footings, incorporating an attached external deck area under the main roof structure, accessed via pedestrian steps and accessible ramp.

It is proposed that during construction of the main hospital, the Prototype Skills Centre will be used for assessment of generic room type and training activities, and prior to commissioning of the Main Hospital Building, the prototype Skills Centre will be disassembled and relocated to the Kingscliff TAFE campus, where it will remain as a valuable training facility into the future.

The Prototype Skills Centre will comprise a series of interior spaces accommodating various functions for both the short-term assessment of prototype rooms and spaces for education and training, together with associated support areas.

Construction of full-scale prototype rooms is essential for assessing the suitability of generic room types proposed for the main hospital. They allow staff, consumers, carers, students and community members the opportunity to visualize how the various spaces will function, provide a platform for training, workforce and service planning.

They provide opportunities for testing of models of care, training and education, staff induction and emergency response simulations in various environments identical to those proposed for the hospital. The prototyping process also assists in the testing of functional briefing and design issues and allows adjustments to be made before generic room types are built within the Main Hospital.

Locating the prototype rooms on the new hospital site, as opposed to the existing hospital or elsewhere, provides context for end users while making the facility more accessible to the community the hospital will ultimately serve.

Its proximity to the Kingscliff TAFE campus will allow TAFE staff and students ready access to the facility for education and training purposes.

It is expected that the Prototype Skills Centre will be in constant use throughout construction of the hospital and that relocation to the TAFE campus will occur at a suitable time prior to completion of the hospital.

4.0 Amendment to the Hospital building Planning Envelope

The Concept Modification submission seeks consent for a modified hospital Planning Envelope. The proposed modified planning envelope remains similar in many respects to the approved planning envelope, with changes to the form primarily required to the lower levels. The key drivers behind the requirement to modify the planning envelope include;

- Progression of the detailed health facility planning, with deviations impacting the north east flank at ground and lower ground levels
- Requirement for an on-grade central energy plant. The central energy plant is a screened unroofed zone, located at basement and lower ground levels to the west of the building
- Accommodation of future expansion

Current Approved Concept Design

The approved Masterplan Concept provides a single planning envelope for the hospital, incorporating two below ground annexes located on the east and west flanks of the planning envelope, utilizing spatial zones beneath required vehicle hard stands for development. The

approved Planning Envelope has a maximum height of RL +67.10, with the primary hospital building mass height of RL +54.85. The base of the Planning Envelope measures approximately 136m x 187m in plan.

Proposed Concept Design Modification

The proposed Modified Planning envelope retains similar qualities to the approved envelope, retaining the maximum height of RL+ 67.10 and the primary building mass height at RL +54.85.

The base of the proposed modified Planning Envelope measures approximately 143m x 199m in plan, being marginally larger.

Drawings AR-SKE-10-010[03] Revised Planning Envelope Plan and AR-SKE-50-501[04] Revised Planning Envelope Elevations, illustrate the extent of change proposed compared with the approved Planning Envelope. The Concept Design Modifications are of a minor nature and result in minimally perceivable change to the resulting shadow studies and visual impact montages.

5.0 Amendment to the Health Hub building Planning Envelope

The Concept Modification submission proposes a minor modification to the effective width of the Health Hub planning envelope. The approved planning envelope maximum height is to remain unchanged at RL +39.40. Modification to the approved planning envelope is required as a result of health facility planning. The ground level of the Health Hub will be set in close relationship with the natural ground level at RL +26.60, in order to minimise the requirement for extensive cut and fill, and further to meet DDA accessible building entrance compliance. The Planning Envelope for the Health Hub remains substantially similar to the approved Planning envelope.

6.0 Amendment to the Electrical Switching Station Kiosk Planning Envelope

The Concept Modification submission seeks approval for the minor expansion of the planning envelope accommodating the Electrical Switching Station located in the south west corner of the site. The modification proposes expanding the planning envelope, with no impact to the current designed service roadway or effective agricultural buffer zones. Buffer zones are retained at 10m to the west and 30m to Cudgen Road respectively, also accommodating future buffer widening to the west of the compound should this be required. The larger compound will in addition to accommodating an electrical switching kiosk, also accommodate HV electrical backup generators with associated below ground fuel supply located beneath the adjacent roadway service layby. Generators will be provided in acoustic attenuated containers, further enclosed by compound screening and landscaping to improve compliance with acoustic performance requirements. The “Electrical Switching Station Kiosk” has been renamed “Essential Energy Switching Compound (EESC)”.

7.0 Design Refinement of the on-site roadway network

The proposed Concept Modification site road network strategy remains functionally similar to the approved EIS Concept Masterplan. The Concept modification includes changes in response to the modified carpark arrangement, detailed in section 2.0 above.

The modifications to the west of the hospital include replacing the expansive on-grade parking with a Multi-Deck Carpark resulting in a reduced site area footprint. The main public roadway has also been modified at its western end, providing a round-about enabling vehicles to return without a requirement to enter the Multi-Deck Carpark.

Modifications to the east of the hospital include elimination of the furthest staff carpark, which included the link roadway connecting to the north service road. The east public on-grade carpark has been reduced in capacity. The configuration of the on-grade carpark has been revised due to topographical constraints and to facilitate access to Mental Health, Renal, Oncology and Maternity departments. The modification also reduces the required extent and scale of retaining walls along the interfacing north ridge line.

8.0 Landscape Design Modifications

The Concept Modification includes a revised Landscape design. The revised design responds to the following design refinements;

- Amendment of proposed farmland to the east of the site, reverting certain zones to low maintenance native landscaping
- General modifications to align the landscape design with the Concept Modification site masterplan design.
- Farm landscape zone split into new zones named 'Existing Orchard', 'Community Garden Opportunity' and 'Therapy Garden Opportunity'.
- 'Low Maintenance Native Landscape' zone split into 'Hydro-mulched/drill seeded lawn' and 'Lawn with clusters of native planting'
- 30m section of 'Vegetation buffer' extended south to meet western boundary
- Pathways down to and north of the loop road removed

The landscape design proposal is principally similar to the approved EIS Concept Masterplan

End.